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Wang, YL; LI, YJ; LI, L; Huang, MJ.

Corresponding author:

Wang Yaolan

wyl202125@163.com

Author Affiliation:

West china hospital.

ADMINISTRATIVE INFORMATION**Support** - Individual.**Review Stage at time of this submission** - Data analysis.**Conflicts of interest** - None declared.**INPLASY registration number:** INPLASY202490104**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 24 September 2024 and was last updated on 24 September 2024.**INTRODUCTION**

Review question / Objective Objective: this study aims to systematically evaluate and summarize the findings from existing literature regarding the impact of mHealth interventions on CRC postoperative patients, to clarify the effectiveness of mHealth interventions in improving gastrointestinal symptoms, self-care capabilities, and quality of life in this patient population.

Condition being studied Background: Approximately 80% to 90% of colorectal cancer (CRC) patients experience long-term gastrointestinal symptoms such as diarrhea and fecal incontinence after surgery[1], severely affecting their postoperative quality of life. Mobile health (mHealth) interventions, as an emerging health management approach, play a significant role in improving patient health outcomes, promoting behavioral changes, and enhancing quality of life[2]. In recent years, mHealth interventions have been increasingly applied to the

health management of CRC postoperative patients. However, studies and systematic reviews on the effectiveness of mHealth interventions on CRC postoperative patients remain scarce. Additionally, the gastrointestinal symptoms and self-care capabilities of CRC postoperative patients have received less attention.

METHODS

Search strategy Database: PubMed, Web of Science, Embase, Cochrane Library, Chinese Biomedical Literature Database, CNKI, and Wanfang Database.

Terms: colorectal neoplasms survivors; telemedicine; remote medicine; Mobile Health; mHealth; Telehealth; eHealth; Virtual Medicine; digital health; internet health; intelligent medicine; cloud medicine; Tele-Care; Internet; web-based; Online; computer ; Smartphone; mobile phone; social media; social networking ; web-based social media ; Email; electronic mail mobile-phone e-mail; app ; Applications; Mobile Applications; computer-based applications; Smartphone applications;

Wearable Electronic Devices ; Wearable Device; Wearable Technology; intestinal symptoms; self-care ability; quality of life.

Participant or population Postoperative patients with colorectal cancer.

Intervention Mobile medical intervention.

Comparator Conventional care.

Study designs to be included Randomized controlled trial.

Eligibility criteria Inclusion criteria :

1 Research Design : Randomized controlled study ; 2 research object : postoperative patients with colorectal cancer ; intervention measures : mobile medical intervention, including the application of mobile phones, WeChat platform, website, APP and other wireless devices for health management of patients ; 4 control : routine nursing ; 5 outcome : intestinal symptoms, self-efficacy and quality of life ; 6 Language is Chinese and English literature.

Exclusion criteria : 1 Repetitively published literature ; 2 unable to obtain full text or research data incomplete literature ; literatures with methodological quality rating of C ; 4 Patients with enterostomy after colorectal cancer surgery.

Information sources PubMed, Web of Science, Embase, Cochrane Library, Chinese Biomedical Literature Database, CNKI, and Wanfang Database.

Main outcome(s) Intestinal Symptoms, Self-Care Ability, and Quality of Life.

Quality assessment / Risk of bias analysis

According to the Cochrane Handbook bias risk assessment criteria, the quality of the included literature was evaluated by two researchers. If the evaluation results are inconsistent, the third researcher is invited to assist in the decision. The evaluation criteria include : 1 the generation of random sequences ; 2 allocation hiding ; 3 The blind method was applied to the research objects and intervention implementers ; 4 The blind method was applied to the result evaluators ; 5 The integrity of outcome data ; 6 the possibility of selective reporting ; 7 Other sources of bias. Each criterion was evaluated by ' low risk bias ', ' high risk bias ' or ' unclear '. If the above criteria are fully met, it shows that the possibility of various bias is the smallest, which is grade A ; partially meet the above criteria, indicating that the possibility of bias is moderate, grade B ; it does

not meet the above criteria at all, indicating that the possibility of bias is high, which is grade C.

Strategy of data synthesis The RevMan 5.4 software was used to calculate the mean difference (MD) and 95% confidence interval (CI) to estimate the intervention effects and to perform sensitivity analysis to test the robustness of the combined results.

Subgroup analysis No.

Sensitivity analysis Sensitivity analysis revealed no significant changes in the pooled effect sizes, indicating that the results of this meta-analysis are stable.

Country(ies) involved China.

Keywords Keywords: mobile health colorectal cancer intestinal symptoms self-care ability quality of life meta-analysis.

Contributions of each author

Author 1 - Wang Yaolan - Author 1 : Literature retrieval, literature screening, quality evaluation, basic information extraction, data extraction, data analysis, article writing.

Email: wyl202125@163.com

Author 2 - Li Yujie - Author 2 : Literature screening, quality evaluation, basic information extraction, part of the article writing.

Email: 446953258@qq.com

Author 3 - Huang Mingjun - Author 3: To guide the topic selection, literature quality evaluation, paper writing, etc.

Email: huangmingjun@wchscu.cn