

SHORT COMMUNICATION

Digital Innovation in Rehabilitation Nursing for Exercise Prescription for People with Inflammatory Bowel Disease

Innovación digital en enfermería de rehabilitación para la prescripción de ejercicio a personas con enfermedad inflamatoria intestinal

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ABSTRACT

Introduction: inflammatory bowel disease, which includes Crohn's disease and ulcerative colitis, is characterized by chronic inflammation, unpredictable symptoms, and significant physical and psychological impact. In this context, digital technologies and physical exercise emerge as promising allies for improving quality of life and self-management of the disease.

Objective: to analyze the relevance of prescribing physical exercises for people with Inflammatory Bowel Disease, using mobile applications, highlighting the role of rehabilitation nursing in the development and implementation of personalized digital solutions.

Development: inflammatory bowel disease requires multidimensional approaches that integrate symptom management, health literacy, psychosocial support, and healthy lifestyles. Physical exercise has proven benefits for fatigue, sleep, anxiety, depression, and awareness of disease activity, and is considered a fundamental pillar of rehabilitation. The use of digital platforms increases adherence, allows for remote monitoring, and favors personalized adjustments.

Conclusions: mobile apps used to prescribe physical exercise for Inflammatory Bowel Disease patients have transformative potential by integrating personalization, continuous monitoring, and motivational support. These solutions can reduce logistical barriers, promote self-management, and enhance quality of life.

Keywords: Inflammatory Bowel Disease; Nursing; Physical Exercise; Rehabilitation; Quality of Life; Telemedicine.

RESUMEN

Introducción: la enfermedad inflamatoria intestinal, que incluye la enfermedad de Crohn y la colitis ulcerosa, se caracteriza por inflamación crónica, síntomas impredecibles y un impacto físico y psicológico significativo. En este contexto, las tecnologías digitales y el ejercicio físico emergen como aliados prometedores para mejorar la calidad de vida y el autocontrol de la enfermedad.

Objetivo: analizar la relevancia de la prescripción de ejercicio físico a personas con enfermedad inflamatoria

intestinal mediante aplicaciones móviles, destacando el papel de la enfermería rehabilitadora en el desarrollo e implementación de soluciones digitales personalizadas.

Desarrollo: la enfermedad inflamatoria intestinal requiere enfoques multidimensionales que integren el manejo de los síntomas, la alfabetización en salud, el apoyo psicosocial y estilos de vida saludables. El ejercicio físico ha demostrado beneficios para la fatiga, el sueño, la ansiedad, la depresión y la percepción de la actividad de la enfermedad, y se considera un pilar fundamental de la rehabilitación. El uso de plataformas digitales aumenta la adherencia, permite la monitorización remota y favorece los ajustes personalizados.

Conclusiones: las aplicaciones móviles utilizadas para la prescripción de ejercicio físico a pacientes con enfermedad inflamatoria intestinal tienen un potencial transformador al integrar la personalización, la monitorización continua y el apoyo motivacional. Estas soluciones pueden reducir las barreras logísticas, promover la autogestión y mejorar la calidad de vida.

Palabras clave: Calidad de Vida Enfermedad Inflamatoria Intestinal; Enfermería; Ejercicio Físico; Rehabilitación; Telemedicina.

INTRODUCTION

Inflammatory Bowel Disease (IBD), which includes ulcerative colitis and Crohn's disease, is characterized by chronic inflammation of the gastrointestinal tract, associated with physical and psychological manifestations that have a market impact on quality of life (QoL).^(1,2,3) significantly

Recently published epidemiological data show that inflammatory bowel disease affects more than 0,3 % of the world's population and approximately 0,2 % of the European population. Although the incidence is decreasing in Western countries, prevalence continues to increase, which constitutes a complex and burdensome challenge for individuals and healthcare systems.^(4,5,6)

Its chronic nature poses complex challenges for individuals, families, professionals, and healthcare systems. Despite advances in the knowledge and treatment of IBD, gaps remain in understanding the factors that influence its behavior. The literature emphasizes several relevant dimensions in the management of IBD, such as symptom control, nutrition, teamwork, literacy of individuals, family, and society, access to information, fatigue control, and physical exercise.^(7,8)

Digital technologies are promising tools for remote monitoring, early detection of symptoms and support for personalized management, promoting better clinical outcomes and a higher QoL.^(8,9) Physical exercise is considered a fundamental pillar in the management of IBD symptoms, contributing to improved muscle function, mental health, fatigue and QoL.^(10,11)

In this context, the participation of rehabilitation nurses in the design and development of new technologies is essential to ensure person-centered interventions that promote self-management, health and well-being. QoL. This article aims to analyze the relevance of creating and implementing physical exercise prescription programs for people with IBD using mobile applications and highlights the role of rehabilitation nursing in the development and implementation of personalized digital solutions.

solutions.

METHOD

This is a literature review. A bibliographical search was carried out in databases during the month of April 2025. A search was conducted on the EBSCOhost platform (CINAHL Complete; Cochrane Central Register of Controlled Trials; Cochrane Database of Systematic Reviews; Cochrane Methodology Register; MedicLatina; MEDLINE Complete; and Library, Information Science & Technology Abstracts) with the following descriptors: doença inflamatória intestinal ou Crohn's disease or ulcerative colitis, nursing interventions, telemedicine, and exercise. We chose the last 5 years to update, include, and analyze articles with a higher level of evidence (systematic reviews with and without meta-analysis). The inclusion criteria were defined as articles addressing the exercise, nursing intervention, quality of life and telemedicine.

DEVELOPMENT

Chronic disease, due to its prolonged duration and potential for incapacitation, poses a significant challenge for healthcare systems.⁽⁷⁾ In the case of IBD, the diagnosis is experienced as a disruptive event, marked by unpredictable symptoms that affect personal, social, and professional life.^(12,13) Among these, fatigue, aggravated by stress and poor sleep quality, is particularly notable for its negative impact on well-being and QoL.^(14,15)

Due to its complexity and increasing prevalence, IBD requires rigorous and personalized management, focused on maintaining healthy mucosa, disease remission, and preventing complications.^(10,16) The literature emphasizes that effective management involves multiple dimensions, including symptom control, nutrition,

physical exercise, health literacy, fatigue management, access to information, and family and social support.^(7,17,18) Given the pressure on health services and the high costs associated with chronic diseases, telemedicine emerges as a valuable tool for reorganizing IBD care, promoting more person-centered and value-based practices.^(16,19,20) At the same time, the use of the internet to obtain information about diseases, treatments and scientific guidance is growing in popularity and is supported by evidence.^(19,21)

Digital platforms, particularly mobile applications, have expanded the use of digital health, with clinical trials demonstrating benefits in vitality, general health, and social functioning.⁽⁸⁾ Although their role in telemedicine is growing, few applications have clinical validation.⁽¹⁹⁾ In IBD, where non-adherence to therapy is common, digital platforms In IBD, where non-adherence to treatment is common, digital platforms play an important role in disease management, promoting proximity to healthcare teams, and continuous monitoring. Digital platforms can support people with IBD in managing their condition by facilitating communication with healthcare teams, rapid responses, and continuous monitoring.^(19,22,23,24)

IBD requires multidimensional approaches to symptom management, and physical exercise emerges as a relevant component, as long as it is adapted to individual needs. Studies demonstrate positive associations between physical activity and self-reported outcomes.^(10,11) Physical fitness is generally understood as the set of qualities that allow one to perform physical and daily activities.⁽²⁵⁾ Therapeutic exercise, as a systematic practice with preventive and rehabilitation purposes, supports the reduction of fatigue, improving sleep, controlling anxiety and preventing depression.⁽²⁶⁾ In a context of unpredictability and fluctuating symptoms, the importance of integrating physical exercise, prescribed individually and based on scientific principles, into multidisciplinary care plans is reaffirmed, recognizing its positive impact and contribution to a person-centered approach.

Evidence points to positive associations between physical exercise and Patient-Reported Outcomes (PROs), including perception of disease activity and psychosocial dimensions.⁽¹¹⁾ Despite the importance of physical exercise, a systematic review of the literature indicates that only a small fraction of digital applications dedicated to IBD address this aspect, reinforcing the need for validated and person-centered solutions.⁽¹⁹⁾

Exercise prescription, based on the FITT-VP principles (intensity, frequency, duration, type, volume, and progression), is supported by evidence demonstrating physiological, psychological, and health benefits. Although most people benefit from aerobic and resistance training, responses vary, and not everyone needs or achieves the recommended goals. The development of an individualized plan should consider personal goals, functional capacity, health status, social context, and responsiveness to exercise.⁽²⁵⁾

In the case of chronic diseases, including IBD, since there is no consensus on these parameters, the main challenge is to adapt recommendations to the specific needs of each individual. Rehabilitation nurses (RNs) have specific skills to plan, implement, and evaluate specialized programs and interventions, especially in the areas of physical exercise and functional capacity, in line with international guidelines.^(25,26,27)

The application of the FITT-VP guidelines enables EER to develop structured physical exercise plans that are adjustable to individual needs at different stages of the life cycle, favoring health promotion and the prevention of complications, through safe and effective rehabilitation.

Metrics such as QOL, fatigue, sleep, and disability are validated and effective variables for assessing the benefits of exercise in people with IBD.

Exercise prescription using digital platforms for people with IBD represents a promising innovation, aligned with telemedicine and personalized care.^(16,19,24) These tools offer flexibility, remote monitoring, and real-time adjustments, facilitating program adherence, reducing logistical barriers, and relieving pressure on healthcare services.^(21,28,29)

The implementation of these digital platforms requires individualized protocols and supervision by specialized professionals, due to the heterogeneity and unpredictability of the disease, avoiding potential risks.^(24,28)

Furthermore, it is essential that the tools have scientific validation and integrate continuous feedback between users and professionals, ensuring safety and optimizing experience and results.^(19,28,30)

In summary, digital exercise prescription for people with IBD has transformative potential, including personalized programs and continuous professional monitoring, promoting humanized healthcare and contributing to more effective self-management and improved QoL.

CONCLUSIONS

Digital technologies, particularly mobile applications, are promising tools for self-management of IBD, strengthening health literacy, and personalizing care. The integration of FITT-VP principles into physical exercise prescriptions brings significant health benefits. It is up to EERs to take a central role in the design, development, and implementation of these solutions, in order to respond in a specialized and person-centered way to the growing needs and challenges of people with chronic diseases.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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