

Review of Existing mHealth Apps for Self-Management of Inflammatory Bowel Disease using the Mobile Application Rating Scale

Linda Y. Chen, MS^{1,2}, Afroza Sultana, BS¹, Yi Hang Ian Yen, BA¹, Meghan Reading Turchioe, PhD, MPH, RN¹, Ruth Masterson Creber, PhD, MSc, RN¹; ¹Weill Cornell Medicine, Department of Population Health Sciences, Division of Health Informatics, New York, NY; ²Memorial Sloan Kettering Cancer Center, New York, NY

Introduction

Inflammatory bowel disease (IBD) is a chronic condition that targets the gastrointestinal tract and affects over 3 million adults in the United States (1). Both self- and clinical management are vital in the maintenance and prevention of disease exacerbation. The rising prevalence of IBD diagnosed in young adults has paralleled a rapid growth of mobile devices. Many mobile Health (mHealth) applications have been developed to support disease management, which aim to facilitate adherence to treatment plans, thus making it easier to achieve disease remission and improve quality of life (2).

Objective

The aim of this study is to review commercially available mHealth apps to evaluate their quality and functionalities using validated instruments, and to identify the best mHealth application for IBD monitoring and management.

Methods

A comprehensive search from 3 App Stores (Android, Apple, Amazon) for IBD management apps was conducted. The search terms used were symptom-specific (e.g. Diarrhea), site-specific (e.g. Bowel), and disease-specific (e.g. Crohn's Disease, Ulcerative Colitis, Irritable Bowel Syndrome, Inflammatory Bowel Disease). The final list of apps is rated using Mobile Application Rating Scale (MARS), IMS Institute for Health Informatics functionality scores, and self-management recommendations from the Crohn's & Colitis Foundation of America (3). Inter-rater reliability was used to confirm concordance among the reviewers. The remaining apps were rated by 2 reviewers independently.

Results

A total of 3,003 apps were screened and 14 apps were downloaded for review. The majority of the apps excluded were due to not being specific to IBD management, general health, or containing only one function related to IBD management. The highest rating for MARS is 4.2/5 and for IMS functional score is a 9/11. None of the apps have met all 8 self-management recommendations, however, there are 3 apps that contain 7 of the suggested features. The two highest rated apps were Gut Health Storylines, and Oshi: IBD Tracker, which held the highest ratings from MARS, a functional score of ≥ 7 , and contained most of the recommended features. The inter-rater reliability was high (two-way mixed CA-ICC = 0.94, 95% CI: 0.68-0.99).

Conclusion

There are limited numbers of commercially available mHealth apps that have a high MARS score, IMS functional score, and contains all recommended features suggested by the Crohn's and Colitis Foundation. Those with IBD should consider using the Gut Health Storylines and Oshi: IBD Tracker for health monitoring and management. In addition, app developers should strive to improve their design based on self-management guidelines from the Crohn's and Colitis Foundation and to increase the number of higher order functionalities, including communicating, sharing and evaluating data.

Functionality of included pps



References

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