IMPACT OF DIGITAL HEALTH MONITORING IN THE MANAGEMENT OF INFLAMMATORY BOWEL DISEASE

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Background: Inflammatory bowel disease (IBD) affects over 270,000 Canadians and costs the healthcare system $1.28 billion dollars annually. With advancements in technology, a shift from the traditional ‘reactive’ approach to IBD management to a ‘proactive’ approach that integrates self-management strategies using digital health monitoring platforms could greatly benefit patient care.

Aims: The purpose of this study was to investigate the effect of implementing the IBD health monitoring platform, HealthPROMISE, in clinical practice and to evaluate whether its use leads to better quality of care, improved health outcomes, and reduce resource consumption in patients with IBD.

Methods: IBD patients were recruited in gastroenterology clinics and asked to install the HealthPROMISE application onto their smartphones. Patient satisfaction, quality of care, quality of life, patient symptoms, and resource utilization metrics were collected throughout the study and sent directly to their healthcare teams. Patients with abnormal symptom/short inflammatory bowel disease questionnaire (SIBDQ) scores were flagged for their physicians to follow up with. After one-year, patient outcome metrics were compared to baseline values.

Results: Overall, out of 59 patients enrolled in the study, 32 patients (54%) logged into the application at least once during the study period. The number of IBD-related ER visits/hospitalizations in the year of use compared to the prior year demonstrated a significant decrease from 25% of patients (8/32) to 3% (1/32) (p=0.03). Patients also reported an increase in their understanding of the nature/cause of their condition after using the application (p=0.026). No significant changes were observed in the number of quality indicators met (p = 0.67) or in SIBDQ scores (p=0.48).

Conclusions: Given the significant burden of IBD, there is a need to develop effective management strategies. This study demonstrated that digital health monitoring platforms may aid in reducing the number of ER visits and hospitalizations in IBD.
patients. Future studies evaluating acceptability and costs with a larger sample size would help determine the feasibility and generalizability of widely implementing mobile health applications in the management of IBD.

Table 1. Patient demographics

| Characteristics       | N = 32 |
|-----------------------|--------|
| Sex, n (%)            |        |
| - Male                | 20 (62.5) |
| - Female              | 12 (37.5) |
| Diagnosis, n (%)      |        |
| - Crohn’s disease     | 23 (71.9) |
| - Ulcerative colitis  | 9 (28.1) |
| Smoking status, n (%) |        |
| - Active smoker       | 5 (15.6) |
| - Past smoker         | 5 (15.6) |
| - Non-smoker          | 22 (68.8) |

Figure 1. IBD-related ER/hospitalization use in the year prior to enrollment and the
year post-enrollment into HealthPROMISE.
*p<0.05

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