



Improving usability of a comprehensive self-management intervention to address anxiety and depression among persons with irritable bowel syndrome

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Project Overview

Aim 1. Discover Phase: To determine usability and acceptability of the comprehensive self-management intervention (an evidence-based psychosocial intervention) among individuals with irritable bowel syndrome and comorbid anxiety and/or depression.

Aim 2. Design/Build Phase: Apply a user-centered design approach to refine an existing comprehensive self-management intervention.

Population/Sample

14 patients and 12 healthcare providers. Patients were those with a healthcare provider diagnosis of irritable bowel syndrome and reported moderate to severe anxiety and/or depression. Healthcare providers were recruited from primary care and gastroenterology clinics.

Key Findings

As the start of the project coincided with the COVID-19 pandemic, we were able to include questions about the impact of the pandemic on symptoms among patients with irritable bowel syndrome and anxiety/depression. Fifty-five individuals with IBS and mild to severe anxiety and/or depression were included. The COVID-19 pandemic most commonly influenced their ability to spend time with friends and family, shop for certain types of food, and access health care. Participants also reported increased stress (92%), anxiety (81%), and depressive symptoms (67%). Finally, around half the sample reported increases in abdominal pain (48%), diarrhea (45%), or constipation (44%).

Fourteen patients and 12 healthcare providers reviewed the intervention content. Participants reported that the intervention was comprehensive and provided structure, accountability, and support. Feasibility was confirmed for patients but discordant for providers. Identified usability issues to address included the intervention delivery format, length, and lack of integration into health care settings that if not address may limit the reach of the intervention. Patients preferred online delivery of intervention materials along with weekly check-ins with a knowledgeable peer or provider. Healthcare providers also emphasized the importance of having a person delivering the intervention. These insights led us to develop a hybrid intervention approach such that patients have the intervention content delivered via a mobile app with weekly check-ins with a healthcare professional knowledgeable in both mental health and IBS. Patients who were currently receiving mental health counseling (n=5) saw the benefit of support from someone who could integrate IBS and mental health.

The adapted intervention was presented to 8 participants of which 7 had participated in interviews about the original intervention. Before the interview, participants reviewed three online modules and tracked their symptoms for 9 days. During the interview, participants provided feedback on the design and content of the intervention. Based on the participant feedback, additional adaptations and modifications are needed to provide appropriate visualizations of the data. In particular, the initial draft of the app enabled patients to track the number of good days they reported. We received overwhelming feedback that many patients do not feel that they have any good days and that tracking good days would make them feel worse about how they are doing. Additional changes are needed to develop usable tracking features and provide visualizations that can inform shared decision-making with healthcare providers.

Measures used

- We assessed mental health status using validated measures for depression ([PHQ-9](#)) and anxiety ([GAD-7](#))
- Participants were asked to complete the [Acceptability of Intervention Measure \(AIM\)](#), [Intervention Appropriateness Measure \(IAM\)](#), [Feasibility Intervention Measure \(FIM\)](#), and the [Intervention Usability Scale \(IUS\)](#).

Methods

Participants completed an online screening survey to determine study eligibility. Potential participants were invited to an interview where the intervention content and format was presented. Patients and healthcare providers completed surveys about the acceptability, appropriateness, feasibility, and usability of the intervention. After adaptations were made to the intervention 8 patients completed online modules and provided feedback on the content and design. Additionally, patients completed surveys about the acceptability, appropriateness, feasibility, and usability of the intervention.

Next steps

We are currently in the process of adapting the intervention to address the feedback that we received. The next step is to pilot test the intervention in primary care clinic settings.

Recommended readings

Kamp, K.J., Levy, R.L., Munson, S., & Heitkemper, M.M. (2022). [Impact of COVID-19 on individuals with irritable bowel syndrome and comorbid anxiety and/or depression](#). *Journal of Clinical Gastroenterology*, 56(2): e149-52. doi: 10.1097/MCG.0000000000001515. PMID: PMC8435039.

Kamp, K.J., Yang, P-L., Friedman, E., Lopez, A., Iribarren, S., Barney, P., Munson, S.A., Heitkemper, M.M., & Levy, R.L. (**under review**). Evaluation of a planned comprehensive self-management intervention for irritable bowel syndrome and comorbid anxiety and/or depression: a mixed methods study.