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Abstract

FODMAPs are short-chain carbohydrates that are poorly digested and absorbed by the small intestine. FODMAPs which reach the colon are fermented to short chain fatty acids and gases which can trigger symptoms in patients with irritable bowel syndrome (IBS). Diets low in FODMAPs have been shown to improve IBS symptoms.

More than 2 of 3 IBS patients (IBS-D, M, C) participating in a commercially available, catered low-FODMAP meal plan reported a >100-point decrease in IBS-SSS score post-restriction. Abdominal pain, bloating, and bowel movement satisfaction scores improved by >40% in all IBS subtypes. Patients who obtained all of their meals from the commercial meal service reported greater improvements in IBS-SSS score and quality of life compared to those who did not.

This data supports the effectiveness of the low-FODMAP diet for all IBS subtypes, including IBS-M & IBS-C, and the beneficial impact of a commercially available, low-FODMAP meal plan on clinical outcomes.

Introduction

Fermentable oligo-, di-, monosaccharides, & polyols (FODMAPs) are short-chain carbohydrates that are poorly digested in the small intestine.¹ Consumption of FODMAP rich foods, including a variety of fruits & vegetables (figure 1), has been shown to exacerbate symptoms in patients with irritable bowel syndrome (IBS) including:

- Abdominal Pain
- Bloating
- Decreased Satisfaction of Bowel Movements¹

Diets low in FODMAPs have been shown to improve symptoms in patients with IBS-D.² In contrast, there is very little evidence of benefit in patients with IBS-M or IBS-C.

Adhering to a low-FODMAP diet can be a challenging and costly undertaking. There are now commercially-available, low-FODMAP meal services that can also provide dietetic counseling, which could improve the patient's ability to adhere to the diet and thereby improve outcomes.

The aims of this study were to evaluate the impact of the low-FODMAP diet on outcomes & quality of life (QOL) in all IBS subgroups and whether outcomes differed between those that consumed commercially prepared meals vs. those that prepared their own meals.

Methods and Materials

Adult patients with all subtypes of IBS (Diarrhea, Mixed, or Constipation predominant) were eligible for this study.

Participants underwent a FODMAP elimination diet with the support of a meal procurement service (Modify Health (MH), Atlanta, GA). Participants had the support of a GI dietician during the elimination phase and completed IBS Symptom Severity Score (IBS-SSS) questionnaires before and after their 4-week elimination phase to assess abdominal pain, bloating, bowel movement (BM) satisfaction, & QOL. Participants were classified as a responder if they experienced ≥ 100 -point decrease in IBS-SSS total score post-intervention.

Participants underwent their low-FODMAP interventions and submitted IBS-SSS questionnaires between March 2019 & May 2022.

Figure 1. Examples of high-FODMAP items

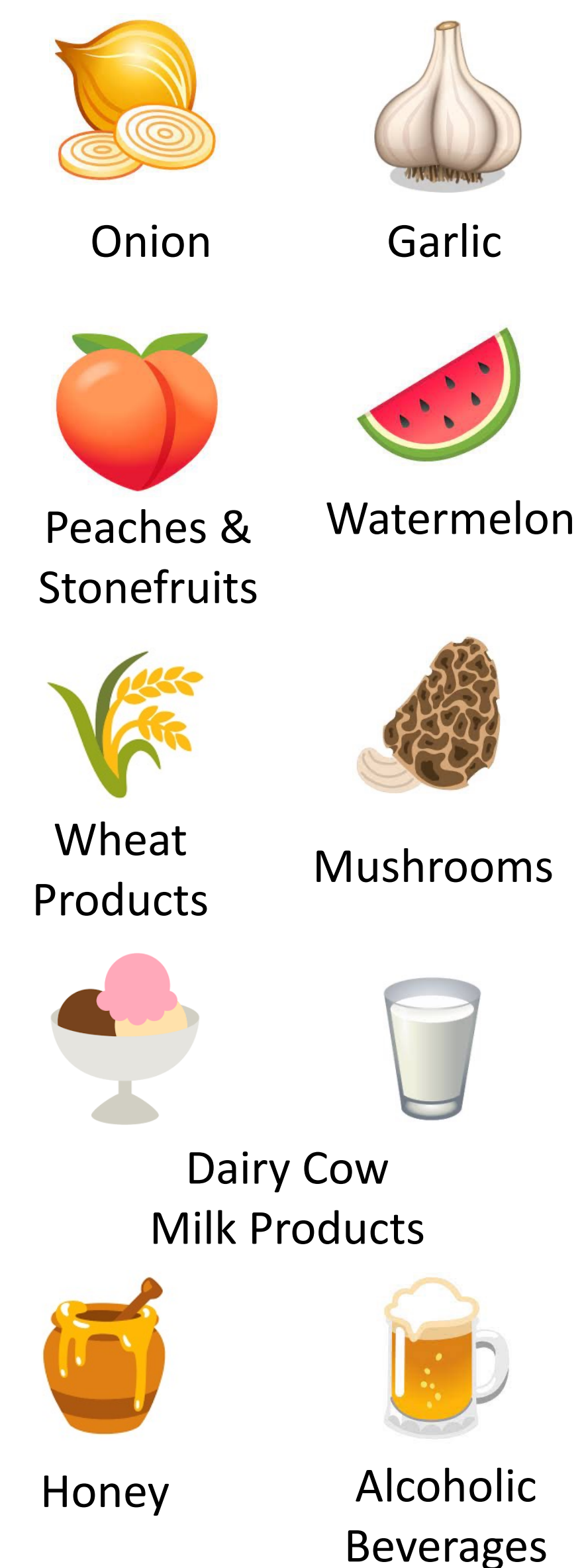
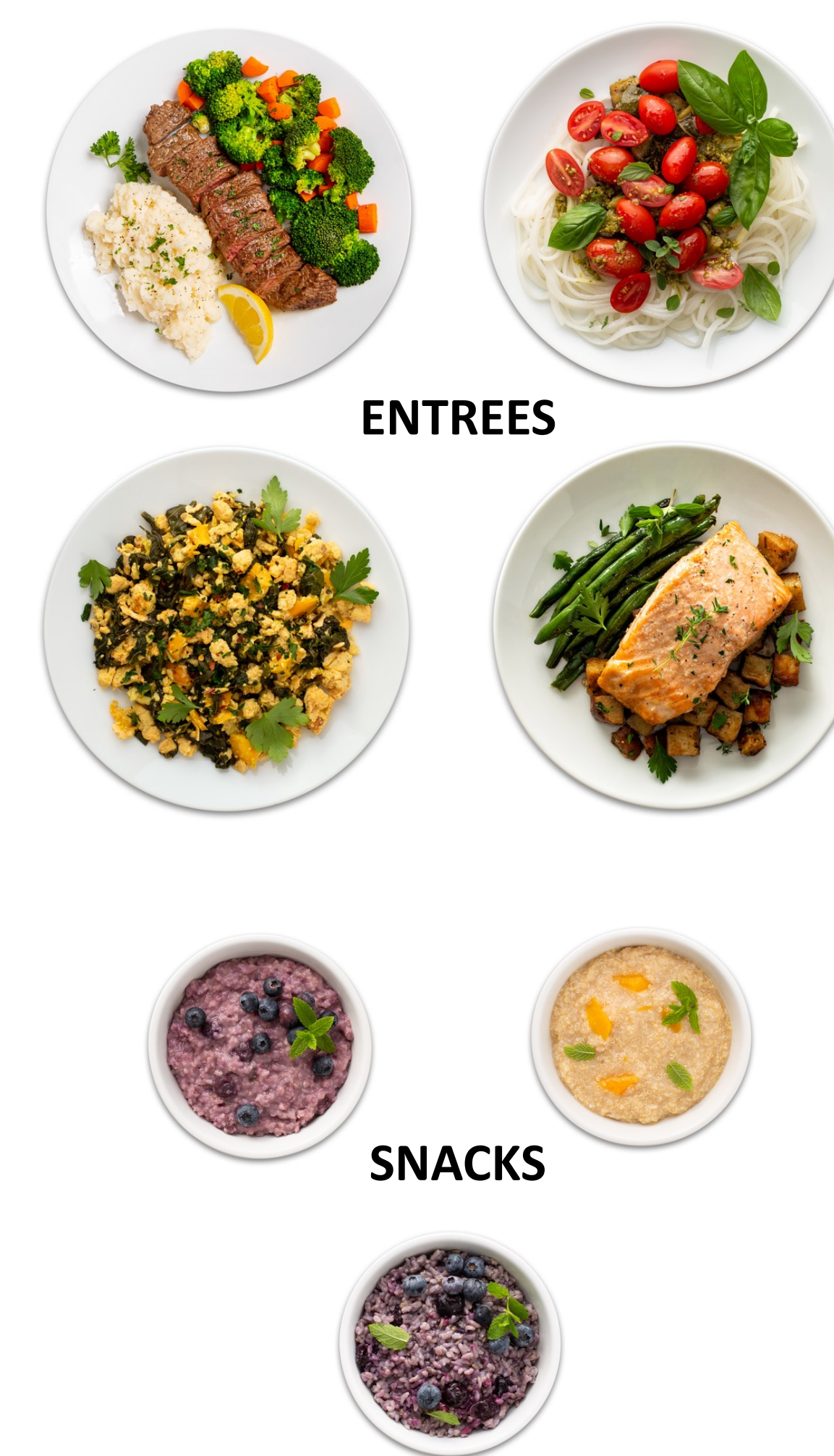


Figure 2. Examples of low-FODMAP meals provided by Modify Health



Results

- 403 IBS patients completed baseline & post-restriction phase IBS-SSS questionnaires
 - Nearly half (48%) had severe IBS (IBS-SSS > 300) scores pre-dietary intervention
 - Completion of the restriction phase led to a reduction of 55% in IBS-SSS total scores for all participants (Figure 3)
 - At least two of three participants for all IBS subtypes were classified as responders to FODMAP restriction (Figure 4)
- There was a reduction of at least 40% for all IBS subtypes in IBS-SSS sub-category scores for abdominal pain, bloating, & BM satisfaction (Figure 5)
- Participants utilizing commercial meal services for “all” meals demonstrated enhanced IBS-SSS score (p:0.059) & QOL (p:0.03) improvement compared to those only using the commercial service for “some” meals (Figure 6)

Figure 3. Mean % reduction in IBS-SSS total score by IBS subtype

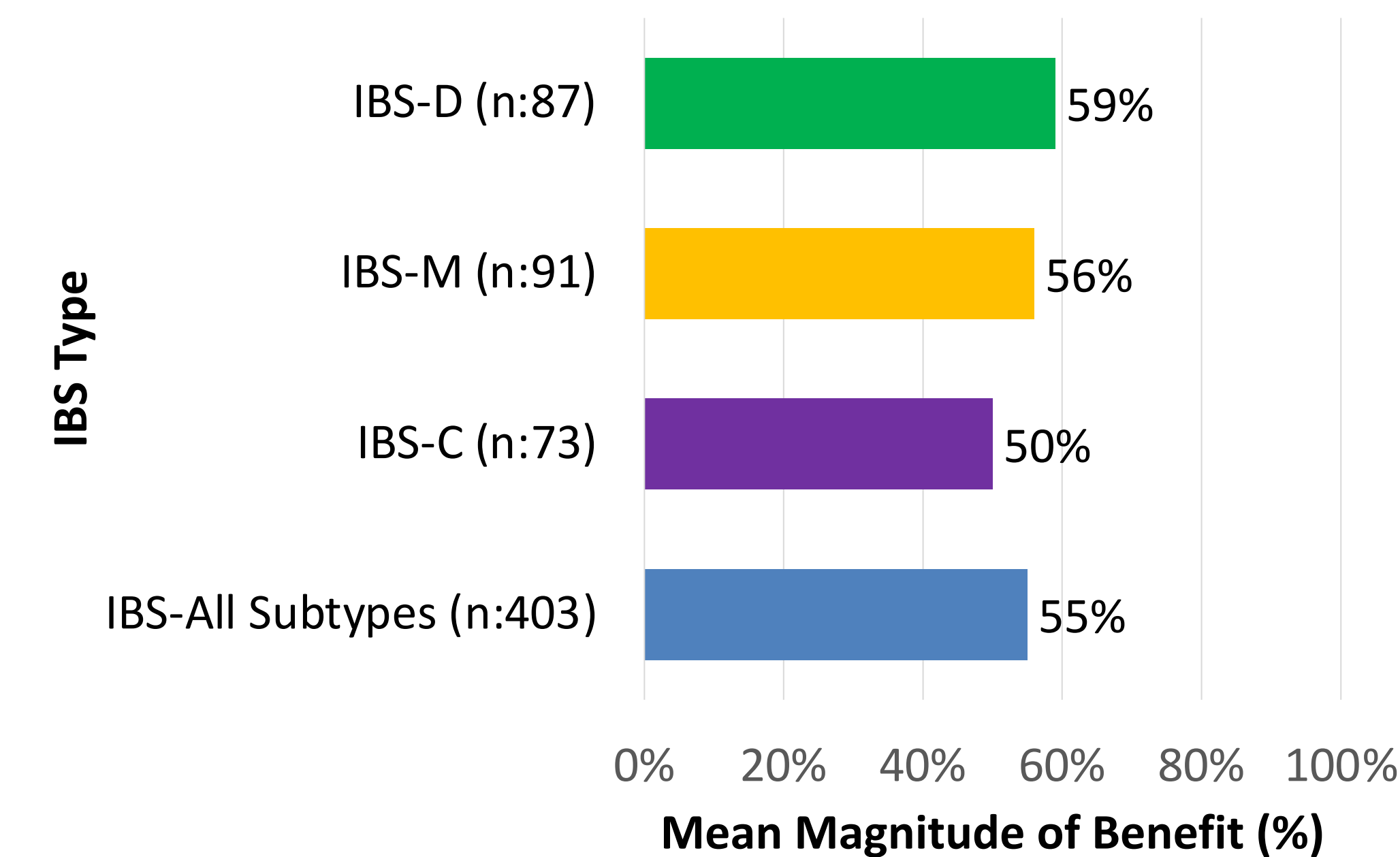
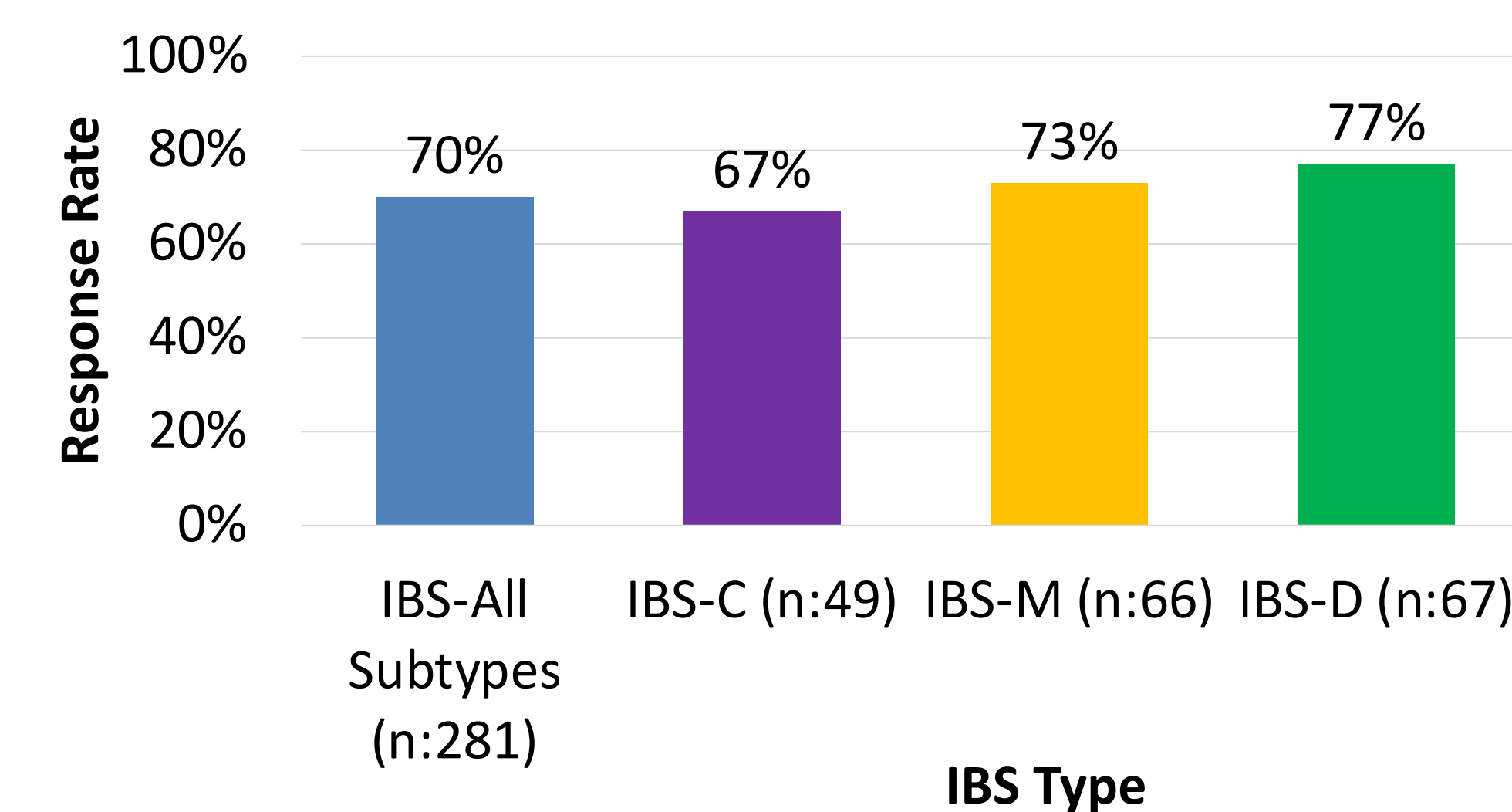


Figure 4. Responder rates (IBS-SSS ≥ 100) by IBS subtype



Results (Cont.)

Figure 5. Improvement in abdominal pain (ABDP), bloating (BLT) and bowel movement satisfaction (BM SAT) scores by IBS subtype

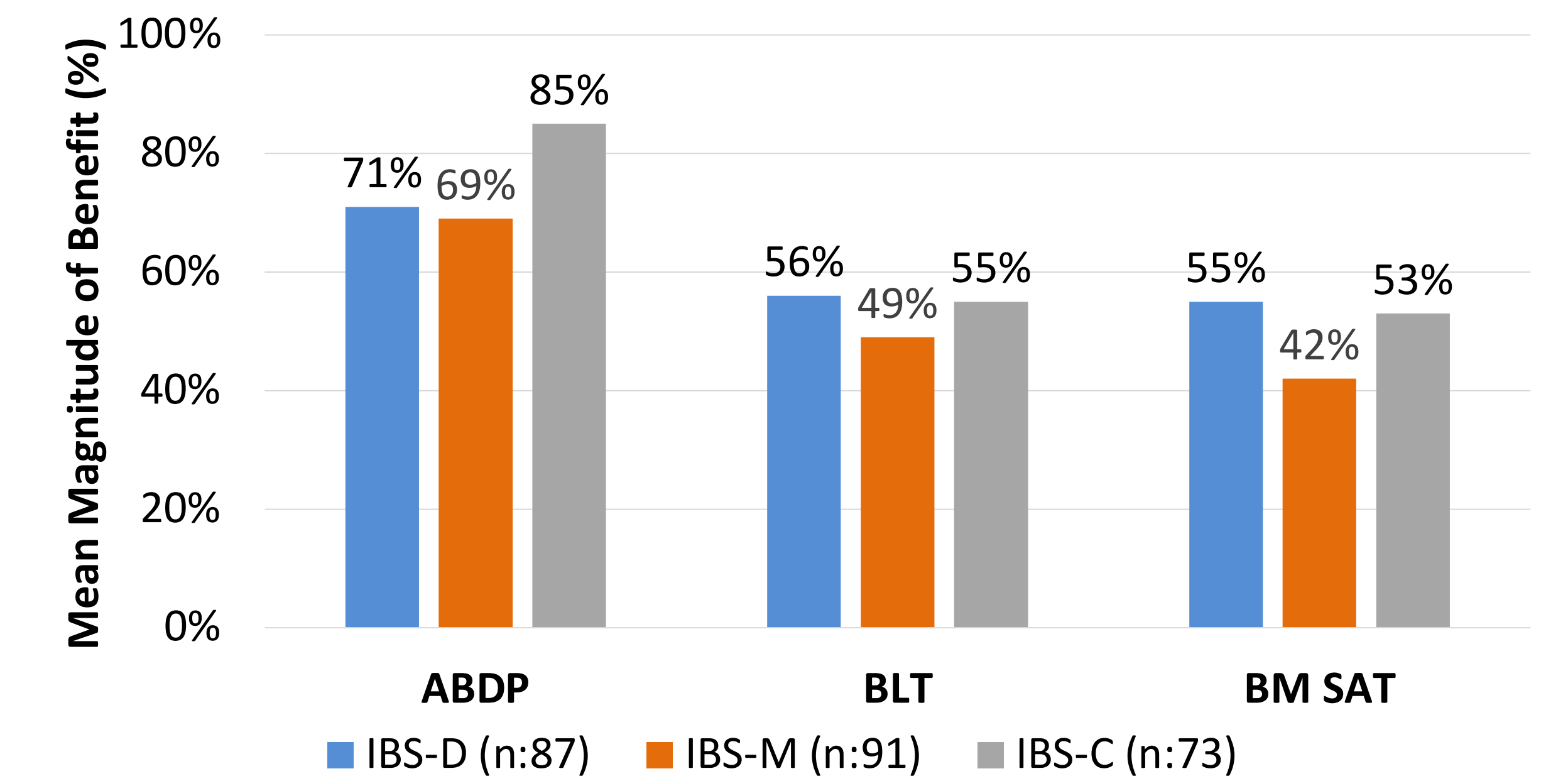
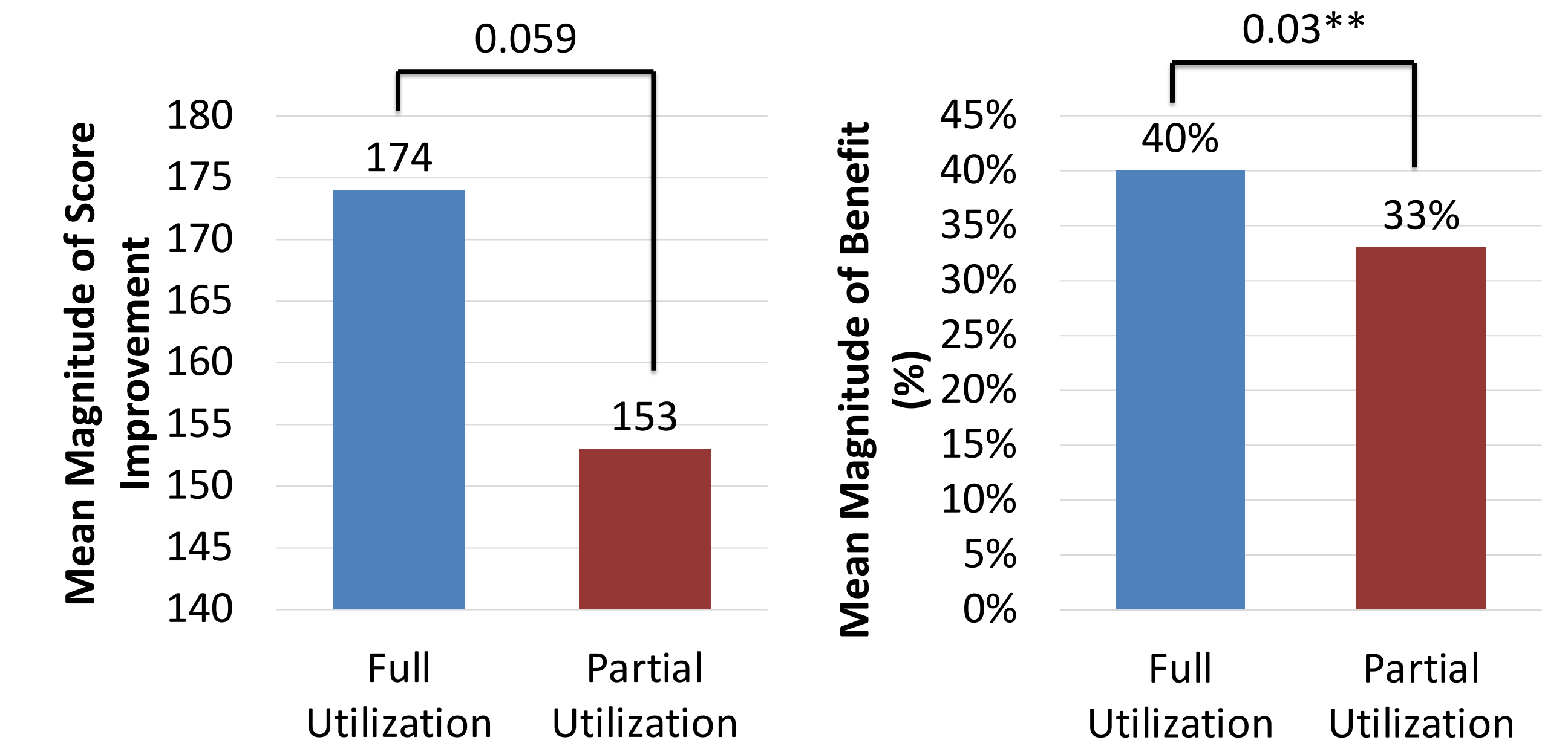


Figure 6. Differences in improvement of IBS-SSS (left) and QOL (right) scores by level of prepared meal service utilization



Discussion/Conclusions

- This data supports the effectiveness of the low-FODMAP diet for all IBS subtypes, including IBS-D, IBS-M, & IBS-C
- Patients obtaining prepared low-FODMAP meals during the entire restriction phase experienced greater benefits (p=0.059, 0.03) compared to those only utilizing prepared meals for some of the restriction phase
- Commercial services specializing in low-FODMAP meal provision can help patients improve adherence and clinical outcomes

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