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Predicting symptom response and quality of life to the low FODMAP diet in irritable bowel syndrome: a 6-month longitudinal study

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The low fermentable oligosaccharide, disaccharide, monosaccharide and polyol (FODMAP) diet is recommended as a first line therapeutic management strategy for irritable bowel syndrome (IBS)[(1)]. The low FODMAP diet is supported by meta-analytical evidence[(2)], and demonstrates acceptability and effectiveness for improving symptoms and quality of life (QoL) in 50-75% of individuals with IBS. However, a subset of individuals (25-50%) do not respond to the diet[(3)]. The identification of individual-level predictors of treatment response across all three phases of the low FODMAP diet is currently lacking. The study aims were to assess psychological predictors of symptom and QoL response to the low FODMAP diet in patients with IBS. Adults with IBS underwent a three-phase low FODMAP diet, guided by individualised dietetic education. Predictor variables included levels of depressive, anxiety, and extraintestinal somatic symptoms, stress, treatment beliefs and expectations, behavioural avoidance, and illness perceptions. Symptom severity and QoL were the main outcomes. Questionnaires assessing psychological predictors, symptoms and QoL were administered at five points: pre-dietitian (week 0), post-dietitian, end of elimination (week 5), end of reintroduction (week 13), and end of personalisation (week 25) phases. Latent class growth analysis was used to identify classes of response trajectories for symptoms. Linear mixed models were used to test the effect of baseline psychological scores on symptoms and QoL over time. Cross lagged panel models determined the directional predictive relationship between psychological predictors and symptom severity. 112 participants (89% F) median age 30 ± 17 years were included. There were three classes of symptom response trajectories, including 'non-improvers' (21.3% of participants) with high initial symptom severity and minimal improvement, 'improvers' (22.5% of participants) with low initial symptom severity and significant improvement, and an 'intermediate' group (56.2% of participants) with moderate initial symptom severity and significant improvement. Higher treatment beliefs predicted a stronger initial symptom response (effect on linear slope $p = 0.036$). Lower gut-specific anxiety, as well as higher levels of personal and treatment control at baseline predicted a stronger reduction in IBS symptom severity and improved QoL from week 0 to week 25. Participants with higher levels of baseline psychological symptoms and negative illness perceptions (i.e., lower emotional representations) predicted a stronger initial and later QoL response (effect on linear ($p = 0.006$) and quadratic ($p = 0.049$) slopes). Increased cyclical time beliefs predicted poorer initial and later QoL response (effect on linear ($p = 0.015$) and quadratic ($p = 0.029$) slopes). Individuals experiencing lower to mid-range symptom severity at baseline had greater improvement with the low FODMAP diet. Lower anxiety, positive illness views and higher treatment beliefs predict better QoL and symptom response. Personalised strategies are crucial for optimising low FODMAP diet effectiveness in IBS.

Keywords: irritable bowel syndrome; predictors; low FODMAP diet

Ethics Declaration

Yes

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References

1. Vasant DH, Paine PA, Black CJ *et al.* (2021). *Gut* **70**, 1214–1240.
2. Black CJ, Staudacher HM & Ford AC (2022) *Gut* **71**, 1117–1126.
3. Wilson B, Cox SR & Whelan K (2021) *Proc Nutr Soc* **80**, 19–8.