

DIFFERENCES IN DIETARY INTAKE PATTERNS CONTRIBUTE TO VARIATIONS IN THE WORLDWIDE PREVALENCE AND SEVERITY OF IRRITABLE BOWEL SYNDROME

Introduction:

Diet undoubtedly plays an important role in irritable bowel syndrome (IBS). Whether regional dietary habits influence the prevalence and severity of IBS remains unclear. We hypothesised that examining food frequency patterns may offer a more meaningful insight into this issue, and investigated whether distinct dietary clusters are associated with variation in the worldwide prevalence and severity of IBS.

Methods:

54,127 participants from 26 countries completed online questionnaires including the Rome IV diagnostic questionnaire and the consumption frequency of 10 food groups, as part of the Rome Foundation Global Epidemiology Study. Correspondence analysis, a data-driven clustering method based on latent class analysis (LCA) of the 10 food groups adjusted for Rome-IV IBS status and country, was employed to assess the separation of countries within these dietary clusters.

Results:

We identified four unique clusters which demonstrated marked geographical and regional differences in dietary patterns worldwide and an association with relative IBS prevalence (Figure 1). There was a significant difference in IBS prevalence between the four dietary pattern groups ($P < 0.001$). Cluster A had the highest IBS prevalence at 5.5% (95%CI: 5.1-5.9) with a diet rich in bread, pasta, fruit and eggs, closely followed by Cluster B with a mean IBS prevalence of 5.0% (95%CI: 4.5 - 5.5) with diet including high consumption of dairy, fruits, and vegetables. Dietary clusters with the highest IBS prevalence (A and B) also had the highest mean IBS symptom severity scores ($P < 0.001$), and were predominantly represented by South American, Latin American, African and Mediterranean countries (Figure 1). These were followed by Cluster C predominantly represented by European and North American countries (USA and Canada), as well as Australia, with a mean IBS prevalence of 3.5% (95% CI: 3.3 - 3.7) and a diet characterised by lower consumption of tofu, rice, and eggs. Cluster D with the lowest IBS prevalence (2.6% (95%CI: 2.3 - 2.9) had a diet characterised by a high consumption of rice, eggs, fish, tofu, and vegetables, and was strongly represented by Asian countries.

Conclusions:

This study demonstrates an association between dietary habits on the global prevalence and severity of IBS. These findings suggest that the approach to dietary management of IBS may need to be customised and adapted for different countries.

Figure 1. Correspondence analysis plot illustrating the variation of dietary patterns worldwide and the association with IBS prevalence.

Correspondence analysis of diet clusters versus countries

