RESEARCH

Attitudes and expectations of gastroenterology outpatients about the importance of diet and possible relationship to their symptoms

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Abstract

Objectives To evaluate gastroenterology outpatients' attitudes to the importance of diet and its relationship to their symptoms, as well as their expectations of dietary advice from health professionals.

Design Prospective clinical audit.

Setting Gastroenterology outpatient department of St George's Healthcare NHS Trust.

Patients Two hundred and twenty-five patients, aged between 18 and 70 years met the inclusion criteria.

Interventions None.

Main outcome measures Participants' responses to a structured questionnaire.

Results Sixty-nine per cent of participants felt their diet played an important role in their condition. Factors significantly associated with a positive dietary attitude included younger age (40.6 years vs 46.0 years, $p<0.01$), regularity of dietary pattern (108 vs 35, $p<0.01$), number of symptoms (4.6 vs 2.5, $p<0.01$), severity of gastrointestinal symptoms (2.3 vs 1.5, $p<0.01$), history of weight loss (34% vs 20.3%, $p<0.05$) and history of dietary advice (71.1% vs 33.3%, $p<0.01$). Sixty-eight per cent (68%) of participants were interested in receiving dietary advice, though only 36% expected to receive it. No differences were found for any comparisons based on average body mass index.

Conclusion The majority of gastroenterology outpatients view diet as playing an important role in their condition, particularly those who have more severe symptoms and those who have received dietary advice. Although a large proportion of patients are interested in receiving dietary advice, few expect to receive it in clinics. Further research is required to explore the reasons why, and to assess the confidence of health professionals in providing nutritional advice.

Introduction

Diet plays an important role in a number of gastroenterological conditions.^{1–3} Recent media campaigns have raised the importance of nutrition in the public mind and patients often relate symptoms to their dietary patterns.⁴ Patients may consequently acquire nutritional information from a variety of sources. Gastroenterologists are ideally placed to provide such advice to patients, but do patients know and expect this?⁵

Although numerous studies have explored the relationship that exists between diet and symptoms, there are few data about patients' attitudes to the importance of diet, and their expectations of receiving dietary advice from health professionals.

We sought to investigate such attitudes and expectations among gastroenterology outpatients by

- Assessing the proportion of patients presenting to different gastroenterology outpatient departments (OPDs) who view diet as playing an important role in their condition, and relating this to the characteristics of patients and their conditions.
- Exploring patients' attitudes to diet as well as the relationship between food avoidance and symptom severity.
- Investigating patients' expectations about dietary advice, including the proportion and characteristics of patients expecting to receive such advice.

Methods

This study took the form of a prospective clinical questionnaire-based audit. The requirement for formal ethical review

was waived by the London-Surrey Borders research ethics committee.

In order to meet the inclusion criteria, patients had to be aged between 18 and 70 years, able to give informed consent and attending one of the gastroenterology clinics of St George's Hospital, London.

Once written consent was obtained, participants completed the study questionnaire (see supplementary online file). Body mass index was also calculated for each participant.

Questionnaire

The study questionnaire, which took 5–10 min to complete, comprised 24 questions, some of which had been adapted from similar questionnaires used in previous studies.^{6,7}

It was designed to determine the following: demographic profile of participants;

- participants' symptoms, including severity, based on a rating scale from 1 to 5;
- participants' dietary attitudes;
- participants' expectations about dietary advice.

Data analysis

The percentage of participants who felt diet played an important role in their condition was calculated and the basis for their dietary attitude explored.

Patient characteristics, including demographic factors and their responses to certain indicator questions (questions 1, 3, 5, 7 and 20 of the questionnaire) were used as a basis for comparing participants who felt diet played an important role and those who did not.

Dietary attitudes were examined and the relationship between food avoidance, gastrointestinal (GI) symptom severity, and body mass index was assessed using the independent sample *t* test.

The proportions of participants who were interested in receiving dietary advice and those who expected to receive dietary advice were calculated. Participants' expectation of dietary advice was subsequently related to demographic factors as well as to whether participants were attending the OPD for the first time. The strength of associations between variables was examined using ORs and the degree of statistical significance for each comparison was established using the χ^2 test for categorical data and the independent sample *t* test for normally distributed numerical data. For comparisons involving more than one group, the strength of statistical significance was determined using one-way analysis of variance.

Results

Recruitment and demographics

Two hundred and forty-two patients were eligible and agreed to take part in the study—43.2% of the clinic population, all of whom received a patient information sheet over the study period. Of these, five participants failed to meet the inclusion criteria, as a result of age or inability to understand the questionnaire. A

further 12 participants, who opted to return the questionnaire by post, failed to do so by the time of data analysis. The results from 225 participants thus formed the basis of the data analysis. The average age for all attendees to the three clinics, including those who did not participate in the study, was 49.2 years (95% CI 32.4 to 66.0), and the gender ratio was 1.0 : 1.1 (M:F).

Attitude to importance of diet in relation to condition

Sixty-nine per cent of participants felt that their diet played an important role in their condition, on average rating the degree of importance as 7.1 (95% CI 6.7 to 7.5) on a scale of 1–10. Participants most commonly cited 'personal experience' as the underlying reason for their dietary attitude. Figure 1 shows the other reasons highlighted by patients as underpinning their dietary attitudes. Forty-seven per cent of participants who responded to this question gave more than one reason.

Table 1 compares the results from participants who viewed diet as playing an important role and those who did not.

Nature of participants' attitudes to diet

Sixty-four per cent of all participants avoided at least one food. Of these, 88% felt the role of diet to be important. In a similar way to participants who felt that their diet played an important role in their condition, those who avoided specific foods tended to have greater symptom severity (2.4 (95% CI 2.2 to 2.6) vs 1.5 (95% CI 1.2 to 1.9), $p < 0.01$). Thirty-five per cent of participants ate more of certain foods and 45% used dietary supplements. Of these, 91% and 70% respectively, felt the role of diet to be important. The majority (57%) of participants rated their dietary knowledge as fair compared with good (38%) or poor (5%). There was no significant difference in nutritional knowledge between participants who regarded diet as important and those who did not.

Figure 1 Reasons cited by participants for their attitude about dietary importance.

Table 1 Perceived importance of diet in relation to clinical condition and potential contributory factors

	Role of diet—important	Role of diet—not important	p Value
Average age (years) (95% CI)	40.6 (38.5–42.7)	46.0 (43.0–49.1)	<0.01
Gender (M:F)	1.0 : 1.4	1.0 : 0.8	0.06
Average BMI (kg/m ²) (95% CI)	26.5 (25.7–27.3)	26.5 (25.4–27.7)	0.96
Average gastrointestinal symptom severity (/5) (95% CI)	2.3 (2.1–2.5)	1.5 (1.1–1.9)	<0.01
Average no. of all symptoms (/15) (95% CI)	4.6 (4.1–5.0)	2.5 (1.9–3.1)	<0.01
Average no. of non-gastrointestinal symptoms (/5) (95% CI)	1.2 (1.0–1.4)	0.9 (0.6–1.1)	0.08
Clinic			
Hepatology (n)	48	33	0.27
General gastroenterology (n)	41	23	0.01
IBD (n)	63	11	<0.01
First visit to gastroenterology OPD (n)	28	16	0.34
History of weight loss (n)	51	13	0.045
Regular dietary pattern (n)	108	35	<0.01
History of previous dietary advice (n)	108	22	<0.01

BM1, body mass index; IBD, inflammatory bowel disease; OPD, outpatient department.

Dietary expectation

The majority of participants (68%) were interested in receiving dietary advice; however, fewer (36%) expected to receive it. Of those who expected dietary advice, patients visiting the OPD for the first time were more likely to expect it (OR=4.55 (2.30–8.96), $p<0.01$). Participants who attended the general gastroenterology clinic were most likely to expect dietary advice, followed by those from the hepatology clinic and then those from the IBD clinic ($p=0.03$).

The majority of participants expected dietitians to provide them with dietary advice ($n=141$), followed by general practitioners ($n=116$) and then gastroenterologists ($n=106$). Forty-nine per cent of participants identified more than one source of dietary advice, while seven participants (3%) did not respond to this question.

Discussion

This study has shown that the majority of patients who present to gastroenterology clinics feel diet plays an important role in their condition. Despite this, few patients expect to receive dietary advice during their consultation.

There appears to be a relationship between food avoidance and symptom severity. A number of features, such as more severe symptoms and a history of dietary advice, are associated with patients who are more likely to view the role diet plays in their condition as important. Characteristics of patients who are more likely to expect dietary advice have also been identified—for example, general gastroenterology clinic and first-time clinic attendance.

The proportion of participants that viewed diet as playing an important role (69%) was similar to that reported in previous studies. Sixty-five per cent of those in a study investigating dietary intake in patients with

ulcerative colitis (UC) reported dietary caution, implying a belief that diet plays an important role.⁸ Similarly, Jowett and colleagues reported that 68% of patients with UC felt diet was relevant to their colitis.⁶ Fieldhouse⁹ highlights patients' beliefs as being a factor which influences the likelihood of dietary change occurring; encouraging a patient already convinced about the importance of diet to adhere to nutritional management measures is likely to be easier than attempting to persuade a patient who does not hold such a view.

Characteristics of participants who viewed diet as important

The highest percentage of participants holding the view that diet plays an important role came from the inflammatory bowel disease (IBD) clinic; those from the hepatology clinic were least likely to hold this view. A number of factors may account for this difference. First, UC and Crohn's disease, which affect the majority of patients presenting to the IBD clinic, are of unknown cause, but with dietary constituents, and the body's response to them, on occasion, implicated as a potential contributory factor.¹⁰ This is in contrast to those presenting conditions to the hepatology clinic, where the aetiology is often known. Second, patients attending the IBD clinic are more likely to have more frequent and severe GI symptoms, again increasing the likelihood of diet being important.

Contrary to Van Dillen and Hiddink's study,⁷ which showed that women and older patients were more likely to be nutritionally aware, we found that participants who viewed diet as playing an important role were on average 5.4 years younger than participants who did not. Although a greater proportion of women in this study viewed diet as important, the gender difference was not statistically significant.

Clinic may have served as a confounding variable in the age discrepancy between the two studies, IBD clinic attendees being younger than those attending other clinics. This relationship, as well as the dissimilarity between our hospital-based study population and Van Dillen and Hiddink's community population, may explain the lack of agreement between the two study findings.⁷

The fact that patients who have received dietary advice are more likely to feel diet plays an important role has been reported among patients with ulcerative colitis.⁶ This finding is noteworthy and points to the potential role healthcare professionals play in behaviour modification.

We found that participants who viewed diet as important, experienced, on average, a greater number and more severe symptoms than those who did not. This finding was similar to the relationship between patients' avoidance of certain foods and their symptom severity. It is possible that patients with more severe symptoms are more motivated to explore dietary strategies. Our finding, previously unreported, that participants with regular dietary patterns are more likely to view diet as important supports this argument, though it may also reflect personality type. Interestingly, a study investigating adherence to a gluten-free diet among patients with coeliac disease reported a contrasting view, with lower levels of adherence found in patients with more severe symptoms.¹¹ This finding raises the possibility that patients with more severe symptoms may have such severe symptoms because of their dietary attitudes and behaviours.

Significant differences were not found for non-gastrointestinal symptoms. This finding implies, albeit indirectly, that having severe gastrointestinal symptoms, and not numerous general symptoms, is more associated with believing that diet plays an important role in relation to symptoms.

Characteristics of patients who expect to receive dietary advice

Statistically significant differences were found for comparisons based on clinic attended and whether or not participants were first time attendees to the OPD. Patients from the IBD clinic were found to be least

likely to expect dietary advice. Such low expectation is surprising, especially as participants from this same group were most likely to view diet as important. It may be that the majority of patients with IBD are being followed up and so either do not see the need for additional nutritional advice, or recognise that it is unlikely to be offered in clinic. Our findings reflect this possibility, as participants who presented to the OPD for the first time were more likely to expect to receive dietary advice. Further, a similar trend was seen for first time attendees to the OPD; with the majority of first time attendees coming from the general gastro clinic and the least number of first time attendees coming from the IBD clinic (table 2).

The discrepancy between patients' attitudes to the importance of diet and their expectation of receiving nutritional advice is of concern. Factors that may be relevant include the documented lack of confidence or interest about nutritional knowledge among doctors. In 1997, a high level of dissatisfaction was reported among general practitioners, about nutrition training both before and after qualification.¹² Similar concerns were aired in 2002 by an intercollegiate working group.¹³ More recently, Harvey and Neild¹⁴ cite the low prioritisation of nutrition by pressured trainees, as a contributor to the reduced interest in nutritional issues among gastroenterologists.

Our study has a number of limitations. First, the study title potentially introduced a volunteer bias that may explain the high proportion of participants who view diet as important. This proportion is not surprising especially given the role diet is known to play in a number of GI conditions. The part diet plays in the aetiology and management of UC has been highlighted as a key research priority by patients.¹⁵ It is very likely that patients with UC are not alone in holding this view.

The modest response rate, coupled with the demographic differences between participants and overall clinic attendees, may reflect a substantial difference between responders and non-responders. While this may constitute a non-response bias, it should be noted that the demographic details for all clinic attendees include patients who would have otherwise been excluded from the study—for example, those over the age of 70. The clinic comparisons used in our study

Table 2 Recruitment characteristics of participants from each of the three clinics

Clinic	All clinics (n=225)	General gastroenterology (n=67)	IBD (n=74)	Hepatology (n=84)	p Value
Average age (years) (95% CI)	42.4 (40.7–44.1)	42.9 (39.8–46.1)	38.3 (35.2–41.4)	45.6 (43.1–48.1)	<0.01
Male:female	1.0 : 1.2	1.0 : 0.9	1.0 : 1.6	1.0 : 1.2	
Average BMI (kg/m ²) (95% CI)	26.5 (25.9–27.2)	26.6 (25.5–27.7)	25.6 (24.4–26.7)	27.3 (26.2–28.4)	0.09
Average GI symptom severity (/5) (95% CI)	2.1 (1.9–2.3)	2.2 (1.9–2.5)	2.7 (2.5–3.0)	1.3 (1.0–1.7)	<0.01
Average number of symptoms (/15) (95% CI)	3.9 (3.5–4.3)	4.2 (3.5–4.9)	5.4 (4.8–6.0)	2.3 (1.8–2.9)	<0.01
Average number of non-GI symptoms (/5) (95% CI)	1.0 (0.8–1.2)	1.0 (0.8–1.3)	1.3 (1.0–1.5)	0.9 (0.6–1.1)	0.13
1st visit to Gastroenterology/hepatology OPD—n (%)	47	26	3	18	<0.01

BMI, body mass index; GI, gastrointestinal; IBD, inflammatory bowel disease; OPD, outpatient department.

are broad. While they have highlighted significant differences between participants presenting to each clinic, they do not represent the differences that would be seen if participants were compared based on specific diagnoses and presenting complaints. Finally, socioeconomic status is a key potential confounding variable which has not been accounted for in this study, but has been shown to influence the level of nutritional knowledge.¹²

In summary, we have shown that:

- The majority of patients who present to gastroenterology clinics view diet as important.
- Few patients expect to receive dietary advice.
- Certain characteristics identify patients who are more likely to view diet as important, as well as those who are more likely to expect dietary advice.
- An association exists between food avoidance and patients' perceived GI symptom severity.

Further studies would need to be done to provide insight into some of the associations described in this study. In particular, the association between food avoidance and perceived GI symptom severity needs to be better characterised.

It is to be hoped that the increase of emphasis on nutrition education at all levels of medical training in recent years, including in the UK, the introduction of nutrition care as a core competency in the foundation programme training curriculum¹⁶ and in the 2010 specialty training curriculum in gastroenterology,¹⁷ will contribute to a better informed medical workforce.

Contributors AA designed the study questionnaire, collected the data, performed statistical analysis of the data and drafted and revised the paper. He is guarantor. PN is the research project supervisor and provided the study title. She revised the study questionnaire, reviewed the statistical analysis and revised the draft paper.

Competing interest None declared.

Ethics approval Study was reviewed by the London-Surrey Borders research ethics committee and deemed not to require formal ethical approval.

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