A survey of patients' attitudes to upper gastrointestinal endoscopy identifies the value of endoscopist–patient interactive factors

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Objective To determine patients' self-reported preferences and expectations for outpatient upper gastrointestinal (UGI) endoscopy, including patients' priorities in obtaining a satisfactory healthcare experience, preprocedure anxiety and its causes, and preferred staff roles.

Design A composite, dedicated endoscopy questionnaire was used. This included demographic information, validated Likert scale anxiety-related questions and a 15-point ranking scale of aspects of care (1=most important to satisfaction; 15=least important).

Setting and patients Unselected patients attending for an elective UGI endoscopy at two separate units were surveyed on randomly identified days.

Results A total of 202 out of 254 patients agreed to participate (79.5%). The values identified as most important to patients included technical skill (2.8) and personal manner of the endoscopist (4.9) and the nurses and support staff (5.8), control of discomfort (5.6) and adequacy of the preprocedure explanation (5.8). The factors considered least important included noise levels (12.5), privacy (10.7) and cleanliness (8.7). Moderate to severe anxiety was recorded in half of the patient cohort, predominantly due to anticipation of pain or the results of the procedure. Most patients preferred the endoscopist to discuss the findings of the endoscopy but expressed no preferences regarding the preprocedure explanation.

Conclusion Patients undergoing UGI endoscopy appear to highly prioritise aspects of care relating to interaction with the endoscopist and the procedure itself. Environmental factors are considered to have much less value. These findings may assist in service redesign around patient-centred care and the development of patient satisfaction surveys in endoscopy.

Introduction

Improving the patient experience is key to driving quality in the NHS.^{1,2} Determining patients' attitudes to their care is essential to understanding the patient experience and offers clinicians the opportunity to perform service redesign that is fundamentally patient centred as well as a benchmark for external comparisons.²

An effective method of determining patients' attitudes involves measuring their preferences and expectations to a specific healthcare pathway. These prospectively identify priorities in the healthcare experience from the patients' perspective in terms of patients' beliefs about what should and what is desirable to occur.³ Addressing patients' preferences and expectations positively influences their opinions of the healthcare they receive, their engagement with doctors and proposed clinical management, and is a measure through which the performance of the clinical service can be assessed.⁴ There is also an established association between meeting patients' expectations of their clinical management with higher levels of patient satisfaction,^{5–8} likelihood of treatment compliance^{9–11} and clinical response.^{12, 13} By comparison, simple patient satisfaction surveys are considered subjective, of a multidimensional nature,¹⁴ with frequently flawed methodology¹⁵ and are ineffective for directing service improvement.^{15–17}

A number of key domains have been identified as being important to patients regarding their healthcare experience and reflect interactive (eg, clinician interpersonal manner, discussion and provision of information, quality and

outcome of care and accessibility) and environmental (eg, noise, privacy and cleanliness) aspects of the healthcare processes.^{18 19}

Upper gastrointestinal (UGI) endoscopy is a commonly performed gastroenterological procedure in the UK. Due to a defined pathway, it is ideal for service redesign that is centred around patients' preferences. However, there is limited published data on patients' attitudes to this healthcare procedure in the UK or on their preferences and expectations within European centres.

This study was undertaken to investigate prospectively the aspects of UGI endoscopy that patients valued most highly in obtaining a satisfactory healthcare experience, reflecting their expectations and preferences, their preprocedure anxiety and its causes, and preferred staff roles.

Methods

Survey design

The survey followed a structured methodology adapted from previous studies.^{14 18}

Subject recruitment and study setting

The survey was undertaken in two endoscopy units: at Queen Alexandra Hospital, Portsmouth, a large acute and elective centre undertaking over 4000 UGI endoscopies per year; and Gosport War Memorial Hospital, Gosport, a smaller elective unit undertaking over 1750 UGI endoscopies per year. Unselected consecutive patients attending for elective UGI on randomly identified days were invited to participate. Inclusion criteria involved all patients over 18 years old undergoing sedated or non-sedated UGI endoscopy following primary care or secondary care referral. Exclusion criteria included patients with severe cognitive impairment.

Following provision of an information sheet, patients agreeing to participate were presented with a self-explanatory questionnaire. Two junior doctors and two clerical officers were available to answer general enquiries although the patients completed the questionnaire independently. Accompanying relatives or friends were permitted to assist patients who were unable to complete the questionnaire due to a language barrier or physical limitations. Patients completed the questionnaire on-site and prior to their procedure.

Survey methods and data collection

The survey took patients approximately 15 min to complete. It consisted of a composite of three questionnaires: (1) a preprocedure questionnaire by Ko *et al*²⁰ relating to demographic characteristics and Likert formatted questions on previous endoscopy experience, anxiety and its causes and preferred staff roles; (2) a 15-item questionnaire by Yacavone *et al*²¹ on aspects of the endoscopy patient pathway that patients ranked in order of importance for a satisfactory experience (table 1). The development of the questionnaires is described elsewhere,^{20 21} with both questionnaires based on the validated Group Health Association of America (GHAA) Consumer Satisfaction Survey modified for surveying patients undergoing endoscopy procedures (mGHAA). The ranking questionnaire by Yacavone *et al* was further modified using survey data from the Mayo Clinic, Rochester, Minnesota, USA, consistent with theoretical construct validity for patients undergoing endoscopy, to include aspects not included in the mGHAA such as control of discomfort, awareness of the patients' previous medical history and the physical characteristics of the department and examination room.

Table 1 Patient responses (n=202) to a ranking questionnaire of individual aspects of care considered important for obtaining satisfaction with the upper gastrointestinal endoscopy experience*

	Ranking of aspects of care important to patient	Median	Mean	SE mean	Rank (1–15)
1	How long I wait to get an endoscopy appointment	7	6.9	0.372	7
2	The waiting time once you had arrived prior to the procedure	9	8.2	0.356	10
3	Staff explanation of reason(s) for delay	12	10.7	0.316	13
4	Personal manner (courtesy, respect, sensitivity, friendliness) of the person who performs the procedure	4	4.9	0.247	2
5	The technical skills (thoroughness, carefulness, competence) of the person who performs the procedure	2	2.8	0.173	1
6	The personal manner (courtesy, respect, sensitivity, friendliness) of the nurses and support staff	5	5.8	0.25	4
7	Adequacy of explanation of the procedure—all my questions answered	5	5.8	0.249	4
8	Questions answered in a way I could understand	6	6.8	0.269	6
9	Adequacy of control of discomfort during procedure	5	5.6	0.251	3
10	Physician discussion with my primary doctor prior to the procedure	9	8.9	0.295	12
11	Appearance/cleanliness of the examination room	9	8.7	0.286	11
12	Physician and nurse knowledge of my medical history	7.5	7.8	0.28	9
13	Noise level in the examination room	14	12.5	0.25	15
14	Amount of privacy in the examination room	11	10.7	0.274	13
15	Physician discussion with me and/or my family following the procedure	8	7.7	0.311	8

*Adapted from Yacavone *et al*.²¹ The results are reported as median, mean and SE of the mean. Rank reflects the mean value (1= high; 15= low importance).

The third survey component consisted of open questions relating to three aspects of the patients' visit that they considered most important from their individual perspective. This was a non-validated method but it was undertaken to assess the applicability of the first two parts of the questionnaire to the local population. The patients' responses to the open questions were reviewed by two blinded gastroenterologists. Each reviewer independently and subjectively assigned the ranking questionnaire response that was felt to most closely describe each open questionnaire answer. Duplicate responses were excluded. The frequencies of each assigned ranking questionnaire response were compared.

A preliminary analysis of the questionnaire of 30 patients was undertaken to review its design for acceptability and appropriateness to the patient cohort and for interpretability of the results. The reproducibility of the questionnaire locally was reviewed by comparing responses from the two sites. No significant changes to the questionnaire were required after review.

The influence of undergoing the UGI endoscopy procedure on patients' responses to the questionnaire was investigated through comparison of the results: (1) following stratification of patients for previous endoscopy history and (2) in 30 patients' pre- and postprocedure.

All information was collected anonymously to facilitate open and honest patients' responses.

Statistical analysis

Formal statistical advice was taken. Reviewing previous studies suggested that a cohort of 200 patients would be required. Data entry and statistical analysis was undertaken using Microsoft Excel and SPSS version 18. In view of the non-parametric nature of the results, these were reported as mean, median and SE of the mean.

Results

Patient demographics

Between February and September 2010, a total of 254 patients were invited to participate of whom 202 (79.5%) agreed; 149/202 (73.8%) were from Gosport War Memorial Hospital and 53/202 (26.2%) were from Queen Alexandra Hospital. The common reason for declining related to the time required to complete the questionnaire.

Of the 202 patients, 111 (55%) were male and 91 (45%) were female, with a mean age of 58 years (range 19–95 years). Educational status of the respondents included 20/191 (10.5%) patients who left school before taking the General Certificate of Secondary Education (GCSE) or O level examinations, 115/191 (60.2%) who left school after completing the GCSE or O level examinations, 30/191 (15.7%) who completed A level examinations and 26/191 (13.6%) who were university graduates; there were 11 non-respondents.

Waiting times for the procedure was less than 4 weeks in 152/174 respondents (87.4%), 4–8 weeks in 15/174 (8.6%) and more than 8 weeks in 7/174 (2.3%)

patients. A total of 63/199 patients (31.7%) reported a chronic pain condition requiring regular analgesia. Of the patient cohort, 97/202 (48%) patients had previously undergone an UGI endoscopy.

Preprocedure ranking questionnaire

The results of the ranking questionnaire are shown in table 1. The aspects of the patient experience that patients considered most important were technical skill (figure 1) and personal manner (figure 2) of the endoscopist, personal manner of the nursing/support staff, adequacy of explanation of the procedure and adequacy of control of discomfort of the procedure. The factors considered least important to the patients were levels of privacy (figure 3) and noise (figure 4) in the examination room, staff explanation for delays, cleanliness of the examination room, waiting time prior to the examination and liaison between endoscopist and primary care doctor.

Ranking questionnaire following patient stratification

Similar findings were noted for the most and least important aspects of care when the patient cohort was stratified as to whether they had previous experience of endoscopy or not. Comparisons of patients' responses to the ranking questionnaire undertaken pre- and postprocedure (n=30) demonstrated similar findings, with the same five aspects of care considered most important, although 'answering questions understandably' was ranked equal to 'adequacy of preprocedure explanation' as the fifth most important aspect of care in the post-procedure. The least important five aspects of care were consistent throughout.

Similarly, stratification of respondents for the two sites demonstrated good reproducibility with the same

Figure 1 Frequencies of ranked values (1=high; 15=low importance) of technical skill of the endoscopist.

Figure 2 Frequencies of ranked values (1=high; 15=low importance) of personal manner of the endoscopist.

Figure 4 Frequencies of ranked values (1=high; 15=low importance) for noise level in the examination room.

Figure 3 Frequencies of ranked values (1=high; 15=low importance) for privacy in the examination room.

five aspects considered most important (with ‘answering questions understandably’ considered equal to the fifth most important aspect of care at Queen Alexandra Hospital).

Likert scale questionnaire

With respect to patient anxiety prior to the procedure, 97/198 (48%) patients reported none or only mild

anxiety, 73/198 (36.1%) reported moderate anxiety, 28/198 (13.9%) reported severe or very severe anxiety and 4 patients did not respond. Regarding the source of their anxiety, the most frequent responses were the anticipation of pain and the nature of the results, 102/177 (57.6%) and 45/177 (25.4%), respectively; 7/177 (3.5%) patients selected potential complications and 23/177 (13.0%) could not specify.

When asked who they would prefer to explain the procedure to them, 42/180 (23.3%) chose the endoscopist, 13/180 (7.2%) selected one of the nurses and 125/180 (69.4%) said they did not mind who explained the procedure to them. However, when asked who they would prefer to explain the results to them, the number of patients expressing a preference increased to 104 patients, with 100/177 (56.5%) choosing the endoscopist and only 4/177 (2.3%) selecting one of the nurses. Seventy-three out of 177 (41.2%) patients said they did not mind who explained the results to them.

Open questionnaire

There were a total of 263 responses from 111 patients to the open questionnaire identifying aspects of their visit that were considered as most important. Of this number, 14 were deemed to be duplicates and were excluded. The frequencies of the values of the remaining 249 responses demonstrated similar findings between the two assessors (table 2).

The five most frequently identified aspects were: (1) technical skill of the endoscopist; (2) personal manner of the staff (it was not uniformly clear if this related to nursing/support staff or endoscopist); (3) discussion

with the patient following the procedure; (4) waiting time once in the department and (5) adequacy of control of discomfort. The least frequently identified aspects were: (1) physician discussion with the primary doctor prior to the procedure; (2) staff explanation of reason(s) for delay; (3) amount of privacy in the examination room; (4) noise level in the examination room and (5) physicians' and nurses' knowledge of the patient's medical history.

Discussion

The 202 respondents from the current study reflected a balanced distribution of patients across age, gender and educational level (demographic factors have been shown to influence responses,^{14 22 23} although principally satisfaction levels as opposed to the importance placed on specific aspects of care). The results of the ranking questionnaire suggested that patients considered 'interactive' factors with staff, for example, with the endoscopist and nurses/support staff, to be of greatest importance to achieving a satisfactory experience. There was clearly expressed prioritisation for receiving a clear explanation of the procedure coupled with a friendly, professional personal manner displayed by both the endoscopist and the nursing/support staff. In particular, patients focused on the procedure itself, prioritising adequate control of their discomfort and the technical skill of the endoscopist. By comparison, "environmental factors" were consistently attributed with relatively lower values of importance by patients. This included cleanliness of the department, noise levels and privacy of the examination room, in addition

to explanations for delays and communication with the primary care doctor.

The results of the ranking questionnaire are consistent with those of Yacavone *et al* and Ko *et al* from surveys of patients in the USA and Canada who had previously undergone an endoscopic procedure (gastroscopy, colonoscopy or flexible sigmoidoscopy) or were attending for one. In both cases, patients noted the importance of the endoscopist's and nursing staff's personal manner and the endoscopist's technical skill, to their level of satisfaction with their healthcare experience, with lower levels of importance attributed to environmental factors.^{20 21} Scotto *et al* noted associations between interactive factors and patient satisfaction with gastroscopy including the caring nature of the staff and explanation of the results as well as environmental factors including hospital cleanliness and endoscopy area comfort²²; however, the relative importance of these factors was not assessed. Del Río *et al* also used a validated postendoscopy questionnaire based on the GHAA in patients undergoing gastroscopy and/or colonoscopy and identified waiting times for the appointment and explanations of the examination²⁴ as important in determining patient satisfaction.

In the current study, the results are also consistent with national UK surveys of patient experience of inpatient and outpatient care by the Picker Institute Europe, with high levels of satisfaction relating to interactive factors including discussion and manner of medical and other staff demonstrating and correlating with a positive experience, although cleanliness was also noted to be important.^{25 26}

Table 2 Comparison of reviewer analysis of open patient questionnaire responses ('what (three) aspects of your visit were most important to you'; total of 263 responses from 101 patients)

	Ranking value	Reviewer 1*	Reviewer 2*	Mean†	Rank‡
1	How long I wait to get an endoscopy appointment	8	2	5	9
2	The waiting time once you had arrived prior to the procedure	24	28	26	4
3	Staff explanation of reason(s) for delay	1	1	1	14
4	Personal manner (courtesy, respect, sensitivity, friendliness) of the person who performs the procedure	28	8	18	7
5	The technical skills (thoroughness, carefulness, competence) of the person who performs the procedure	52	69	60.5	1
6	The personal manner (courtesy, respect, sensitivity, friendliness) of the nurses and support staff	30	47	38.5	2
7	Adequacy of explanation of the procedure—all my questions answered	19	19	19	6
8	Questions answered in a way I could understand	2	6	4	10
9	Adequacy of control of discomfort during procedure	23	23	23	5
10	Physician discussion with my primary doctor prior to the procedure	0	0	0	15
11	Appearance/cleanliness of the examination room	14	14	14	8
12	Physician and nurse knowledge of my medical history	2	3	2.5	11
13	Noise level in the examination room	0	4	2	12
14	Amount of privacy in the examination room	2	2	2	12
15	Physician discussion with me and/or my family following the procedure	35	27	31	3

*Frequencies of ranking questionnaire values assigned to the patient's open questionnaire responses.

†Mean of reviewer 1 and 2 responses.

‡Ranking of responses by frequency (1=most frequent; 15=least frequent).

In the current study, approximately half of the patient cohort reported moderate to severe anxiety prior to the procedure, predominantly relating to concerns over the control of discomfort and the nature of the results. With respect to staff roles, patients also expressed a preference for discussing the results of the procedure with the endoscopist (although there was less concern regarding discussion of the procedure itself). These findings are consistent with those of the ranking questionnaire, and support the importance patients place on the interaction with the endoscopist and their experience during the procedure.

Patient concerns over discomfort during endoscopic procedures, and the importance of its control, as proposed in the current study is consistent with a number of postprocedure patient surveys of patient satisfaction and the need for sedation.^{20 27 28} The results of the current study contrast with those of Ko *et al*²⁰ who demonstrated moderate to severe anxiety among only 33% of their patient cohort, furthermore there was not a significant association between anxiety levels and patient satisfaction of the endoscopic procedure. By comparison, Campo *et al*²⁹ noted an association between patient anxiety and tolerance of gastroscopy.

The ranking and Likert scale questionnaires used were both based on the validated GHAA score (modified and endorsed by the American Society of Gastrointestinal Endoscopy), with published studies from the USA and Canada, respectively.^{20 21} Their specific modification for patients undergoing endoscopic procedures and the previously published results of studies based on their use suggests adequate content validity for the purposes of the questionnaire used in this study. Further modification of the ranking questionnaire from the mGHAA to incorporate aspects of care including control of discomfort was undertaken by Yacavone *et al* within the context of published and other sources of survey data in order to support construct validity.

The effectiveness of the ranking questionnaire for the local population was assessed for reliability through comparisons of patient responses at two different endoscopy units, and for applicability through comparison of the results of an open questionnaire of the three aspects of care that were considered most important. In addition, comparisons of responses among patients with or without a history of previous endoscopy and before and after the UGI endoscopy were made to assess the influence of undergoing the procedure on patients' preferences and expectations. The findings were noted to be similar to those from the ranking questionnaire throughout the different comparisons with only minor differences noted. The open questionnaire was undertaken second, and therefore may have been subject to an 'ordering effect', and in the absence of validation, conclusions cannot be drawn from its results; however, the similarities to the findings of the ranking questionnaire add further support for the latter's use in the local population.

We chose to use an on-site preprocedure questionnaire in common with Yacavone *et al*. This method can be criticised as producing more favourable responses compared with mail-back questionnaires,³⁰ however in the latter method response rates may be insufficient to exclude response bias required for extrapolation of the results, whereas in the current study approximately 80% of selected patients responded. Random days were chosen for patient surveying to further reduce the selection bias.

The results of this study may have considerable implications for the organisation of elective endoscopy in the UK. This study identified which aspects of care are important from a patient's perspective and therefore should be considered to have the greatest value in service and patient pathway redesign. The ranking questionnaire demonstrates relative preference of interactive factors with low prioritisation of environmental factors, suggesting that the focus of service development should be on staff–patient interaction, provision of information and technically skilled procedures with control of discomfort. Service redesign might therefore focus on expanding the opportunities for endoscopist–patient discussion prior to and after endoscopic procedures and ensuring adequate time and preparation for the procedure. Audits of the patient experience may also include specific questions on the personal manner and communication skills of staff, including endoscopists, providing objective feedback for appraisal or training. The results suggest that patients place a lower value on environmental issues including privacy and noise within the examination room, however, these results do not reflect absolute levels of importance and it is likely that environmental factors are still considered of value to patients.

Our results support the evidence-based and comprehensive UK Endoscopy Global Rating Scale (GRS)³¹ system of service assessment that has played a key role in supporting patient-centred care within endoscopy services. The GRS includes domains of quality and patient experience in the form of 12 patient-centred standards reflecting interactive and environmental factors albeit with equal weighting and originally identified by endoscopy staff as those that patients considered to be most important to their healthcare experience. These include equality, timeliness, choice, privacy and dignity, aftercare and ability to provide feedback. A prospective GRS audit of factors influencing patient experience among 1187 North American patients undergoing colonoscopy³² suggested that control of discomfort was prioritised by patients (and influenced their willingness to return for a repeat procedure). This is consistent with the findings of this study.

From the results of this study, we conclude that aspects of care within the UGI endoscopy pathway valued most by patients relate to those factors involving interaction with staff and in particular between endoscopist and patients. Patients value preprocedure

discussion with a focus on the endoscopist answering questions clearly and projecting a professional and friendly manner in addition to the technical skill of the procedure and the ability to control discomfort. Comparatively, factors relating to the environment of the department, explanations for delay and communication with the primary care doctor were not deemed high priority. Our results may be of value in redesigning services in UGI endoscopy with the aim of developing patient-centred care and in designing postprocedure questionnaires that determine whether patients' preferences and expectations have been met.

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Competing interests None.

Ethical approval The protocol was reviewed by the Portsmouth and South East Hampshire Research Ethics Committee as a service evaluation and subsequently by the Clinical Governance Committee for Portsmouth Hospitals NHS Trust.

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