Maryam et al. Scr Med. 2024 Nov-Dec;55(6):749-55. DOI:10.5937/scriptamed55-51550

ORIGINAL ARTICLE

Factors Affecting Patient Satisfaction During Endoscopic Procedures

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Abstract

Background/Aim: Gastrointestinal endoscopic procedures (GEPs) are widely regarded as the premier method for assessing and treating various digestive diseases. With the rising global prevalence of endoscopic procedures, patients are becoming more discerning in selecting their endoscopists. This study aimed to identify the factors influencing patient satisfaction with endoscopic procedures.

Methods: A cross-sectional study was conducted with 409 participants, out of which 212 responses were included for analysis. Exclusions were made due to contradictory answers or incomplete questionnaires. Demographic data were collected and patient satisfaction was assessed using a questionnaire. The relationship between various factors and patient satisfaction was analysed using Spearman's rank correlation.

Results: The majority of patients (50.9 %) underwent endoscopy, with 59.4 % being males and 40.6 % females. The average age of the participants was 42.34 years. The study found that the most significant factors affecting patient satisfaction were waiting time to get an appointment (15.5 %), waiting time on the day of the procedure (17.0 %) and pain or discomfort during and after the procedure (15.6 %). Additionally, the personal manner of the physician and nurses, as well as comprehensive explanations before and after the procedure, were also significant factors. The study also found that certain aspects of the endoscopic procedure impacted satisfaction differently across gender and age groups. The questionnaire demonstrated strong internal consistency with a Cronbach's alpha value of 0.917.

Conclusion: This study underscores the importance of addressing waiting times, improving communication and managing patient discomfort to enhance satisfaction with endoscopic procedures. The findings provide valuable insights for improving the quality of care in endoscopy units.

Key words: Endoscopy; Endoscopy, digestive system; Patient satisfaction; Patient acceptance of healthcare; Patient participation.

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Citation:
Maryam G, e-Hinna R, Sardar S, Khan J, Isram J, Hassan F. Factors affecting patient satisfaction during endoscopic procedures. Scr Med. 2024 Nov-Dec;55(6):749-55.

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Received: 10 June 2024
Revision received: 30 August 2024
Accepted: 30 August 2024

Introduction

Advancements in technology and innovative techniques have greatly improved the quality of endoscopic procedures[1] including colonoscopy, esophagogastroduodenoscopy (EGD), endoscopic retrograde cholangiopancreatography (ERCP), endoscopic ultrasound (EUS), sigmoidoscopy etc.[2] Gastrointestinal endoscopic procedures (GEPs) are widely regarded as the premier meth-

od for assessing and treating various digestive diseases.[3, 4] With the rising global prevalence of endoscopic procedures, patients are becoming more discerning in selecting their endoscopists. This trend highlights the significance of delivering endoscopic services of the highest calibre and prioritising patient satisfaction[5] due to the intrusive, uncomfortable and at times painful character of these procedures. Also, they are associated with significant patient anxiety, worry and discomfort.[6] Hence, understanding the patient's perspective is vital for enhancing service quality and increasing compliance with screening programs.[7]

The European Society of Gastrointestinal Endoscopy (ESGE) and the American Society for Gastrointestinal Endoscopy (ASGE) recommended the identification of quality indicators, including patient satisfaction.[7] Patient experience and satisfaction are essential aspects of various healthcare quality realms and significant constituents of delivering patient-centred care.[8] More specifically, patient satisfaction is acknowledged as a crucial outcome measure for both the patient and the endoscopy unit. Unfavourable experiences during endoscopic procedures can lead to patient non-adherence to screening and surveillance recommendations. To ensure ongoing improvement, quality measures are implemented to provide continuous monitoring and assessment of the process. The widely utilised modified Group Health Association of America patient satisfaction survey (mGHAA-9) targets critical aspects of the patient journey, such as wait times, staff and physician demeanour, physician proficiency and procedural explanations.[9]

Patient satisfaction not only sets the bar for performance but also amplifies the accountability of physicians and staff, ultimately driving enhancements in quality. Factors substantially associated with patient satisfaction include the courteous demeanour of endoscopists, the respectful conduct of nurses, patients' positive perception of the endoscopists' technical skills, a pleasant physical environment in the endoscopy unit and the ample time physicians spend explaining the procedure.[10]

Limited data is available from our country and the region regarding the quality outcomes of endoscopic procedures. This research aimed to highlight the issues that impact patient satisfaction with GI endoscopy in Pakistan.

Methods

This cross-sectional study, which included 409 patients, was conducted at Pakistan Emirates Military Hospital (PEMH), Rawalpindi from January 2024 to May 2024. The tool used to determine the factors affecting patient satisfaction was the combination of the modified Group Health Association of America-9 survey (mGHAA-9) questionnaire and the satisfaction questionnaire provided by American Gastroenterological Association (AGA) Institute, to broaden the scope of factors examined in assessing patient satisfaction. The patients were asked to evaluate various aspects of their visit, including the waiting time at the office, the personal manner and technical skills of the physician, the personal manner of the support staff, pain associated with the procedure, the adequacy of the explanation about the procedure and their overall rating of the visit. A seven-point Likert scale was employed to rank the level of satisfaction (1 = Excellent, 2 = Very good, 3 = Good, 4 = Neutral, 5 = Fair, 6 = Poor, 7 = Worst). For each question, the participant's response was considered satisfactory if they marked 1, 2 or 3 and unsatisfactory if they marked 5, 6 or 7. Data was collected confidentially, without the presence of the endoscopist. After the interviews, the endoscopist was requested to indicate the specific type of procedure conducted (EUS, ERCP or colonoscopy).

Inclusion criteria were patients over 18 years of age; patients of either gender who underwent endoscopy; patients who were vitally stable for an interview after the procedure. In study were not included patients who were catatonic, had neurosis or were receiving psychotropic medication; pregnant women, patients who were critically ill and exhibited disorientation to time and space.

Data analysis

Data analysis was performed using SPSS software. For continuous variables, means and standard deviations were calculated whereas for categorical variables, frequencies and percentages were computed to summarise the distribution. The Chi-square test was employed to evaluate the statistical significance of differences in the proportions of categorical variables between two groups. Spearman's rank correlation analysis was used to assess the statistical significance of the associations between patient rankings for pairs of items. This analysis was conducted to identify possible areas of patient satisfaction with

different features of the endoscopic procedures. A p-value of 0.05 or less was considered statistically significant. Cronbach's alpha coefficient was used to assess the questionnaire's internal consistency and reliability. The reliability of the questionnaire was directly related to the number of items it contains. For questionnaires with more than ten items, a Cronbach's alpha value of 0.7 or higher was deemed acceptable, while for scales with fewer than ten items, a value greater than 0.5 was considered acceptable.

Results

Out of the 409 participants, only 212 responses were included in the analysis. The rest were excluded due to contradictory answers or incomplete questionnaires. Of the respondents, 126 (59.4 %) were males and 86 (40.6 %) were females, with an average age of 42.34 ± 13.76 years. Most respondents (50.9 %) underwent endoscopy, 29.2 % had colonoscopy, 14.2 % underwent ERCP and 5.7 % had EUS. Additionally, 91 % of the patients were willing to answer questions. The attributes of the participants are shown in Table 1.

Table 2 shows the percentage of unsatisfactory responses by patients during their endoscopic procedures.

In Table 3, some differences in satisfaction levels between genders and age groups, with certain aspects of the endoscopic procedure impacting satisfaction differently across these demographics are highlighted. The relationship between each pair of items, based on patient rankings, was evaluated using Spearman's rank correlation (Table 4). Table 5 suggests that the combination of ques-

Table 1: Demographic attributes of participants (n = 212)

Parameters	N	%
Age (years) (Mean ± SD) **42.34 ± 13.76**		
Age groups (years)		
18-30	57	26.9
31-45	73	34.4
46-60	61	28.8
> 60	21	9.9
Gender		
Male	126	59.4
Female	86	40.6
Prior endoscopic experience		
Yes	106	50.0
No	106	50.0
Procedures performed		
Endoscopy	108	50.9
Colonoscopy	62	29.2
ERCP	30	14.2
EUS	12	5.7
Willingness to answer questions		
Yes	193	91.0
No	17	8.0

ERCP: Endoscopic retrograde cholangiopancreatography; EUS: Endoscopic ultrasound;

Table 2: Factors wherein patients showed dissatisfaction (n = 212)

Question	N	%
Waiting time to get an appointment	33	15.5
Waiting time on the day of the procedure	36	17.0
The personal manner of the physician	13	6.1
Conduct of nurses and other support personnel	27	12.7
Technical skills of physician	27	12.7
Comprehensive explanation before the procedure	30	14.2
Pain or discomfort during the procedure	33	15.6
Pain or discomfort after the procedure	33	15.6
Comprehensive and useful explanation after the procedure	30	14.2
All queries were answered	33	15.5
Overall rating of the visit	38	17.9

Table 3: Unsatisfactory responses of patients on the basis of gender and age group (n = 212)

Questions	Gender			Age group (years)				
	M	F	p-value	18-30	31-45	46-60	> 60	p-value
Waiting time to get an appointment	18	15	0.650	8	6	15	4	0.106
Waiting time on the day of the procedure	19	17	0.473	7	6	18	5	0.044
Personal manner of the physician	6	7	0.046	2	3	6	2	0.630
Conduct of nurses and other support personnel	14	13	0.347	6	7	13	1	0.033
Technical skills of physician	19	8	0.430	8	7	10	2	0.228

Comprehensive explanation prior to the procedure	18	12	0.895	6	10	11	3	0.484
Pain or discomfort during the procedure	20	13	0.860	13	7	10	3	0.050
Pain or discomfort after the procedure	15	18	0.520	9	8	14	2	0.153
Comprehensive and useful explanation after procedure	19	11	0.670	11	2	15	2	0.005
All queries were answered	19	14	0.584	10	8	12	3	0.380
Overall rating of the visit	24	14	0.287	12	10	13	3	0.027

M: male; F: female; Values represent number of patients that were dissatisfied;

Table 4: Spearman's correlation matrix for patient satisfaction factors in endoscopic procedures

	Waiting time to schedule an appointment	Waiting time on the day of the procedure	Physician manner	Staff manner	Physician skills	Explanation before procedure	Pain/ discomfort during the procedure	Pain/ discomfort after the procedure	Explanation after procedure	Queries were answered	Overall rating
Waiting time to get an appointment	1.000	0.469	0.626	0.529	0.458	0.563	0.366	0.314	0.513	0.455	0.558
Waiting time on the day of the procedure		1.000	0.442	0.448	0.550	0.408	0.300	0.302	0.437	0.357	0.430
Physician's manner			1.000	0.617	0.573	0.564	0.425	0.309	0.533	0.585	0.590
Staff's manner				1.000	0.681	0.673	0.475	0.370	0.574	0.642	0.676
Physician's skills					1.000	0.640	0.420	0.410	0.500	0.552	0.651
Explanation before procedure						1.000	0.505	0.451	0.584	0.576	0.658
Pain/ discomfort during the procedure							1.000	0.631	0.540	0.472	0.458
Pain/ discomfort after procedure								1.000	0.542	0.428	0.389
Explanation after procedure									1.000	0.694	0.661
Queries were answered										1.000	0.695
Overall rating											1.000

Table 5: Reliability statistics for the questionnaire (α: 0.917; n: 212)

Number of items	Internal consistency	Variance	Mean score
11	0.917	139.06	31.45

tionnaires used in the study was an accurate technique for gauging patient satisfaction with endoscopic procedures, as it exhibits strong internal consistency, indicated by a Cronbach's alpha value of 0.917 (Table 5).

Discussion

Gastrointestinal endoscopic procedure (GEPs) is frequently performed, with an estimated 35 % likelihood of undergoing the procedure at some point in one's lifetime.[11] It is an integrally distressing and painful procedure, often causing abdominal pain, cramping and bloating during colonoscopy, as well as gagging, retching and choking during EGD.[12] Therefore, patients experience anxiety before procedure. In a Romanian study, the factors that affected patients' satisfaction were comprised of insufficient explanations before the procedure or in response to queries, discomfort or pain experienced during colonoscopies or EUS examinations, subpar comfort or privacy in the recovery room, and the wait time before the procedure.[13] Similarly, a study conducted in Pakistan concluded that patients expressed lower satisfaction levels regarding the waiting time for appointment scheduling and on the day of the procedure.[14] Yang and his research team discovered that patients undergoing colonoscopy frequently experience high levels of anxiety, particularly among women and individuals with a history of functional abdominal pain, lower educational attainment and low socioeconomic status.[12] Hence, patients' satisfaction is a critical factor in achieving quality in healthcare services and impacted by a diverse array of social, technical and professional factors that involve both healthcare providers and patients.[15]

In this study, the average age of patients was 42.34 ± 13.76 years. Comparable findings were reported by Sukartini et al[6] and Qureshi et al[10] with average ages of 48 and 45 years, respectively. In contrast, Yoon et al found an average age of 53.6 years[16] while Ko et al concluded a mean age of 55 years.[17]

Since various healthcare systems can differ in the aspects that patients deem important, it is imperative to identify and analyse areas of dissatisfaction specific to the local patient population. Subsequently, corrective measures should be implemented to drive improvement. The current study indicated that patient dissatisfaction was most prevalent regarding the waiting times, both for securing an appointment (15.5 %) and on the day of the procedure (17.0 %). Additionally, dissatisfaction was notable in areas such as the personal manner of physicians (6.1 %) and support staff (12.7 %), technical skills of physicians (12.7 %) and comprehensive explanations provided both before (14.2 %) and after (14.2 %) the procedure. Pain or discomfort during (15.6 %) and after (15.6 %) the procedure also contributed to dissatisfaction, as did the thoroughness in answering patient queries (15.5 %) and the overall rating of the visit (17.9 %). In a study conducted in Spain, most of the negative responses were associated with the waiting time for appointments (9.3 %) and the explanation of the procedure (3.9 %).[18] According to Chan and his colleagues' research, more than half of the participants (53.2 %) expressed dissatisfaction with the waiting time for appointments, while nearly one-third (29.6 %) were unhappy with the waiting time on the day of the procedure.[19]

Similarly, Ko et al reported that higher levels of pain/discomfort were linked to lower satisfaction levels. Fifty-four percent of patients were followed up, showing that while initially satisfied, their satisfaction decreased over time compared to those surveyed shortly after the procedure and they remembered feeling more pain.[17] A study by Gallaher and Parisinos highlighted challenges in the appointment scheduling process. Nineteen percent of respondents experienced delays of more than 30 minutes past their scheduled appointment time, with 8 % waiting over an hour. Additionally, 21 % did not receive any instructions on what to do if they needed advice after their procedure.[20] Burtea, along with his researchers, found a significant difference ($p < 0.0001$) in the proportion of pleased and displeased individuals who experienced pain or discomfort after the procedure. Their study revealed that approximately 78 (14.1 %) patients reported pain and discomfort, primarily associated with colonoscopies and EUS examinations.[13]

The present study found that parameters like gender and age were not associated with satisfaction and dissatisfaction scores. Except, the waiting time on the day of the procedure ($p = 0.044$), the conduct of nurses and other staff members ($p = 0.033$), pain/discomfort during the procedure ($p = 0.05$) and adequate explanation after the procedure ($p = 0.005$) and age groups are statistically significant. Similarly, the conduct of doctors ($p = 0.046$) and gender were statistically significant ($p = 0.021$). Yoon and his colleagues observed that being female and a nonsmoker were linked to lower satisfaction among patients undergoing gastrointestinal endoscopy. For them, this could be because women feel pain more easily than men and their brains react differently to body and stomach pain.[16]

Limitations

This study has certain limitations. Firstly, it is a single-centre study based on responses from a limited number of participants, which may not represent the broader population. Additionally, the study's demographic homogeneity could limit the generalisability of the results to diverse populations with different socio-economic and cultural backgrounds. Secondly, different endoscopic procedures (eg colonoscopy, ERCP, EUS) have unique aspects that might influence patient satisfaction differently. The aggregated analysis may obscure procedure-specific satisfaction drivers. Thirdly, the timing of when the survey was administered (eg immediately after the procedure versus a few days later) could influence patients' responses, as their perceptions and experiences might change over time.

Conclusion

Study highlights key areas for improvement to enhance patient satisfaction in endoscopic procedures. Addressing waiting times, improving the personal manner of healthcare providers, ensuring comprehensive pre- and post-procedure explanations and managing pain effectively are critical steps. Understanding demographic variations in satisfaction can further guide personalised interventions. Enhanced patient satisfaction not only improves the pa-

tient experience but also promotes adherence to screening programs, ultimately contributing to better healthcare outcomes.

Ethics

The authors would like to express their sincere gratitude to Ms Um E Habiba for her technical assistance in drafting the manuscript and her valuable contribution to the statistical analysis and data interpretation.

Acknowledgement

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Conflicts of interest

The authors declare that there is no conflict of interest.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Data access

The data that support the findings of this study are available from the corresponding author upon reasonable individual request.

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