

Assessment of the Quality of Outpatient Endoscopic Procedures by Using a Patient Satisfaction Questionnaire

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ABSTRACT: Introduction. Endoscopic procedures represent an important part of daily practice, both for gastroenterologists and nurses, enabling diagnosis and treatment of digestive diseases. An optimal level of quality needs to be obtained for endoscopic procedures to be efficient, which is reflected directly by patient satisfaction. The Gastrointestinal Endoscopy Satisfaction Questionnaire (GESQ) has already been validated in a multicenter trial as an efficient method for measuring patient satisfaction. Aim The aim of our study was to evaluate the quality of endoscopic procedures and patient satisfaction by applying a modified version of the GESQ in an outpatient facility, with or without deep sedation performed under the supervision of an anesthesiologist. Material and methods. Our study included 552 patients undergoing diagnostic and therapeutic upper and lower GI endoscopies, including endoscopic ultrasound procedures (EUS) performed under propofol sedation, from September 2015 to February 2016. Consecutive patients examined during these 6 months received the questionnaire which was handed by the endoscopy nurse two hours after procedure. The GESQ was modified to include different sections for: 1) communication skills with questions regarding the quantity and clarity of the information delivered to the patient before and after the procedures; 2) pain and discomfort related to the examination with an added question about the specific procedure the patient had undergone; 3) staff manners; 4) physician's technical skills; 5) facility organization (waiting time, comfort in the recovery room, good facilities and equipment) and 6) overall satisfaction. The questionnaire did not include personal data, while answers were analyzed in a confidential manner. Results. A total number of 552 patients agreed to answer our questionnaire, 192 (34,7%) underwent gastroscopies, 288 (52,1%) colonoscopies and 72 (13,2%) EUS examinations. Regarding the overall level of satisfaction (assessed on a five-point scale), 476 (86,2%) were very satisfied or satisfied, 69 (12,5%) dissatisfied and the remainder 7 (1,3%) were indifferently. For the communication section 16 (3%) patients were not satisfied with the explanations received before the procedure or with the answers to their questions. Pain and discomfort were mentioned by 29 (5,2%) of the patients, usually related to colonoscopies or EUS examinations. 13 (2,3%) of the patients considered the comfort or intimacy of the recovery room to be poor, and 11 (2%) patients were not satisfied with the waiting time before the procedure. Conclusion. Our modified questionnaire showed good overall patient satisfaction with our endoscopy unit, while also suggesting some areas in need of improvement, such as staff communication skills, better time management and reorganization of the recovery area. Our study demonstrates the importance of such questionnaires in providing feedback information meant to improve standards in endoscopy, including staff skills and organization.

KEYWORDS: Quality assurance, deep sedation, propofol, interventional endoscopy, nursing, patient satisfaction

Introduction

Endoscopic procedures represent an important part of daily practice, for both gastroenterologists and nurses, enabling timely diagnosis and precise treatment of digestive diseases.

Gastrointestinal endoscopy became an important, but also time-consuming diagnostic and therapeutic procedure.

An optimal level of quality needs to be obtained for endoscopic procedures to be efficient, which is reflected directly to patient satisfaction [1].

The Gastrointestinal Endoscopy Satisfaction Questionnaire (GESQ) has already been

validated in a multicenter trial as an efficient method for measuring patient satisfaction [2].

The structured GESQ questionnaire identified four subscales which are considered clinically relevant for endoscopy: team skills and hospital infrastructure, pain and discomfort during and after the procedure, information received before and after endoscopy.

Furthermore, there is an important variability in Europe for the types of sedation from (almost) no sedation to moderate and deep sedation [3].

These includes type of practitioners (gastroenterologists, anesthesiologists, trained nurses, etc.), monitoring and safety (including complication registration), as well as patient satisfaction.

Thus, either propofol or a combination of benzodiazepines (midazolam) and/or short acting opioids (fentanyl) are used for outpatient GI endoscopic procedures performed in an outpatient setting.

Both choices reduce the anxiety and discomfort of patients and considerably enhance the quality of diagnostic procedures and outcome of therapeutic interventions [4,5].

In most of the outpatient endoscopy centers, controlled sedation care with propofol seem to be the preferred option nowadays, due to the shorter action and prompt awakening, with fewer side effects, as well as improved patient satisfaction [6].

Endoscopic procedures are performed after health status screening of the patient, under the supervision of a trained sedation practitioner, by standardized monitoring (pulse oximetry, electrocardiogram and blood pressure measurements) [7].

Nevertheless, endoscopy is still performed with no sedation at all in some centers, due to a lack of trained personnel and adequate infrastructure for outpatient endoscopy procedures, causing lower satisfaction rating as compared to patients that received controlled sedation care [8].

The trend of switching towards propofol sedation should be documented by carefully controlled prospective, randomized trials [9].

Moreover, an acceptance rate for unsedated endoscopy of only around 50% should further stimulate the transition to controlled sedation care with propofol [10].

The aim of our study was to evaluate the quality of endoscopic procedures and patient satisfaction by applying a modified version of the GESQ in an outpatient facility, with or without deep sedation performed under the supervision of an anesthesiologist.

Material and methods

Our study included 552 patients undergoing diagnostic and therapeutic upper and lower GI endoscopies, including endoscopic ultrasound procedures (EUS) performed under propofol sedation in an outpatient facility (Research Center of Gastroenterology and Hepatology Craiova, Romania), between September 2015 to February 2016.

We have also included a control group consisting of the same number of 552 patients undergoing un-sedated diagnostic and therapeutic upper and lower GI endoscopies in a hospital setting (Emergency Clinical County

Hospital Craiova, Romania), including both outpatient and inpatient populations, examined in the same period of time between September 2015 to February 2016.

All patients received the questionnaire which was handed by the endoscopy nurse two hours after procedure.

The GESQ was modified to include different sections for:

1) communication skills with questions regarding the quantity and clarity of the information delivered to the patient before and after the procedures;

2) pain and discomfort related to the examination with an added question about the specific procedure the patient had undergone;

3) staff manners;

4) physician's technical skills;

5) facility organization (waiting time, comfort in the recovery room, good facilities and equipment);

6) overall satisfaction.

The questionnaire did not include personal data, while answers were analyzed in a confidential manner.

Statistical analysis was based on the "N-1" Chi-squared test as recommended by Campbell (2007) [11] and Richardson (2011) [12].

The confidence intervals were calculated according to the recommendations of Altman et al. (2000) [13].

Furthermore, a comparison of proportions calculator has been used based on the Medcalc easy-to-use statistical software (Medcalc Software, Ostend, Belgium).

Results

A total number of 552 patients agreed to answer our questionnaire: 192 (34,7%) underwent gastroscopies, 288 (52,1%) colonoscopies and 72 (13,2%) EUS examinations.

Regarding the overall level of satisfaction (assessed on a five-point scale), 476 (86,2%) were very satisfied or satisfied, 69 (12,5%) dissatisfied and the remainder 7 (1,3%) were indifferent.

For the communication section 16 (3%) patients were not satisfied with the explanations received before the procedure or with the answers to their questions.

Pain and discomfort were mentioned by 29 (5,2%) of the patients, usually related to colonoscopies or EUS examinations.

Concerning environment, 13 (2,3%) of the patients considered the comfort or intimacy of

the recovery room to be poor and 11 (2%) patients were not satisfied with the waiting time before the procedure.

In terms of team skills, 514 (93.1%) patients considered the endoscopy team excellent, 22 (4%) satisfactory and 16 (2.9%) rather poor.

For the control group, a total number of 552 patients agreed to answer our questionnaire: 202 (36,6%) underwent gastroscopies, 285 (51,6%) colonoscopies and 65 (11,8%) EUS examinations.

Regarding the overall level of satisfaction (assessed on a five-point scale), 283 (51,3%) were very satisfied or satisfied, 244 (44,2%) dissatisfied and the remainder 25 (4,5%) were indifferent.

For the communication section 433 (78,4%) were satisfied, 84 (15,2%) were not satisfied, whilst 35 (6.5%) were indifferent with the explanations received before the procedure or with the answers to their questions.

Pain and discomfort were mentioned by 78 (14,1%) of the patients, usually related to colonoscopies or EUS examinations.

Concerning environment, 88 (15,9%) of the patients considered the comfort or intimacy of

the recovery room to be poor and 17 (3,1%) patients were not satisfied with the waiting time before the procedure.

In terms of team skills, 261 (47,2%) patients considered the endoscopy team excellent, 209 (37,9%) satisfactory and 82 (14,9%) rather poor.

Furthermore, the statistical differences between the patients receiving propofol sedation as compared with no-sedation were calculated and displayed in Table 1.

Thus, there were significant differences ($P < 0.0001$) between the percentage of satisfied patients and dissatisfied patients, undergoing sedated versus unsedated procedures, respectively (Fig.1).

Also, pain/discomfort during the procedures were significantly higher ($P < 0.0001$) for patients undergoing unsedated procedures as compared to sedated procedures, respectively (Fig.2).

These factors possibly influenced the perception of patients concerning the endoscopy team skills, with significant differences ($P < 0.0001$) between non-sedated and sedated patients, for excellent, satisfactory and poor skills, respectively (Fig.3).

Table 1. Statistical differences between the percentages of patients receiving propofol sedation as compared with no-sedation

	Sedation	No-sedation	P-value
Total	552 (100%)	552 (100%)	
- Upper GI endoscopy	192 (34.7%)	202 (36.6%)	P=0.5101
- Lower GI endoscopy	288 (52.1%)	285 (51.6%)	P=0.8680
- Endoscopic ultrasound	72 (13.2%)	65 (11.8%)	P=0.4821
Overall satisfaction			
- Satisfied	476 (86.2%)	283 (51.3%)	P<0.0001
- Dissatisfied	69 (12.55)	244 (44.2%)	P<0.0001
- Indifferent	7 (1.3%)	25 (4.5%)	P=0.0015
Communication			
- Satisfied	518 (93.8%)	433 (78.4%)	P<0.0001
- Dissatisfied	16 (3%)	84 (15.2%)	P<0.0001
- Indifferent	28 (5.1%)	35 (6.3%)	P=0.3901
Procedure			
- Long waiting time	11 (2%)	17 (3.1%)	P=0.2466
- Pain / discomfort	29 (5.2%)	78 (14.1%)	P<0.0001
- Long recovery	35 (6.3%)	28 (5.1%)	P=0.3901
Environment			
- Poor comfort/intimacy	13 (2.3%)	88 (15.9%)	P<0.0001
- Poor hygiene	17 (3.1%)	32 (5.8%)	P=0.0297
Team skills			
- Excellent	514 (93.1%)	261 (47.2%)	P<0.0001
- Satisfactory	22 (4%)	209 (37.9%)	P<0.0001
- Poor	16 (2.9%)	82 (14.9%)	P<0.0001

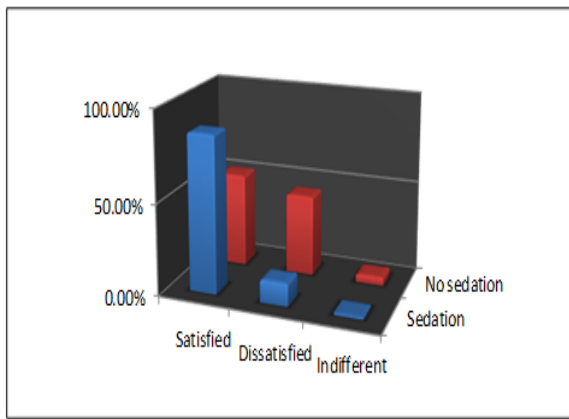


Fig.1. Percentages of overall satisfaction for sedated and unsedated patients showing statistically significant differences for satisfied and dissatisfied patients

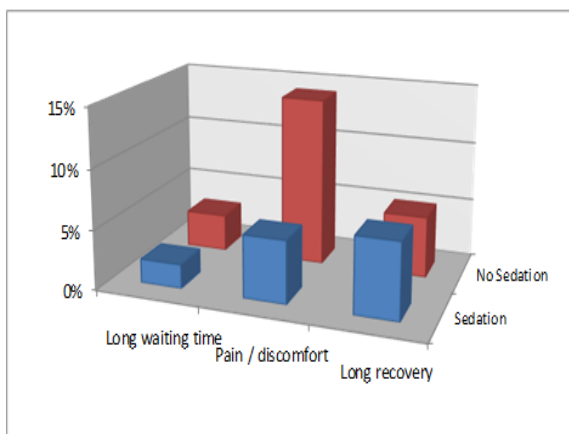


Fig.2. Percentages of pain/discomfort for sedated and unsedated patients showing statistically significant differences

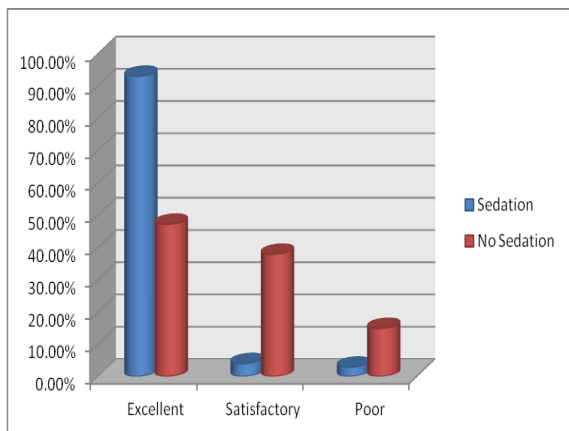


Fig.3. Percentages of patient perception for endoscopy team skills for sedated and unsedated patients showing statistically significant differences for excellent, satisfactory and poor skills

Discussion

There is considerable variation in the field of endoscopy, hence the quality assurance procedures are gaining more significance in the eyes of patients, endoscopists and health care providers [14].

Patient satisfaction questionnaires are a helpful method for detecting opportunities to improve quality based on patient opinion.

Assessing patient experiences is thus helpful in identifying areas that require improvement such as the proper delivery of pre-and postprocedural information.

Patient satisfaction related to endoscopy procedures is imperative for quality assurance and it may be influenced by various factors as patient characteristics, endoscopists' technique and procedural or organizational features [15].

Numerous societies suggested sedation as a quality indicator for colonoscopy, while the British Society for Gastroenterology and Canadian Association of Gastroenterology associated patient comfort as a supplementary performance indicator [16,17,18,19].

A wide range of well-validated patient comfort scales (varying from generic to colonoscopy specific) are available [20,21,22,23,24,25].

One of the most useful tool is the Nurse-Assessed Patient Comfort Score (NAPCOMS) which was endorsed in the United Kingdom and Canada, being designed in endoscopy units employing minimal to moderate sedation [26].

It records the intensity, frequency, and duration of pain episodes, but it also records the level of sedation and perceived global comfort.

In our study, sedation seemed to play a significant role as a predictor for satisfaction, endoscopy with sedation being well known to reduce anxiety and pain [27].

On the other hand, patients who are committed to cope with unsedated gastroscopy or colonoscopy described little difference between the pain experienced during the endoscopic examination and pain or anxiety expected before procedure [28].

Several studies outlined that patient satisfaction was associated with the technical abilities of the endoscopist [28,29,30], which was also consistent with our findings.

Regarding overall satisfaction or procedure quality as perceived by patients, questionnaires enable the recognition of the most frequent causes for dissatisfaction.

In one study assessing the evaluation of patient satisfaction in gastrointestinal endoscopy, the patients were mainly complaining about explanations and waiting time until the appointment [20].

In our study, 94% of the sedated and 74% of the unsedated patients were satisfied by the communication skills of the team and by the explanation received.

A small percentage of patients (under 3%) considered the waiting time until the procedure quite long.

A multivariate analysis from another study [31] showed that the unique element significantly associated with low satisfaction scores was the waiting time in the endoscopy unit.

Satisfaction level was not altered by patient factors as gender, anxiety or anesthesiology score.

Also, trainee involvement did not unfavorably affect patient's satisfaction or pain scores.

However, female gender, high anxiety levels, low sedation levels and longer procedure were associated with higher pain scores.

The most important determinants of the patient's willingness to return for an endoscopic procedure seem to be a comfortable state of the patient while waiting for the procedure and a less unpleasant procedure than anticipated [21].

Another interesting aspect regarding the procedures quality is related to raising awareness of distraction and its impact on patient safety.

After reducing distractions inside the procedural area (from 24 observed interruptions to 0 in 9 months) it was noted a perception of improved nursing quality of care [32].

The original GESQ intended to reflect exhaustive patient-reported experience measures, being validated in an important multicenter endoscopic unit in the United Kingdom [33].

In the original study [33], consenting patients were requested to fill out the GESQ survey off-site 1 day after the procedure and to mail it back in a prepaid envelope.

If there was no response, they were asked again to complete the survey after 2 weeks and 4 weeks.

As a consequence, the original study registered a heterogeneous response time, a latency that might affect the results, since patient satisfaction tended to diminish over time, meaning that respondents often recalled distress even throughout the post-procedure period [28,34].

Overall, there was a dissimilarity between the satisfaction level recorded from the mail survey and direct answers offered on site [34].

For that reason, the timing of reply from patients is important.

In order to reduce the potential for recall bias, the patients included in our study were invited to fill out the modified GESQ after the post-procedure recovery time, as they were still in the endoscopic center.

Furthermore, the differences between the two groups of patients (sedated in the outpatient research center and unsedated in the public hospital) might be justified by the fact that patients might have different requests and expectations compared to those examined in an ambulatory setting.

One of the main advantages of our modified GESQ is its feasibility of being utilized in daily clinical practice considering that it requires no more than 5 minutes to complete.

It includes only 21 items hence being considerably shorter than the commonly used patient satisfaction survey developed by the Group Health Association of America, which consists of 60 items [35].

Conclusion

Our modified questionnaire showed good overall patient satisfaction within the endoscopy unit, while also suggesting some areas in need of improvement, such as staff communication skills, better time management and reorganization of the recovery area.

The importance of propofol sedation during endoscopy procedures cannot be more emphasized, as the differences as compared to unsedated endoscopy were of outmost importance.

Our study clearly demonstrates the importance of such questionnaires in providing feedback information meant to improve standards in endoscopy, including staff skills and organization.

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