

AN ASSESSMENT OF PATIENT SATISFACTION IN DAY CARE SURGERY: A PROSPECTIVE OBSERVATIONAL STUDY

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ABSTRACT

Objective: This study aims to evaluate the patient's satisfaction with anesthesia who underwent daycare surgery in terms of a "core questionnaire for the assessment of patient satisfaction for general daycare" (COPS-D) questionnaire.

Methods: In this prospective observational study, we included 72 patients posted for day care surgery, belonging to ASA physical status 1 and 2. The patient's demographic details, pre-operative assessment, anesthetic technique, and surgical consideration were all recorded, and informed consent was obtained from the respective participants in the pre-operative room. Once the post-anesthesia discharge scoring system criteria are fulfilled by the patient, a COPS-D questionnaire was obtained.

Results: Results were analyzed according to the average score per question and average score per domain of the COPS-D questionnaire. It was found that the highest score was achieved by the question number (Q4) "How satisfied were you with the personal attention of the operation staff? which achieved an average score of 4.72±0.48 and the lowest score was achieved by (Q10) "How satisfied were you with the discharge procedure? which achieved an average score of 4.17±0.79. The overall satisfaction was 80%.

Conclusion: The COPS-D questionnaire proved to be a useful tool in identifying points of patient satisfaction and these were correlated with patient variables such as age, sex, ASA physical status, anesthesia type, and surgical specialty with the ultimate goal of improving patient satisfaction in relation to anesthesia care.

Keywords: Daycare surgery, Patient satisfaction level, COPS-D questionnaire, Post-anesthesia discharge scoring system score, Perioperative care.

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INTRODUCTION

Daycare surgery is a planned surgical procedure on carefully selected and prepared patients who are intended to be admitted and discharged on the same day in a specialized unit [1]. Daycare surgeries have many advantages for patients as it reduces the risk of nosocomial infections and deep vein thrombosis [2]. Due to shorter the period of hospital stays, it reduces financial burden and the separation-induced anxiety problem in patients. In daycare surgeries, the patient feels more satisfied and comfortable as it enables a quicker return to an intimate home setting without endangering the patient's safety [3].

The quality of the health delivery system is determined by the way patients are taken care of and also the waiting time before surgery, the clinical outcome, the incidence of post-operative complications, post-operative pain, and readmissions [4]. Poor quality of anesthesia services may discourage patients from using available services. Quality treatment can be provided by an understanding of patient satisfaction after daycare surgery. These days people are becoming more and more aware of their rights and what they can expect, and the demands of the best possible care are increasing even also in developing countries [5,6]. Validated instruments can be used to assess patient satisfaction which will help us to measure the structure, process, and outcome of a health-care system. Consequently, many health-care organizations have considered the measurement of patient satisfaction to be a critical component of quality assessment. Therefore, it remains the duty of every staff to deliver the best possible care [7,8].

This study aims to evaluate the patient's satisfaction with anesthesia who underwent daycare surgery in terms of a "core questionnaire for

the assessment of patient satisfaction for general daycare" (COPS-D) questionnaire that includes intraoperative care, medical care, and patient information.

METHODS

This is a prospective observational study, conducted over 6 months from April 2022 to June 2023.

Inclusion criteria

Patients between 18 and 65 years of age with American Society of Anesthesiology (ASA) I and II undergoing daycare surgeries were included in the study.

The ASA physical status classification system came about to offer perioperative clinicians a simple categorization of a patient's physiological status that can help predict operative risk [9].

| Class | Criteria |
|-----------|--|
| Class I | A normal healthy patient. |
| Class II | A patient with mild systemic disease. |
| Class III | A patient with a severe systemic disease that is not life-threatening. |
| Class IV | A patient with a severe systemic disease that is a constant threat to life. |
| Class V | A moribund patient who is not expected to survive without the operation. |
| Class VI | A brain-dead patient whose organs are being removed with the intention of transplanting them into another patient. |

Exclusion criteria

Uncooperative patients and patients with ASA Grade III and above were excluded from the study. The emotionally unstable patients, patients residing far from the hospital, surgery expected to have major blood loss, and obese patients with body mass index (BMI) >35 kg/m².

Sample size calculation

Based on the study conducted by Doyle DJ *et al.* (2022) [9], assuming the patient satisfaction percentage is 75%, absolute precision is 10%, confidence level is 10% The samples required is 72. This is calculated using master version 2.0.

After Institutional Ethical Committee clearance (Certificate No: INSTEC/EC/050/2022), written informed consent to participate in the study was taken by the postgraduate student of anesthesia and operation theatre technology, after explaining the procedure. Patients were explained about the procedure of the study, confidentiality of the data, and the benefits and risks associated with the study. Patients were also informed that they could withdraw from the study at any point if they were not interested. The patient's age, sex, height, weight, and BMI were documented. Before the planned surgery, all patients would have undergone a pre-anesthetic assessment and the consultant discussed the daycare surgery, predict issues, and type of anesthesia planned. Information about the patient and the anesthesia were recorded. To maximize the return rate, the data were collected when the patient was awake in their hospital bed before leaving the hospital at the time of discharge.

Following surgery, patients were monitored for a few hours in the daycare observation room, also known as the post-operative room. The institution strictly followed formalized discharge criteria to determine when patients were ready for discharge. A discharge form, which included the post-anesthesia discharge scoring system (PADSS), was completed. A PADSS score of <8 indicated that the patient should be admitted to the hospital for overnight observation.

The COPS-D was chosen since it is a validated survey for daycare, including daycare surgery. It assesses three dimensions/domains: Operation room (3 items), medical care (3 items), and information (2 items). The response for each item was assessed on a 1-5 Likert scale (1 = very unsatisfied, 2 = unsatisfied, 3 = Neutral, 4 = satisfied, and 5 = very satisfied). The average of the item score constituted the domain score.

Statistical analysis

The statistical analysis was performed using master version 2.0 with unpaired "t" test, Chi-square test, and Pearson's correlation test to interpret mean, frequency, and percentage.

RESULTS AND DISCUSSION

This prospective observational study included 72 patients who gave consent to be part of the study and were posted for daycare surgery. Both male (36) and female (36) patients are equally distributed in the study. The mean age of the patients was 41.7 years and the mean weight, height, body mass index, and post-anesthetic scoring system are shown in Table 1.

ASA physical status classification system was used to predict the operative risk among the patients. Out of 72 patients, 50 patients fit under level 1 (ASA 1) and the remaining 32 patients fit under level 2 (ASA 2).

Table 2 shows the various techniques used for anesthesia. General anesthesia was used in maximum (43.1%) patients followed by spinal anesthesia in 23.6% of patients.

As shown in Fig. 1, a high number of daycare surgeries were conducted in urology (25%), followed by obstetrics and gynecology (23.6%), orthopedics (19.4%), general surgery (13.8%), and ENT (13.8%).

Table 1: Descriptive Statistics for age, weight, height, body mass index, and PADSS

| Parameter | Range | Mean | Standard deviation |
|--------------------------------------|---------|-------|--------------------|
| Age (years) | 18-65 | 41.7 | 13.1 |
| Weight (kg) | 16-93 | 62.3 | 13.3 |
| Height (cm) | 142-189 | 159.9 | 9.3 |
| Body mass index (kg/m ²) | 18-38 | 24.6 | 4.4 |
| PADSS | 8-10 | 9.6 | 0.5 |

PADSS: Post-anesthetic discharge scoring system

Table 2: Distribution of type of anesthesia

| Type of anesthesia | Frequency | Percentage |
|--|-----------|------------|
| Spinal anesthesia | 17 | 23.6 |
| Regional anesthesia with monitored anesthesia care | 1 | 1.4 |
| Regional anesthesia Bier's block | 1 | 1.4 |
| Monitored anesthesia care | 9 | 12.5 |
| Local anesthesia | 9 | 12.5 |
| General anesthesia | 31 | 43.1 |
| Brachial plexus block | 4 | 5.6 |

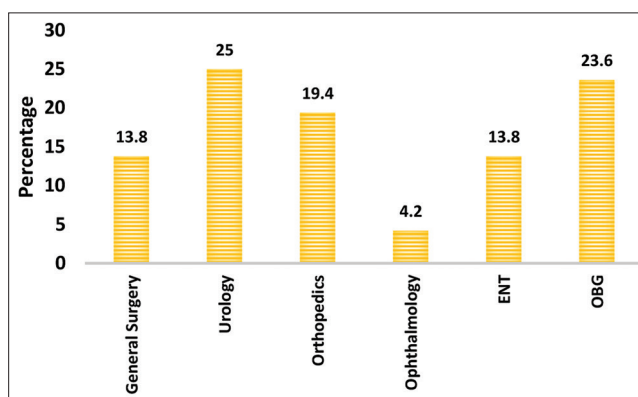


Fig. 1: Distribution of patients according to surgical specialties

Table 3 shows the response of the patient to COPS-D questions. In domain 1 (pre-admission) Q1 – the reception: 30.6% of participants were very satisfied, 50% of participants were satisfied, and 19.4% of participants were answered neutral. Q2 – personal attention: 54.2% of participants were very satisfied, 34.7% of participants were satisfied, and 11.1% of participants answered neutral.

In domain 2 (Operation room) Q3 – the reception: 66.7% of participants were very satisfied, 29.2% of participants were satisfied, and 4.2% of participants answered neutral. Q4 – personal attention of the OR staff: 73.6% of participants were very satisfied, 25% of participants were satisfied, and 18% of participants answered neutral. Q5 – expertise of the OR staff: 73.6% of participants were very satisfied, 20.8% of participants were satisfied, and 5.6% of participants answered neutral.

In domain 3 (medical Care) Q6 – personal attention of the doctors: 48.6% of participants were very satisfied, 40.3% of participants were satisfied, and 11.1% of participants answered neutral. Q7 – expertise of the doctors: 62.5% of participants were very satisfied, 27.8% of participants were satisfied, and 9.7% of participants answered neutral.

In domain 4 (information), information provided about further treatment: 36.1% of participants were very satisfied, 48.6% of participants were satisfied, 13.9% of participants were answered neutral, and 1.4% of participants were unsatisfied. Q10 – discharge procedure: 40.3% of participants were satisfied, 36.1% of participants were satisfied, and 23.6% of participants answered neutral.

Table 3: COPS-D response scoring

| COPS-D | Unsatisfied n (%) | Neutral n (%) | Satisfied n (%) | Very satisfied n (%) |
|--|-------------------|---------------|-----------------|----------------------|
| Reception | 0 | 14 (19.4) | 36 (50) | 22 (30.6) |
| Personal attention | 0 | 8 (11.1) | 25 (34.7) | 39 (54.2) |
| Reception (operation room) | 0 | 3 (4.2) | 21 (29.2) | 48 (66.7) |
| Personal attention of the operation staff | 0 | 1 (1.4) | 18 (25) | 53 (73.6) |
| Expertise of the operating staff | 0 | 4 (5.6) | 15 (20.8) | 53 (73.6) |
| Personal attention of the doctors | 0 | 8 (11.1) | 29 (40.3) | 35 (48.6) |
| Expertise of the doctors | 0 | 7 (9.7) | 20 (27.8) | 45 (62.5) |
| Information provided about further treatment | 1 (1.4) | 10 (13.9) | 35 (48.6) | 26 (36.1) |
| Discharge procedure | 0 | 17 (23.6) | 26 (36.1) | 29 (40.3) |

COPS-D: Core questionnaire for the assessment of patient satisfaction for general daycare

The independent sample "t" test was used to compare cumulative scores of COPS-D according to gender as well as ASA. There was no difference ($p > 0.05$) in the cumulative score of COPS-D according to gender as well as ASA. The descriptive statistics for the cumulative score of COPS-D was found to be range between 30 and 50 with mean 44.4.

There was a positive correlation ($p < 0.05$) between PADSS and the cumulative score of COPS-D (Table 4). The Pearson correlation coefficient was used to find the relation between age, weight, and height. Fig. 2 shows the comparison of cumulative score of PADSS and COPS-D.

In our study, most patients who underwent daycare surgeries were between the mean age group of 41.7 ± 13.1 years. In our study, 36 participants (50%) were male and 36 (50%) were female. In a study done by Joseph Andrew, the average age was 24.89 years old with a standard deviation of 1.98 years [10].

In the present study, the majority of patients underwent urological procedures (25%), followed by gynecological procedures (23.6%), then orthopedics (19.4%). There were 10 patients each in both ENT (13.8%) and general surgeries (13.8%) and the least number of patients were there in ophthalmology (4.2%). In a study carried out by Lemos *et al.*, a higher number of patients (45.5%) underwent gynecological procedures, followed by vascular (17.1%) and orthopedic (10.3%) surgeries [11]. Variations in the surgical specialty might be due to differences in the area or region of the study conducted and the prevalence rate of common diseases.

In the present study, 40.9% of the patients were given general anesthesia, 22.7% of the patients were given spinal anesthesia, 18.2% of the patients were administered local anesthesia, and the remaining 9.1% were given monitored anesthesia care. As there is an equal distribution of prevalence of anesthesia in the study, there was no association observed between gender, anesthesia, and ASA.

In a study carried out by Lemos *et al.*, 82.2% of the patients were given general anesthesia, and 13.3% of the patients were given local anesthesia [11]. The type of anesthesia chosen in both studies was mainly based on the kind of surgeries the patients were undergoing. In both studies, general anesthesia was given majority of the patients.

In our study, we observed that the average scores ranged from 4.11 ± 0.70 to 4.72 ± 0.48 , indicating variations based on the specific questions asked and COPS-D score ranged from 30 to 50 with a mean score of 44.4 ± 4.7 , which is in contrary to the study conducted by Dwivedi *et al.* which ranged between 3.61 and 4.19 [12]. This difference in scores could be because Dwivedi included questions relating to other parameters of the surgery such as nursing care and autonomy, and we have focused more on anesthesia-related domains.

Out of all the questions we asked, the personal attention of OR staff received the highest score with a mean of 4.72 ± 0.48 and the reception received the lowest score with a mean of 4.11 ± 0.70 . This suggests that the majority of subjects were satisfied with the service provided to

Table 4: Relation between age, weight, height, body mass index, PADSS, and the cumulative score of core questionnaire for the assessment of patient satisfaction for general daycare

| Criteria | Cumulative scores | |
|--------------------------------------|-------------------|---------|
| | "r" | p-value |
| Age (years) | 0.039 | 0.743 |
| Weight (kg) | 0.149 | 0.210 |
| Height (cm) | 0.084 | 0.484 |
| body mass index (kg/m ²) | 0.225 | 0.058 |
| PADSS | 0.394 | 0.001* |

PADSS: Post-anesthesia discharge scoring system, *denotes that results is statistically significant value

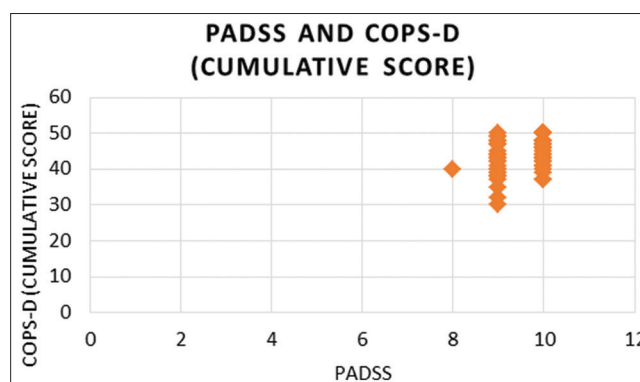


Fig. 2: Scatter diagram showing post-anesthesia discharge scoring system and core questionnaire for the assessment of patient satisfaction for general daycare

them. Although, there is scope for improvement in certain areas like information provided to the patient about discharge procedure, services provided by reception staff can be improved. The overall satisfaction of our study is 80% which is higher than the study conducted by Andemeskel *et al.* which was 68.8% and was less when compared to the results of Shah *et al.* in which the satisfaction score was 92.1% [13,14].

The PADSS is a commonly used scoring system to evaluate the patient before discharge. The scores ranged between 8 and 10 with a mean of 9.6 ± 0.5 . None of the domains received exceptionally low scores; this is due to the care provided in daycare surgeries positively influenced by the primary dimensions of service quality which include technical, interpersonal, and environmental quality. Nevertheless, the scores indicated that there is significant room for improvement in patient satisfaction with daycare surgery. It is imperative to focus our efforts on attaining higher average scores across all aspects of patient care, including individual questions within each domain.

The limitations of the study

Are - We have included 36 male and 36 female patients who commonly underwent less complex daycare procedures. Therefore, the findings for complex procedures are not clearly understood. In this study, the majority

of the participants belonged to ASA 1 (69.4%) that they were free from comorbidities. Hence, the findings are not based on the comorbidities. The survey of satisfaction is a single question with a five-point Likert rating scale and did not include open-ended questions' this approach has been condemned as too simplistic to fully evaluate satisfaction.

CONCLUSION

The present study findings revealed positive aspects of care, including satisfactory pre-operative information and instructions, professionalism and competence of surgical staff, and adequate post-operative pain management. However, some areas for improvement were identified, such as the need for improved communication during anesthesia administration, reduced waiting times for post-operative monitoring, better communication about the recovery process, addressing noise and privacy concerns, and providing more detailed explanations for patients. Overall, the assessment demonstrated high levels of patient satisfaction with daycare surgery, highlighting the convenience, reduced hospital stays, and efficient processes associated with this approach. This study suggests that addressing the identified areas for improvement can further enhance patient satisfaction and contribute to the continuous improvement of daycare surgical services.

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Nil.

AUTHORS' CONTRIBUTIONS

Dr. Anil Shetty, Dr. M Govindraj Bhat, and Mr. Blessing Dhas A designed the entire work. All the authors have contributed to making the necessary corrections and revisions of the manuscript and the final draft was checked by all the authors.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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