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Assessment of Preoperative Anxiety among Surgical Patients in Indian Hospital

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ABSTRACT
The evaluation of preoperative anxiety among surgical patients is crucial in ensuring their overall well-being and optimizing surgical outcomes. Aim: To assess the prevalence and severity of preoperative anxiety among surgical patients. To identify the factors contributing to preoperative anxiety.
Materials and methodology: Between November 2022 and April 2023, a total of 1021 surgical patients above 18 years old were evaluated for preoperative anxiety using the APAS during the pre-anesthesia check. Pediatric patients and those requiring emergency surgery were excluded. Results: Among the patients, 53% were male. The majority of patients (43.7%) fell within the 25 years-49 years age group, while 32% were classified as illiterate. General surgery represented the largest surgical specialty (35.7%), and 80.1% underwent major surgeries. Concerns regarding anesthesia, surgery, complications, postoperative pain, and surgery cancellation were reported by varying proportions of patients. Notably, 51.8% of patients were not worried about anesthesia, while 44.9% expressed concerns about the surgery itself. Furthermore, 47.3% of patients reported anxiety related to surgical complications, and 44.2% were worried about postoperative pain. Additionally, 52.2% expressed concerns about the possibility of surgery cancellation. Most patients had APAS scores ranging from 0 to 5.
Conclusion: APAS is an effective screening tool for assessing preoperative anxiety and should be considered for all elective surgeries. An effective counselling or pharmacotherapy should be considered if the anxiety level is higher for a better outcome.
Keywords: Anxiety • Anesthesia • Elective • Surgery

I. INTRODUCTION

Preoperative anxiety is a common phenomenon experienced by surgical patients and can significantly impact their overall well-being and surgical outcomes. It encompasses a range of psychological and physiological symptoms, including fear, worry, increased heart rate, and elevated stress levels. Understanding and evaluating preoperative anxiety among surgical patients is essential for healthcare providers to effectively address and mitigate its negative effects.

The experience of undergoing surgery is often associated with uncertainty, fear of the unknown, and concerns about potential complications. Preoperative anxiety can stem from various factors, including the nature of the surgical procedure, fear of pain, anesthesia, postoperative recovery, and potential adverse outcomes. It can be influenced by individual characteristics, such as age, gender, previous surgical experiences, and levels of social support.

The impact of preoperative anxiety on surgical outcomes is welldocumented [1, 2]. Higher levels of preoperative anxiety have been associated with increased anesthesia requirements, longer recovery times, higher postoperative pain levels, and greater likelihood of postoperative complications. Also, preoperative anxiety can lead to decreased patient satisfaction, impaired decision-making, and delayed recovery.

Recognizing the significance of preoperative anxiety, healthcare providers have implemented various interventions to address and manage this condition. Pre-operative education, psychological support, relaxation techniques, and pharmacological interventions are among the strategies used to alleviate anxiety and improve the overall surgical experience. Various pharmacological and nonpharmacological methods are tried to prevent the anxiety among patients who are undergoing surgery [3]. Non-pharmacological interventions encompass a range of approaches that can be employed in patient care. These interventions include interviews with patients, effective communication, music therapy, acupuncture, various distraction techniques, and comprehensive patient education [4-7]. It is important to note that this list represents only a selection of non-pharmacological interventions available, and there may be other interventions that can be utilized as well. However, the effectiveness and optimal approach to managing preoperative anxiety may vary depending on individual patient characteristics and the surgical context.

This study aims to evaluate the prevalence and severity of preoperative anxiety among surgical patients, as well as identify contributing factors. By understanding the extent and nature of preoperative anxiety, healthcare providers can tailor interventions to meet the specific needs of patients and enhance their surgical experience. Ultimately, the findings of this study can contribute to the development of evidence-based strategies to reduce preoperative anxiety, improve surgical outcomes, and optimize patient care.

To date, there is a lack of standard indigenous preoperative anxiety assessment scales or scores available. However, we have developed theAssessment of Preoperative AnxietyScoring (APAS), an innovative tool designed to evaluate preoperative anxiety among patients undergoing various types of surgeries. With this indigenous scale, we aim to provide healthcare providers with a comprehensive understanding of the anxiety levels experienced by patients before surgery, empowering them to tailor culturally appropriate interventions and support systems in the future. By addressing the unique needs and perspectives of patients, APAS has the potential to enhance patient care and improve surgical outcomes.

II. MATERIALS AND METHODS

This prospective observational questionnaire-based study was conducted at our rural tertiary care hospital following approval from the institutional ethical committee. This study was conducted between 1st September 2022 till 30th April 2023. Here in this study, we included patients of both genders, aged 18 years and above, who expressed willingness to participate. Data collection took place in the pre anesthetic check-up room, where the questionnaire was provided in the local language. For illiterate patients, assistance was provided to ensure accurate completion of the form. Patients undergoing emergency surgery or those unable to comprehend the questions despite proper explanation in the local language were excluded from the study. The questionnaire encompassed all the parameters outlined in the APAS as described in Table 1. The study collected comprehensive demographic data pertaining to all participants. Additionally, the anticipated duration of each surgery was recorded and classified as either minor surgery, if projected to take less than 30 minutes, or major surgery, if expected to exceed 30 minutes.

In the assessment, each parameter was assigned a score ranging from "0" to a maximum of "4." The overall APAS consists of a minimum score of "0" and a maximum score of "32." Upon completion of the questionnaire, the scores from each parameter were summed to obtain the total score. The total score was then categorized into groups: 0-5, 6-10, 11-15, and >15, allowing for a comprehensive understanding of the anxiety levels among the patients.

III. RESULTS

In this study, a total of 1021 patients participated, with 541 (53%) being male and 480 (47%) being female. In our study we found the females are more anxious than males by 1.7 times. The majority of participants fell within the age group of 25 years-49 years, accounting for 43.7% of the sample. It is noteworthy that assistance was provided to 327 (32%) of the patients who were illiterate to ensure accurate completion of the assessment form. Additionally, a significant proportion of the patients (43%) identified themselves as farmers by occupation. All patients were categorized based on their respective departments and referred to the pre anaesthesia check-up for further evaluation (Figure 1).

A total of 310 patients had preoperative anxiety score ≥ 15, out of which the general surgery patients contributed 42.3%. (Figure 2).

Out of 1021 patients 763 (74.7%) patients were not having any type of the comorbid illness, however rest others had common comorbid illness like, hypertension (11.6%) and diabetes (6.2%).

529 (51.8%) patients were not anxious related to type of anesthesia however remaining patients were. Only 59(5.8%) of the patients were highly anxious about anesthesia based on the scaling system (Figure 3).

458 (44.9%) patients were not anxious related to type of surgery however remaining patients were. Only 76 (7.4%) of the patients were highly anxious about surgery based on the scaling system (Figure 4).

451 (44.2%) patients were not anxious related to postoperative pain however remaining patients were. Only 75 (7.3%) of the patients were highly anxious about postoperative pain based on the scaling system (Figure 5).

483(47.3%) patients were not anxious related to complications however remaining patients were. Only 66 (6.5%) of the patients were highly anxious about postoperative pain based on the scaling system (Figure 6).

566(55.4%) patients were not anxious with respect to postoperative hunger, however remaining patients were. Only 44 (4.3%) of the patients were highly anxious about postoperative hunger based on the scaling system (Figure 7).

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Table 1. Describes the APAS parameters included and scores.

SCORES					
Description	**0**	**1**	**2**	**3**	**4**
	(Not at all)	**(Somewhat)**	**(Moderate)**	**(High)**	**(Extremely high)**
I'm worried about Anaesthesia					
I'm worried about surgical procedure					
I'm worried about possible complication/s					
I'm worried about postoperative pain					
I'm worried about finance					
I'm worried about post-operative hunger					
I'm worried about cancellation of surgery					
I'm worried about my dependency on my family members					

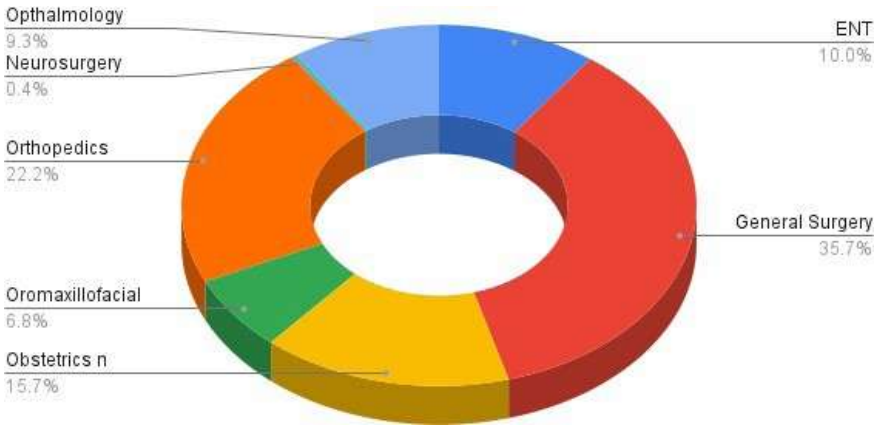
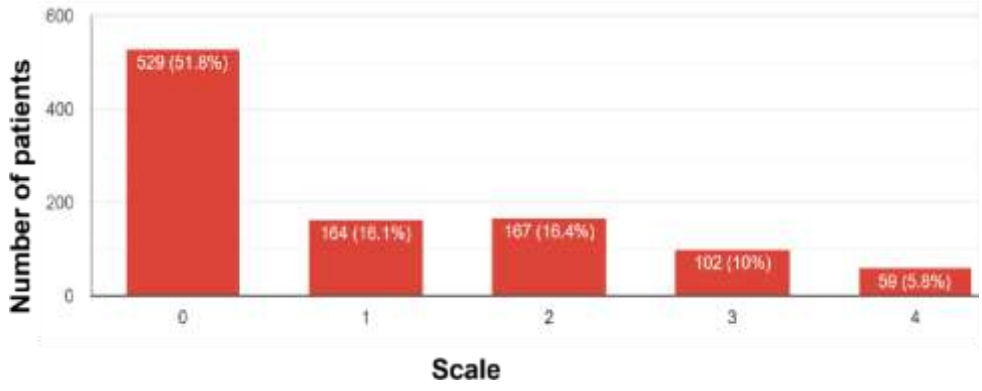


Figure 1. The patient distribution according based on their department under which they are admitted.

Figure 2. The patient distribution according based on their anxiety score equal to or more than 15.



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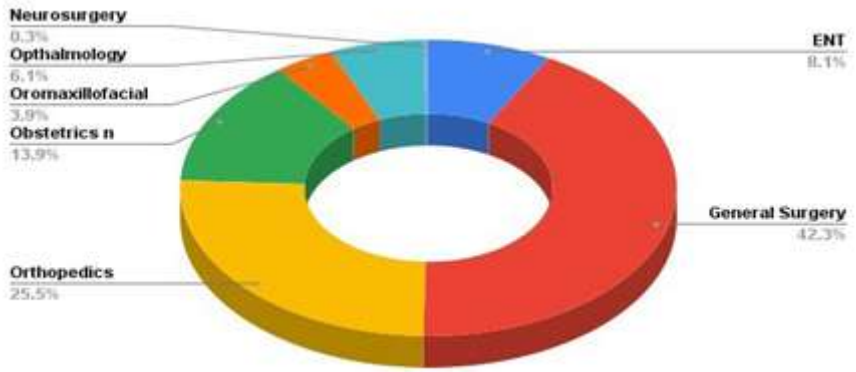

Figure 3. The anxiety among patients with respect to anesthesia.

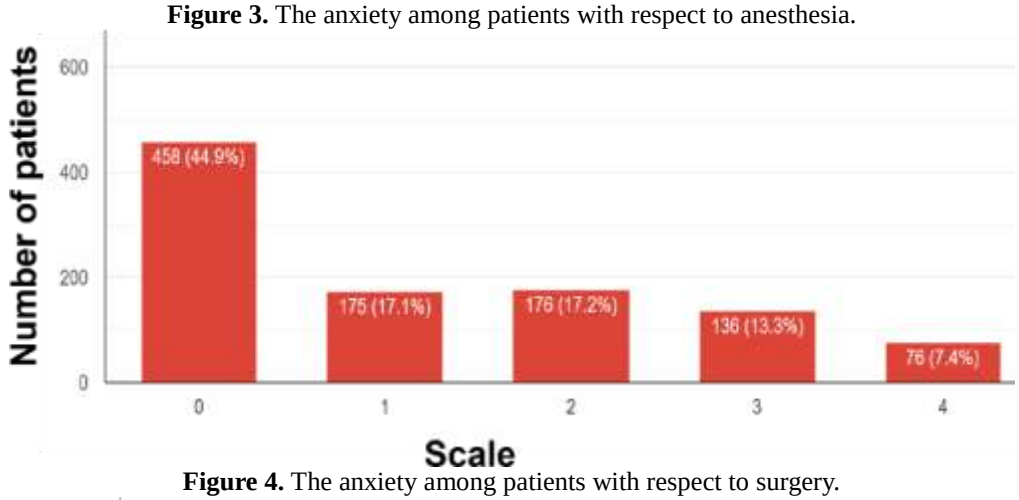

Figure 4. The anxiety among patients with respect to surgery.

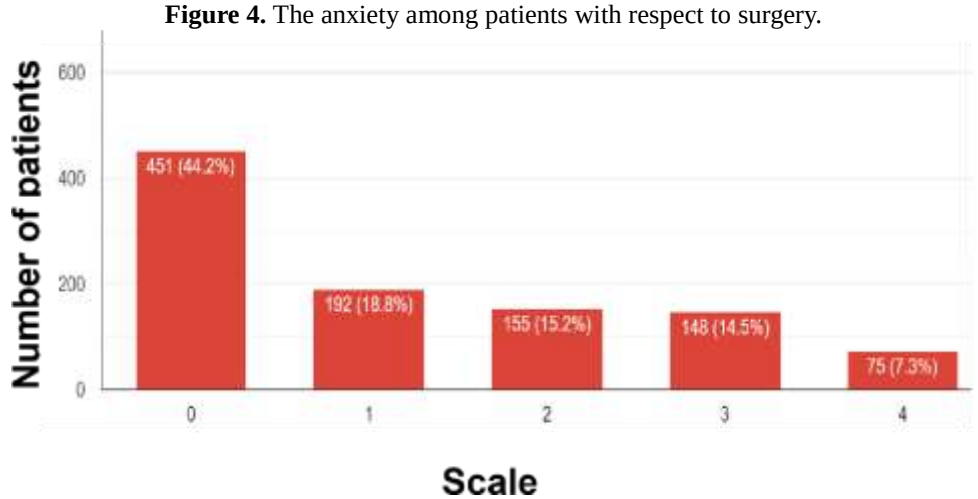

Figure 5. The anxiety among patients with respect to postoperative pain.

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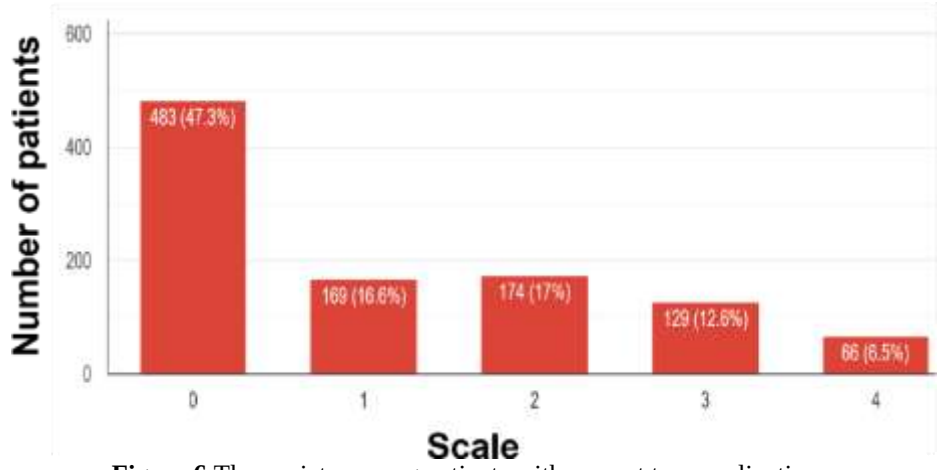

Figure 6. The anxiety among patients with respect to complications.

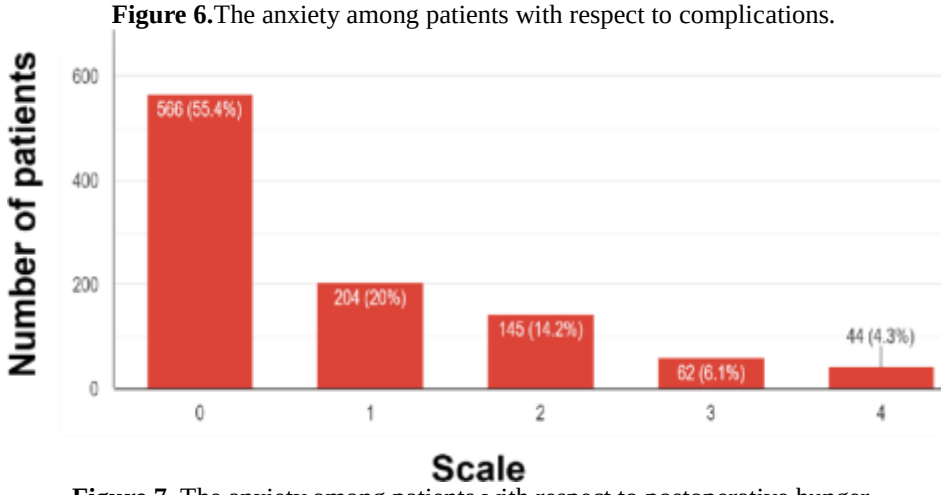

Figure 7. The anxiety among patients with respect to postoperative hunger.

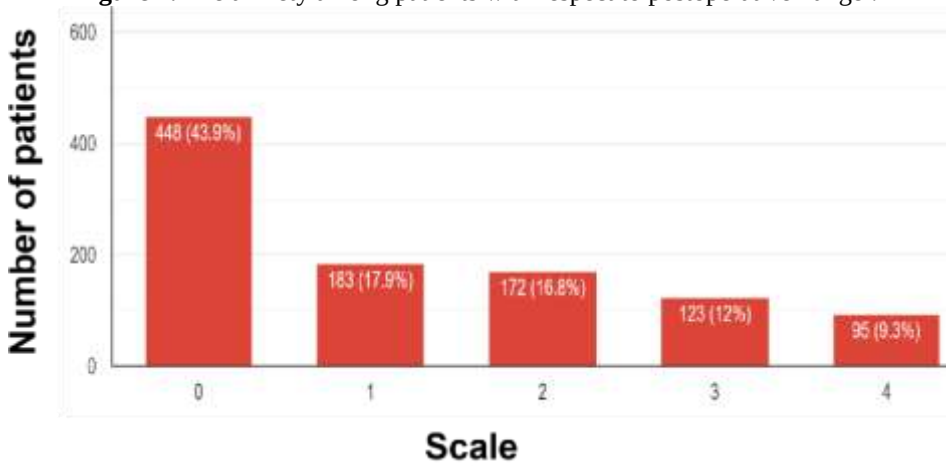

Figure 8. The anxiety among patients with respect to finance.

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448(43.9%) patients were not anxious with respect to finance, however remaining patients were. Only 95 (9.3%) of the patients were highly anxious about finance based on the scaling system (Figure 8).

484(47.4%) patients were not anxious with respect to dependency of other family members on the patient, however remaining patients were. Only 62 (6.1%) of the patients were highly anxious about dependency based on the scaling system (Figure 9).

The department wise average scoring of total score was done as shown in Table 2. The highest average total score is 10.1 and lowest was 7.07 for department general surgery and department of ophthalmology respectively (Table 2).

IV. DISCUSSION

The evaluation of preoperative anxiety among surgical patients is crucial in ensuring their overall well-being and optimizing surgical outcomes. By assessing anxiety levels prior to surgery, healthcare providers can implement appropriate interventions and support systems tailored to individual patients' needs. A comprehensive

Table 2. The department wise average score.

Department	Total patients	Summation of all score	Average score
ENT	102	811	7.95
General surgery	364	3678	**10.1**
Neurosurgery	4	30	7.5
Obstetrics and gynaecology	160	1303	8.14
Ophthalmology	95	672	7.07
Orthopaedic	227	2005	8.8
Orofacial and maxillary	69	495	7.17

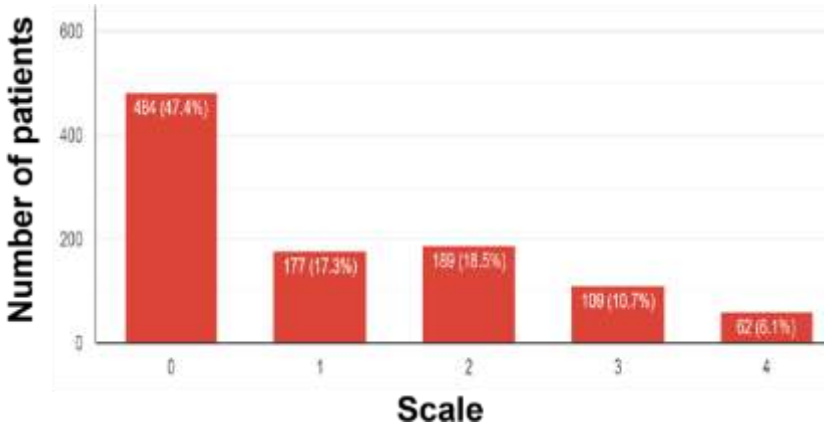

Figure 9. The anxiety among patients with respect to dependency.

evaluation of preoperative anxiety can contribute to reducing patient distress, improving surgical experiences, and enhancing postoperative recovery. Understanding the prevalence and severity of preoperative anxiety allows healthcare providers to allocate resources effectively and develop targeted strategies to address this common phenomenon. By addressing preoperative anxiety, healthcare providers can improve patient satisfaction, enhance communication, and promote a more positive surgical journey. Additionally, the identification of factors contributing to preoperative anxiety enables healthcare providers to focus on modifiable elements such as providing education, counselling, and emotional support to alleviate anxiety and enhance patient outcomes. In this study, we observed a nearly equal distribution of patients based on gender, indicating a balanced representation. Our research suggests that the higher incidence of anxiety among females, which is 1.7 times higher than in males, may be influenced by the relatively higher levels of illiteracy among females in rural populations, the results are in consistence with the study conducted by Engda et al [8]. An interesting finding was that the majority of patients attending the pre anesthesia check-up were literate, suggesting a commendable literacy rate in the rural part of Maharashtra. As anticipated in a rural setting, a significant proportion of the patients were found to be engaged

in farming occupations, as evidenced by our study. This highlights the importance of understanding the specific demographics and socioeconomic factors of the patient population, as it can provide valuable insights for healthcare providers in delivering tailored care and interventions in rural healthcare settings. The anxiety levels among the illiterate patients were higher than the literate patients. This is inconsistence with the study conducted by Kumar et al [9].

Among the 1021 patients included in our study, a significant portion of 364 (35.7%) patients were admitted under the general surgery department. This finding is consistent with expectations, as general surgeons typically handle a wide range of surgical procedures. Given the rural setting, it is not surprising to encounter patients presenting with common surgical issues. Although specific details regarding the types of diseases were not recorded in our study, it can be reasonably assumed that the patients predominantly had common surgical problems commonly encountered in the rural population. The second most common type of patient admissions were related to orthopaedic problems, accounting for 227 (22.2%) patients. As per the criteria outlined in this study, a significant majority of the patients (80.1%) underwent major surgeries. Given its status as a tertiary care hospital, it is anticipated that a substantial number of patients requiring significant interventions would seek treatment.

In our study, a significant proportion of patients, specifically 763 (74.7%), were observed to be free from comorbid illnesses such as diabetes, hypertension, and thyroid disorders, among others. This finding is particularly noteworthy, considering that the majority of the patients fell within the 25 years-50 years age group. It suggests that a substantial portion of the study population was relatively healthy and did not have pre-existing medical conditions that could potentially complicate their surgical management.

Our study findings revealed that a significant proportion of patients did not experience worry or anxiety regarding anesthesia. This could be attributed to effective patient counselling provided during the preoperative period. However, a small percentage of patients (5.8%) exhibited a high level of anxiety specifically related to anesthesia. Regarding anxiety associated with the surgical procedure itself, the majority of patients reported feeling minimal anxiety, while 7.4% (76 patients) expressed a higher level of anxiety. It is possible that this reduced anxiety can be attributed to thorough counselling by the surgical team, ensuring that patients are well-informed about the surgical process.

Informed consent, including detailed information about potential surgical complications, is crucial in-patient care. In our study, we found that 47.2% (484 patients) exhibited no signs of anxiety, while the remaining patients experienced varying degrees of anxiety. Specifically, 6.4% (66 patients) displayed a high level of anxiety. Emphasizing the importance of informed consent ensures that patients are well aware of the potential risks associated with the surgical procedure. Although there are no studies which shows the anxiety level among patients with respect to possible surgical complications, it is found that patient with preoperative anxiety have higher chances of perioperative complications [10].

Postoperative pain is an unpleasant experience that can have a psychological impact on individuals. Inadequate management of postoperative pain can lead to patients being hesitant or unprepared for subsequent surgeries, if necessary. In this study, we found that a significant portion of patients (44.2% or 453 patients) expressed no concern regarding their postoperative pain. However, the remaining patients did express worry about experiencing postoperative pain. Among the total of 1,021 patients, 7.3% (75 patients) expressed significant apprehension regarding postoperative pain. It has been reported by previous studies that, preoperative anxiety increases the postoperative analgesic requirement and the pain levels [11].

Nutrition and hunger management are crucial considerations for patients undergoing surgery. It is essential to provide clear and effective instructions regarding fasting (nil by mouth) before the surgical procedure. Additionally, early postoperative feeding should be prioritized, particularly for patients who undergo regional anesthesia. In our study, a majority of the patients (55.7% or 575 patients) did not express significant concern about postoperative hunger. However, a small percentage (4.3% or 44 patients) reported being highly worried about experiencing hunger after the surgery. There are no such studies conducted to study the anxiety levels with respect to postoperative possible hunger.

With the continuous growth of healthcare services and the availability of specialized surgeries, the affordability of surgical procedures becomes more challenging. However, thanks to the implementation of various government schemes in tertiary care, patients have been able to access healthcare services with reduced financial burden. When considering the financial aspect, it is noteworthy that out of the 451 patients surveyed, 43.7% did not express concerns about the cost, while 9.2% of the patients reported feeling very

anxious. This level of anxiety is understandable, particularly in rural areas of India where a significant portion of the population lives below the poverty line. In a study by Bedaso et al., it was reported that 55.7% of patients from low- and middle-income countries experienced preoperative anxiety specifically related to the financial burden associated with their surgery [12]. In line with these findings, our study revealed a similar result, with 56.3% of patients expressing preoperative anxiety regarding the potential financial implications of their surgical treatment.

The cancellation of a scheduled surgery can have significant negative implications for individuals. It may occur due to various factors such as time constraints, unpreparedness, insufficient blood supply, or lack of preparedness on the part of the patient or their relatives. Undoubtedly, the cancellation of a surgery can has wide-ranging effects. In our study, it was found that out of the patients surveyed, 52.7% (544 patients) expressed no worries regarding the possibility of cancellation, whereas 5.8% (60 patients) reported extreme concerns about surgical cancellations. Sommer et al. conducted a study that revealed 10.6% of patients experiencing preoperative anxiety due to concerns about potential surgery cancellation [13]. In our study, we observed a slightly higher level of anxiety scores, which can be attributed to various factors such as financial concerns, employment status, and dependency on family members, among others. It is crucial to recognize that many patients travel from nearby areas and undergo admission in preparation for the surgery, and the cancellation can have a profound psychological impact on them. It is important to emphasize that the cancellation of a scheduled surgery can serve as an indicator of the quality of a hospital's operations and procedures.

In rural India, it is often observed that families live in joint households and collectively contribute to the household income, including children. Therefore, it is not uncommon for family members to be dependent on the individual undergoing surgery. Out of the patients surveyed, 47.3% (489 patients) expressed that they are not dependent on the person undergoing surgery, while 6% (62 patients) reported being extremely dependent on them. This indicates that the individual undergoing surgery holds a crucial role in taking care of the family and its wellbeing. The remaining patients expressed varying degrees of partial dependency on the person undergoing surgery. Although there are no comparable studies available on the dependency factor among patient undergoing elective surgery and dependency of other family member on the patient, our research identified a study conducted by Guner et al. Among neurosurgical patients undergoing neurosurgery, it was found that a significant number of patients rely on their family members for ongoing care and support [14].

Limitation of the study

We did not record the ASA status, previous surgical history and their relation to the preoperative anxiety in patients.

V. CONCLUSION

Our study conducted in a rural tertiary care unit indicates that patients, particularly women and those undergoing general surgery, tend to exhibit higher levels of preoperative anxiety. We recommend the utilization of the Assessment Preoperative Anxiety Scoring (APAS) as a reliable tool during preanesthesia check-ups. By promptly identifying and addressing elevated anxiety scores, healthcare providers can effectively reduce the risk of perioperative complications. Implementing appropriate interventions at the preoperative stage will contribute to improved patient outcomes and overall surgical experience.

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