

Assess the Anxiety of Patients Preoperatively and Postoperatively Undergoing Elective Surgery Using Anesthesia Information Sheet: A Prospective Randomized Clinical Study

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1. Introduction

Anxiety is an emotional state characterized by feelings of nervousness, worry, apprehension, and tension due to high activity of the autonomic nervous system.[1,2] Earlier studies have reported the prevalence of pre-operative anxiety ranging from 10% to 80%.[3,4] Pre-operative anxiety has both psychological and physiological effects by activation of the hypothalamic-pituitary-adrenal axis.[5] It can lead to deleterious effects on the hemodynamic parameters during the perioperative period; affect the overall anaesthesia management and surgical outcome. Pharmacological medications are used to reduce anxiety, but they may induce some adverse effects. In contrast to this, various non-pharmacological interventions like—reassurance, music therapy, breathing exercises, meditation, acupuncture, pre-procedure education are used to allay pre-operative anxiety and they are inexpensive, easy to perform, do not require high level of technical skill or equipment and are without adverse effects.[7] Previous randomized controlled trials of pre-procedure education such as structured interview, multimedia, and question prompt tool were found to be more effective than conventional methods, but no study is available till date about the use of anaesthesia information sheet as a tool for pre-procedure counselling. No literature is available for the same in the Indian scenario.

Hence, this study was designed to evaluate the effect of pre-operative counselling of patients using anaesthesia information sheet on anaesthesia-associated pre-operative anxiety as a primary objective. Secondary objectives were to assess pre-operative anxiety for surgery, correlation of demographic data with pre-operative anxiety and common causes of pre-operative anxiety.

2. Materials and Methods

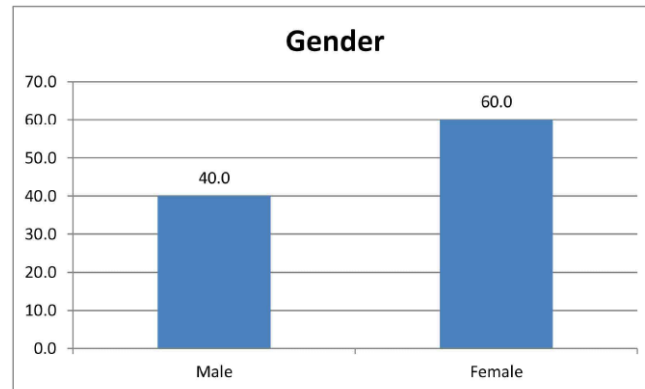
After Institutional Ethical Committee approval and informed consent were obtained, 50 patients between age group of 18-70 yrs., scheduled for elective surgeries, American Society of Anesthesiologists physical status class I or III, were enrolled into this prospective randomized, observational study. Patients with a previous diagnosis of mental illness, cognitive dysfunction or on anti-anxiety medications were excluded in the study. All patients who can understand Tamil or English were considered in our study. After obtaining written and informed consent patients were randomly allocated into 2 groups A and B. The allocation was blinded. An anesthesia information sheet which was prepared in English and Tamil contained details about the meaning of anesthesia, different types of anesthesia, pros and cons of each method, the preparation of patient for anesthesia and post-operative care.

Day prior to the surgery pre-operative anxiety was assessed by the principle investigator who is involved in the study, using 2 questionnaires of visual analogue scale of anxiety (VAS-A) one for anesthesia (VAS-AA) and another for surgery (VAS-AS). The question was rated from 0-10, 0 means -no anxiety and 10 means maximum anxiety. The patients were questioned about the possible cause of their anxiety, previous history of surgery, any negative experiences etc. Patients from Group A were counselled by the co-investigator using an anesthesia information sheet and their queries were clarified during the counseling. Group B patients were counselled verbally in conventional technique and their queries were clarified. Anxiety for anesthesia and surgery was reassessed by the principle investigator who is blinded in both the groups using VAS-A score. If VAS-A was more than 6 in any group, patients were advised to take an anti-anxiety drug in the form of tablet

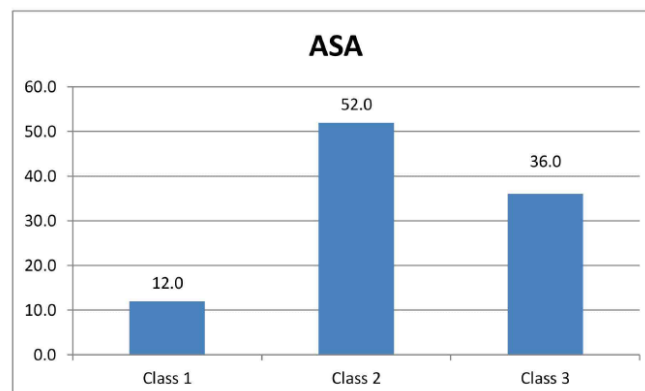
alprazolam 0.5mg night before surgery. The VAS -A scores for anesthesia and surgery were compared pre and post communication using an anesthesia information sheet.

3. Results

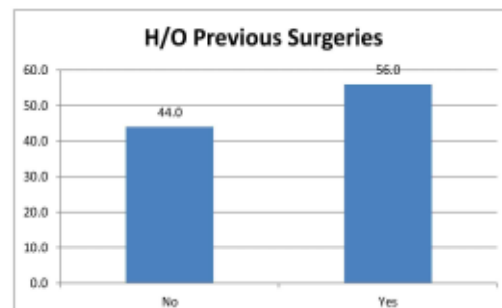
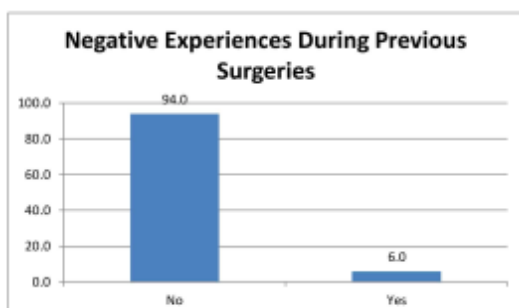
Among 50 patients, 30 patients (60%) were female and 20 patients (40%) were male.



Our study found that majority of patients had ASA 2 (52%) n=26, ASA 3 (36%) n=18, and ASA 1 (12%), n= 6.

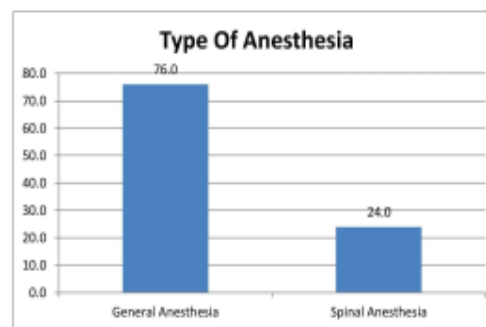


Among 50 patients, 22 patients (44%) had no previous surgery and 28 patients (56%) had previous surgery. Our study found that among 50 patients, 47 patients (94%) had no negative experiences and 3 patients 6% had negative experiences.



Our study found that majority of the anesthesia are general anesthesia 76% and spinal anesthesia (24%) and that majority of the surgery were General surgery (56%).

| Type of surgery | Frequency | Percentage |
|-----------------|-----------|------------|
| ENT | 3 | 6.0% |
| General surgery | 28 | 56% |
| Gynecology | 2 | 4.0% |
| Oncology | 4 | 8.0% |
| Orthopedics | 5 | 10.0% |
| Plastic surgery | 3 | 6.0% |
| Urology | 5 | 10.0% |
| Total | 50 | 100% |



| Percentile | Pre-Anaesthetic Median (IQR) | Post -Anaesthetic Median (IQR) | P VALUE |
|------------|------------------------------|--------------------------------|---------|
| VAS SCORE | 8.000 (8.0-9.0) | 5.000 (4.0-6.0) | 0.001 |

Our study found that, VAS Score of anxiety for anesthesia in pre-operative period are (8.000) and post-operative period are (5.000). The p value is < 0.05 and is significant. It indicates that the communication with the patients using anesthesia information sheet has significantly reduced the anxiety in the patients undergoing elective surgeries regarding anesthesia and procedure of anesthesia

Our study found that, VAS Score of anxiety for surgery in preoperative period are 8.5 with an interquartile range of 8.0- 9.0 and post-operative period is 5.000 with an interquartile range of 4.0-5.0. P value is < 0.05 and is significant.

| Percentile | Pre_Surgery VAS Score | Post _Surgery Vas Score | P value |
|------------|-----------------------|-------------------------|---------|
| VAS SCORE | 8.5 (8.0-9.0) | 5.000 (4.0-5.0) | 0.001 |

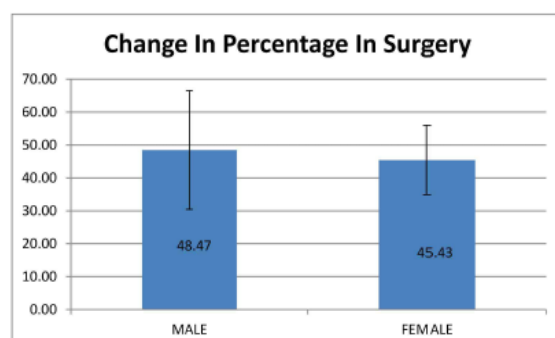
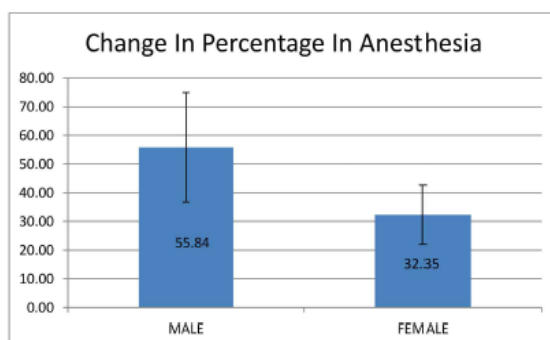
It indicates that that the communication with the patients using anesthesia information sheet has significantly reduced the anxiety in the patients undergoing elective surgeries

In our study among comparison of vas score for the type of anesthesia , there is there is no significant variation in VAS scores as the P value is >0.05.

In our study on comparison of vas scores between males and females, VAS score anxiety pre-operatively and post operatively for anesthesia there is significant variation with a P value< 0.05.

| Variables | Male Mean \pm Sd N= 20 | Female Mean \pm Sd N= 30 | P VALUE |
|------------------------------------|--------------------------------|----------------------------------|---------|
| Change In Percentage In Anesthesia | 55.84 \pm 19.07 | 32.35 \pm 10.33 | 0.001 |
| Change In Percentage In Surgery | 48.47 \pm 18.02 | 45.43 \pm 10.57 | 0.456 |

It concludes that there is significant reduction in anxiety after counseling the patients using anesthesia information sheet.



But P value for anxiety for surgery is 0.05 and hence it is not significant indicating anxiety for surgery hasn't reduced much when compared among males and females

On comparison of heart rate, blood pressure and saturation, there is no much variation in hemodynamics.

| Variables | Mean \pm Std. Deviation | Std. Deviation |
|--|---------------------------|----------------|
| Heart Rate | 84.920 | 7.2135 |
| Spo2 | 98.660 | 1.0022 |
| Age | 42.72 | 16.505 |
| Systolic Blood Pressure | 130.78 | 10.560 |
| Diastolic Blood Pressure | 75.24 | 10.630 |
| Change In Percentage During Anesthesia | 41.7484 | 18.42169 |
| Change In Percentage During Surgery | 46.6476 | 13.94421 |

4. Discussion

Anxiety is an emotion characterized by feeling of fear, dread and uneasiness physical changes like increased heart rate, blood pressure. By pre-operative counselling using either conventional verbal counselling or the newer method-anesthesia information sheet Patient's anxiety was reduced. Counseling of the patients using anesthesia information sheet preoperatively showed a significant reduction in anxiety.

The overall incidence of pre-operative anxiety in our study was VAS -AA (VAS of Anxiety for Anesthesia) pre-operatively was 8.000 with an interquartile range (8.0-9.0), which is comparable to previous studies. Bansal et al. have highlighted in their narrative review that pre-operative anxiety is a neglected issue and doesn't need any specific instruments, technical skills. VAS is brief and simple to assess. It has a minimum respondent burden. These characteristics make it ideal for use in routine practice. VAS-A is a valid tool to measure anxiety.

The most important finding of this study was a reduction in mean scores of VAS-A for anaesthesia (VAS-AA) and surgery (VAS-AS) which was significantly higher in the intervention {VAS-AA pre and post counseling respectively 8.000(8.0-9.0) & 5.000 {4.0-6.0), VAS-AS- 8.5(8.0-9.0) and 5.000(4.0-5.0). This finding correlates with previous studies demonstrating higher pre-operative anxiety amongst females as compared to males as described in the results.

Unfamiliar environment, separation from family, fear of one's life, length of hospital stay, post-operative pain were the points of concern for female patients. Female patients may need additional comprehensive and individualized pre-operative education to reduce anxiety in the pre-operative period. A systematic review and meta-analysis has shown satisfactory results with music therapy for female patients in the reduction of pre-operative anxiety.

It was observed in this study that ASA physical status III patients had higher baseline pre-operative anxiety compared to ASA physical status I and II patients. This may be due to the fear that their comorbidities might increase the risk of surgery and anaesthesia.

It was observed in this study that patients had negative experience during previous surgery had higher pre-operative anxiety compared to patients had no negative experience during previous surgery. This may be due to the same thing will happen this time too. And fear of that, it will increase the risk of surgery and anesthesia.

Anxiety was assessed a day before surgery, before and after counselling using anaesthesia information sheet. Reassessing the patient in the preoperative room, just before shifting the patient to the operation theatre would have given more information about the effectiveness of using

Anaesthesia information sheet. There was no pre-operative assessment by a psychiatrist to exclude the patients who had undiagnosed psychological and cognitive disorders coming to the hospital for the first time.

It should be noted that pre-operative anxiety is a complex multifactorial phenomenon. Use of an information sheet during pre-operative counselling is just one method to reduce it. Determining various causes for pre-operative anxiety and developing multimodal strategies to reduce it should be tried with the intention of assessing synergistic interaction amongst different strategies. This can help to develop an institutional protocol to address the issue of pre-operative anxiety and management for the same.

5. Conclusion

Our Study found that, Pre-operative counselling using anaesthesia information sheet is more effective in reducing pre-operative anxiety for Anesthesia and surgery than conventional counselling in patients undergoing elective surgery. We conclude that Females are more anxious than males in our study. The pre-operative anxiety increases with increase in ASA grading of the patients.

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