

Preoperative Anxiety Analysis in Patients Undergoing Surgeries: A Comparative Study using Preoperative Counselling, Tablet Diazepam 10 Mg and Non-Counselled Patients

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Abstract

Objectives: To compare the anxiety level of patients who have received pre-operative counselling, tablet Diazepam 10 mg previous night of surgery and patients who have neither received any anxiolytic medication nor pre-operative counselling, To monitor preoperative, intraoperative and post-operative pulse rate, blood pressure of study groups, to note the length of hospital, stay of the patient post operatively.

Methods: Three hundred ASA 1/2 patients admitted for elective surgical procedure requiring anesthesia were assigned into one of the three groups. •Group C =Pre-Operative counselling done, •Group D =Tab. Diazepam 10mg HS 1day prior to Surgery. •Group NC= Non-counselled patients.The study group C patients are counselled in respects of the type of anesthesia, operative procedure. The study group D is given tab. Diazepam 10 mg a night prior to surgery. The study group NC is neither given pre-operative counselling nor given tab Diazepam. They are non-counselled group.Data is collected by means of a questionnaire given to the patients in the form of Spielberger' state - Trait Anxiety Inventory scale (STAIS). The patients anxiety levels were measured.

Result: In our study the three groups had high STAIS score before surgery with normal baseline haemodynamic values. Patients who received counselling and tab. Diazepam pre operatively were haemodynamically stable during intra and post operative period and had a low to moderate anxiety score during post operative visit as compared to group NC which neither received pre operative counselling nor tab. Diazepam and had unstable pulse rate, systolic blood pressure, diastolic blood pressureduring intra and post operative period. Their STAIS score after surgery remained high as compared to their pre operative score. Group C and D had mean hospital stay of 4.04 ± 0.65 to 4.75 ± 0.97 days which is less than group NC with mean hospital stay was 6.55 ± 0.67 days.

Conclusion: Lack of information related to possible pre-operation and post-operation conditions increases the anxiety level of patients. This causes intra operative instability in haemodynamic, post-operative emotional problems and thus increase hospital stay. Personal interview and previous night anxiolytic (Tab. Diazepam) are good at alleviating the anxiety throughout the perioperative period. Transfer of knowledge and information through counselling to be more effective in decreasing the anxiety and apprehension. It is more helpful in patients who are illiterate and who do not actively participate in the interview. Hence, a personal interview along with an anxiolytic previous night of surgery is a good option in allaying the anxiety.

This study has critically examined and found that preoperative patient education significantly reduces intra operative haemodynamic instability, postoperative anxiety and length of hospital stay. This study strongly recommends preoperative patient education so as to have better outcome, less morbidity and less healthcare cost.

Keywords: Pre operative anxiety analysis, Pre-operative counselling.

Introduction

Being healthy is defined not only at the absence of disease and disability, but also as a complete wellbeing in terms of physical, social and mental state. The continuity of the inner environment of the human organism is dependent on the individual's physiological and psychological balance. The main objective of health care is to provide maintenance of the state of health, by preserving the continuity of the inner environment and to help in restoring the balance lost in the state of illness.¹¹ People sometimes have to be hospitalized for the maintenance and continuity of their health.^{13,14} The process of hospitalization, regardless of the reason causes different reactions in different people, including adverse reaction such as anxiety, fear and depression.^{13,15}

The unfamiliar operating theatre makes surgery a potentially unpleasant experience causing high level of anxiety in patients.¹⁶ The prevalence of anxiety preoperatively in patients ranges from 11% to 80%.¹⁷ The patient feels anxiety as a result of the physical effects imposed by the disease as well by the change of environment imposed by hospitalization. These factors, which may cause anxiety in the hospitalized individual, include the anxiety of receiving painful treatment, being away from his/her family, losing his/her job, being in an alien environment and encountering unknown devices and procedures. The anxiety of undergoing an operation also feeds into the list of factors and constitutes a significant source of anxiety.²

Anxiety is defined as a state that emerges as a result of a response against threats that may disrupt bodily balance, or a failure in restoring the lost balance.²

Increased anxiety before surgery is associated with pathophysiological responses such as hypertension, dysrhythmias, increased requirements for post-operative analgesia and may cause patients to refuse planned surgery. By providing information about anesthesia patients feel more reassured.³

My objective is to determine whether the pre-operative visit by the anesthesiologist alleviates anxiety. I am comparing the efficacy of preoperative counselling v/s tab. Diazepam 10 mg previous night prior to surgery v/s non counselled patients.

Materials and Methodology

After Institutional Ethics Committee approval, valid informed and written consent is taken from

all the patient. Three hundred ASA grade I and II patients grouped into group C, D and NC.

Inclusion Criteria: Adults aged 18-60 years. Considering the age group to which the inventory scale could be applied and their ability to understand, have good comprehension skills and accepted under American Society of Anesthesiologists (ASA) grade I and II.

Exclusion Criteria

We excluded patients with a previous experience of Anesthesia and surgery, mentally challenged, deaf, mute and blind patients, paediatrics and geriatric age group and patients posted for emergency surgery. The patients were explained regarding the study and assigned into one of the three groups:

- Group C = Pre-Operative counselling done.
- Group D = Tab. Diazepam 10mg HS 1day prior to Surgery.
- Group NC = Non-counselled patients.

The pre anesthetic evaluation is performed one day before the surgery. The study group C patients are counselled in respects of the type of anesthesia, operative procedure. The study group D is given tab. Diazepam 10 mg a night prior to surgery. The study group is neither given pre-operative counselling nor given tab Diazepam. They are non-counselled group. Data is collected by means of a questionnaire given to the patients in the form of Spielberger' state - Trait Anxiety Inventory scale (STAI). The patients anxiety levels were measured.

Instrument

The STAI is a validated and widely used instrument to measure patient's anxiety. The STAI - state (STAI-S) form consist of 01-20 statements and the answers to these are used to determine a patient's current anxiety level. The STAI -Trait (STAI - T) form consists of a different set of 20 statements, and the answers to these are used to determine a patient's undergoing (Ongoing/Personality) anxiety level. Each statement in the STAI - S is rated on a four point scale for the subject's agreements with that statement (not at all, somewhat, moderately so, and very much so). This form is used at all time points of the study for both groups. This form used for each patient on entering the study. The overall score for STAI ranges from a minimum of 20 to maximum of 80. STAI scores are commonly classified as "no or low anxiety (20-37)", "moderate anxiety (38-44) and high anxiety (45-80).⁵

Self-evaluation questionnaire	STAI Form Y-1			
	1	2	3	4
1. I feel calm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I feel secure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I am tense	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I feel strained	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I feel at ease	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I feel upset	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I am presently worrying over possible misfortunes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I feel satisfied	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I feel frightened	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I feel comfortable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I feel self-confident	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I feel nervous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I am jittery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I feel indecisive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I am relaxed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I feel content	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. I am worried	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. I feel confused	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. I feel steady	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. I feel pleasant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1: Not at all, 2: Somewhat, 3: Moderately so, 4: Very much so

Table. 1: Distribution of study population according to groups.

Group	Label	No. of patients
Group - C	Pre-operative Counselling	100
Group - D	Tab. Diazepam 10 mg HS 1 day prior to surgery	100
Group - NC	Non Counselling Patients	100

Table. 2: Comparison of mean STAIS score pre-operatively and post operatively between and within groups.

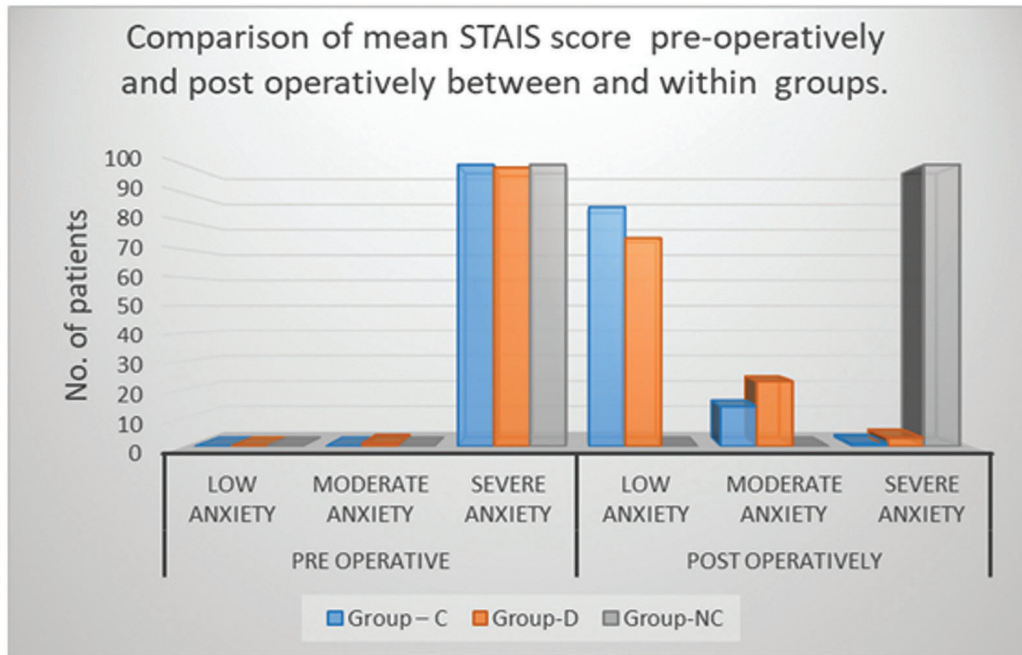
	STAIS	Group - C		Group - D		Group - NC		p-value
		N	%	N	%	N	%	
Pre operative	Low anxiety	0	0	0	0	0	0	p=0.367,NS
	Moderate anxiety	0	0	1	1.00	0	0	
	Severe anxiety	100	100	99	99.00	100	100	
Post operatively	Low anxiety	85	85.00	74	74.00	0	0	p<0.0001,HS
	Moderate anxiety	14	14.00	23	23.00	0	0	
	Severe anxiety	1	1.00	3	3.00	100	100	

Self-evaluation questionnaire	STAI Form Y-2			
	1	2	3	4
21. I feel pleasant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. I feel nervous and restless	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. I feel satisfied with myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. I wish I could be as happy as others seem to be	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. I feel like a failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. I feel rested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. I am "calm, cool, and collected"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. I feel that difficulties are piling up so that I cannot overcome them	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. I worry too much over something that really doesn't matter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. I am happy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. I have disturbing thoughts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. I lack self-confidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. I feel secure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. I make decisions easily	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. I feel inadequate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. I am content	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37. Some unimportant thought runs through my mind and bothers me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. I take disappointments so keenly that I can't put them out of my mind	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. I am a steady person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. I get in a state of tension or turmoil as I think over my recent concerns and interests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1: Almost never, 2: Sometimes, 3: Often, 4: Almost always

Table. 3: Comparison of mean STAIS score pre-operatively and post operatively between and within groups.

STAIS	Group - C		Group - D		Group - NC		F-value	p-value
	Mean	SD	Mean	SD	Mean	SD		
Pre operative	54.96	6.52	57.79	10.26	56.44	6.20	6.01	0.0028,HS
Post operatively	33.64	4.61	34.76	5.47	60.33	5.09	884.42	<0.0001,HS
t-value	29.62		21.7459		12.9175			
p-value	<0.0001,HS		<0.0001,HS		<0.0001,HS			



Result

We found that all the three groups had high STAIS score before surgery with normal baseline haemodynamic values. Patients who received counselling and tab. Diazepam pre operatively were haemodynamically stable during intra and post operative period and had a low to moderate anxiety score during post operative visit as compared to group NC which neither received pre-operative counselling nor tab. Diazepam and had unstable pulse rate, systolic blood pressure, diastolic blood pressure during intra and post operative period. Their STAIS score after surgery remained high as

compared to their pre operative score. Group C and D had mean hospital stay of 4.04 ± 0.65 to 4.75 ± 0.97 days which is less than group NC with mean hospital stay was 6.55 ± 0.67 days.

Statistical Analysis

Pre operatively in group C all subjects have severe anxiety, group D ninety-nine subjects have severe anxiety and one subject has moderate anxiety, group NC all subjects have severe anxiety. As compared to post operatively, group C has 85 subjects with low anxiety, 14 with moderate anxiety and 01 with severe anxiety. Group D has 74 subjects with low

Table. 4: Comparison of mean STAIS sore after surgery among 3 groups.

STAIS	Group - C		Group - D		Group - NC		F-value	p-value
	Mean	SD	Mean	SD	Mean	SD		
Change in STAIS score after surgery	21.32	7.19	24.03	11.05	-3.89	3.01	388.69	<0.0001,HS

Table. 5: Comparison of mean hospital stay in days among 3 groups.

Hospital stay in days	Group - C		Group - D		Group - NC		F-value	p-value
	Mean	SD	Mean	SD	Mean	SD		
Hospital stay in days	4.04	0.65	4.75	0.97	6.55	0.67	277.23	<0.0001,HS

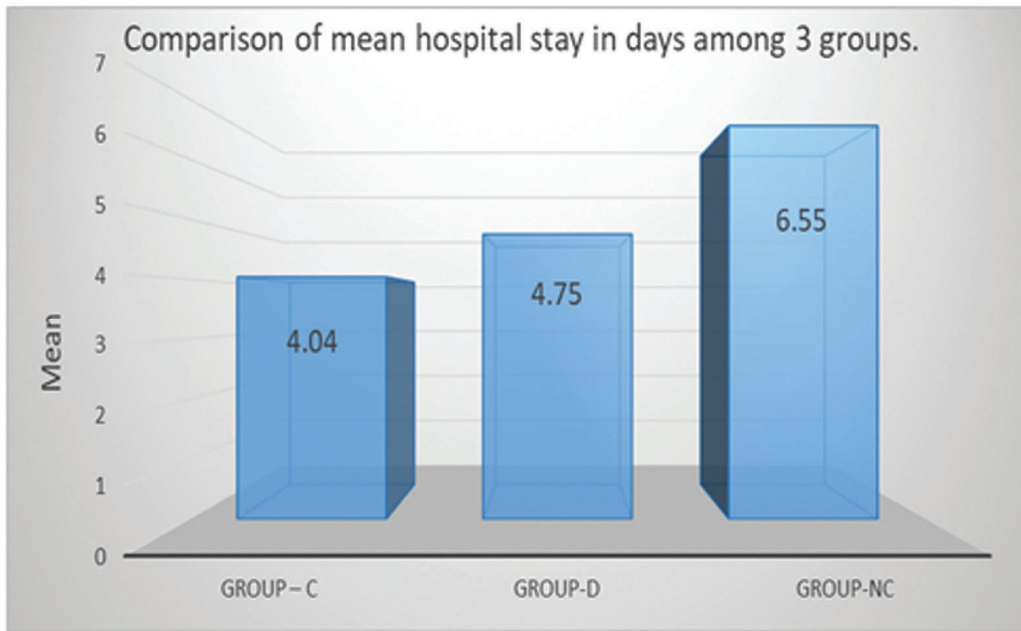
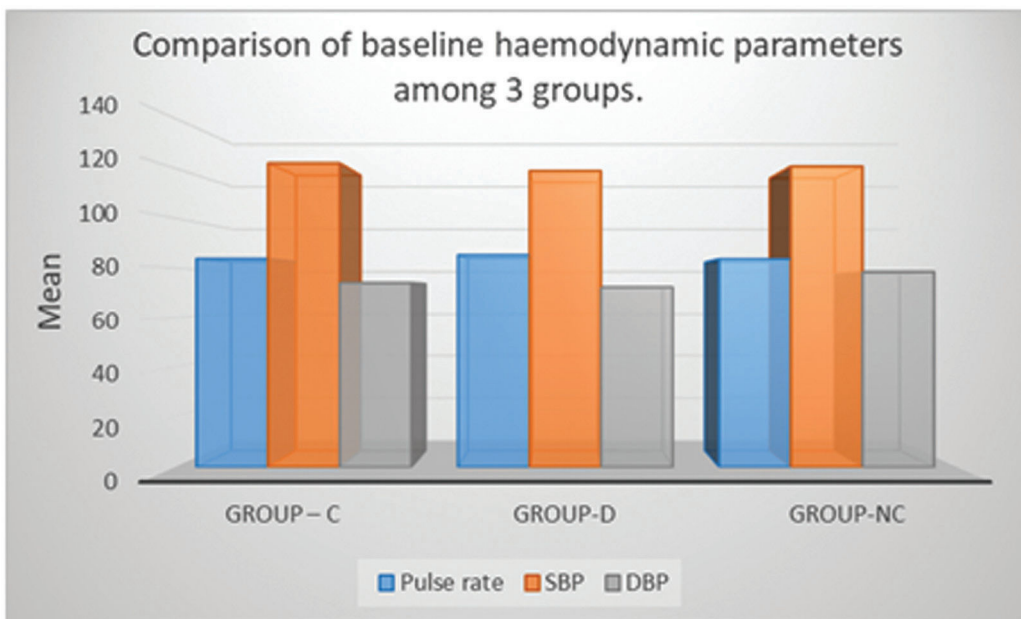


Table 6: Comparison of baseline haemodynamic parameters among 3 groups.

Parameter	Group - C		Group - D		Group - NC		F-value	p-value
	Mean	SD	Mean	SD	Mean	SD		
Pulse rate	83.68	11.65	85.22	10.94	83.58	10.41	0.70	0.4992, NS
SBP	121.80	7.96	118.70	9.91	120.50	7.96	3.23	0.0409, S
DBP	74.1	6.21	72.30	7.08	78.50	8.08	19.79	<0.0001, HS



anxiety, 23 with moderate anxiety and 03 with severe anxiety. In group NC all (100) the subjects have severe anxiety. Pre operative p value is 0.367 which is not significant, post operative p value is < 0.0001 which is highly significant.

Group C and D showed a significant decrease in anxiety after counselling and taking tab. Diazepam previous night of surgery (p<0.0001) which is highly significant and the group NC had not much change in the STAIS score. Post operatively mean STAIS score of group C = 33.64, group D = 34.76, group NC = 60.33, p<0.0001 which is highly significant.

This graph shows the mean value of hospital stay among the 3 groups i.e. in group C = 4.04 ± 0.65, group D = 4.75 ± 0.97, group NC = 6.55 ± 0.67, p<0.0001 which is highly significant. Inference is group C which received counselling had less days

of hospital stay as compared to group D which received tab. Diazepam and group NC which neither received counselling nor tab. Diazepam.

This graph shows the baseline haemodynamic parameters among the 3 groups. The mean pulse rate in group C = 83.68 ± 11.65, group D = 85.22 ± 10.94, group NC = 83.58 ± 10.41 (p = 0.4992, not significant). The mean systolic blood pressure in group C = 121.80 ± 7.96, group D = 118.70 ± 9.91, group NC = 120.50 ± 7.96 (p = 0.0409, significant). The mean diastolic blood pressure in group C = 74.1 ± 6.21, group D = 72.30 ± 7.08, group NC = 78.50 ± 8.08 (p < 0.0001, highly significant). Inference there is not much fluctuation in baseline pulse rate among the 3 groups but there is change in systolic and diastolic blood pressure among the 3 groups which is significant.

Table. 7: Comparison of mean pulse rate among 3 groups at different time periods.

Time	Group - C		Group - D		Group - NC		F-value	p-value
	Mean	SD	Mean	SD	Mean	SD		
Baseline	83.68	11.65	85.22	10.94	83.58	10.41	0.70	0.4992,NS
Before intubation	94.84	11.17	94.46	8.91	97.72	7.81	3.59	0.0287,S
After 2 min intubation	104.08	11.30	91.80	9.95	109.44	7.30	87.46	<0.0001,HS
After 5 min intubation	106.06	8.95	97.96	9.51	114.48	7.21	91.90	<0.0001,HS
After 10 min intubation	106.76	7.57	102.64	8.60	117.64	7.93	92.67	<0.0001,HS
After 20 min intubation	104.16	7.01	100.80	7.84	120.60	7.93	183.39	<0.0001,HS
After 30 min intubation	101.20	7.63	96.84	7.85	123.96	9.70	297.10	<0.0001,HS
Post operatively	120.40	6.01	118.14	7.57	134.54	6.35	176.88	<0.0001,HS

Table. 8: Comparison of mean Systolic Blood Pressure among 3 groups at different time periods.

Time	Group - C		Group - D		Group - NC		F-value	p-value
	Mean	SD	Mean	SD	Mean	SD		
Baseline	121.80	7.96	118.70	9.91	120.50	7.96	3.23	0.0409,S
Before intubation	124.80	8.10	115.90	8.17	130.10	6.88	85.85	<0.0001,HS
After 2 min intubation	129.80	9.42	120.60	7.89	134.30	8.34	65.80	<0.0001,HS
After 5 min intubation	125.56	7.80	122.20	10.00	134.70	8.46	53.93	<0.0001,HS
After 10 min intubation	119.4	7.49	122.50	10.48	133.20	9.41	61.75	<0.0001,HS
After 20 min intubation	116.62	7.93	120.40	8.15	133.50	8.80	113.75	<0.0001,HS
After 30 min intubation	115.50	6.87	115.70	6.23	138	5.86	416.55	<0.0001,HS
Post operatively	130	5.86	130.28	5.90	148.5	7.96	254.19	<0.0001,HS

Mean baseline pulse rate of all the study groups are more or less same. Before intubation the mean pulse rate increases in group NC (97.72 ± 7.81) as compare to group C (94.84 ± 11.17) and group D (94.46 ± 8.91) $p = 0.0287$ which is significant. After 2 minutes of intubation mean pulse rate increases from its baseline value in group NC (109.44 ± 7.30) as compared to group C and D. After 5 minutes of intubation the mean pulse rate further increases in group NC (114.48 ± 7.21) as compared to group C and D. After 10,20,30 minutes of intubation the mean pulse rate is high in group NC as compared to group C and D, which means there is significant deflection in the mean pulse rate after intubation from its baseline in group NC as compared to group C and D. Post operatively the pulse rate is high in group NC as compared to group C and D, which shows that patients who received counselling in group C and tab. Diazepam in group D has almost stable pulse rate in intra operative period as compared to group NC which has a high margin of fluctuation in pulse rate intra operatively.

In group NC, after intubation to post operative period the blood pressure (systolic) showed significant rise which is highly significant as compared to group C and D.

In group NC, after intubation to post operative period the blood pressure (diastolic) showed significant rise which is highly significant as compared to group C and D.

Discussion

An anesthesiologist has a vital role to play by prescribing an adequate and appropriate premedication to make the patient quiet, restful, calm and mentally prepared for an uneventful

surgery. High levels of preoperative fear and anxiety correlate with various unfavourable outcomes, including increases in postoperative analgesic requirements, prolonged post-anesthesia care unit or hospital stays, and delayed negative psychological effects.²⁴

In view of the high incidence and associated adverse outcomes in some patient's groups, pharmacological (i.e., premedication) or psychological (counselling) steps may be considered.²⁴ Benzodiazepines are extensively used as oral premedication as they present the advantage of avoiding painful intravenous or intramuscular injections. They differ in their ability to relieve primary or secondary (e.g., situational) anxiety, act as anticonvulsants, provide muscle relaxation, and induce sedation.²⁴

The value of pre-operative visit by the anesthetist hardly needs monitoring. Benzodiazepines are now used mainly for treating acute anxiety states, behavioural emergencies and during procedures. They are also used as premedication before surgery (both medical and dental). Under these circumstances their anxiolytic, sedative and amnesic properties may be beneficial. Intravenous midazolam can be used to induce anesthesia. The main reasons for using sedative hypnotic premedication were allaying anxiety and providing sedation.²⁵

In order to avoid unnecessary anxiety, it is advisable that the patient who is to undergo surgery does not fear the upcoming procedure. The anesthesiologist's attention can greatly reduce anxiety even without using medicines.²⁶ It is important to also consider that there might be some consideration as to how detailed the information

Table. 9: Comparison of mean diastolic Blood Pressure among 3 groups at different time periods.

Time	Group - C		Group - D		Group - NC		F-value	p-value
	Mean	SD	Mean	SD	Mean	SD		
Baseline	71.4	6.21	72.30	7.08	78.5	8.08	19.79	<0.0001,HS
Before intubation	80.6	8.38	70.8	4.85	87.9	5.37	179.83	<0.0001,HS
After 2 min intubation	83.3	7.79	74.10	6.52	88.8	6.07	117.99	<0.0001,HS
After 5 min intubation	77.5	6.87	75.7	8.19	89.3	7.68	94.36	<0.0001,HS
After 10 min intubation	71.4	6.19	75.9	8.29	88.7	6.13	116.69	<0.0001,HS
After 20 min intubation	69.98	4.85	75.2	7.45	89.7	6.58	255.84	<0.0001,HS
After 30 min intubation	71.20	4.98	72.0	5.68	91.6	5.81	440.53	<0.0001,HS
Post operatively	85.4	5.20	83.4	6.69	94.1	4.94	100.68	<0.0001,HS

should be that is given to the patient. In a British study, 82% of patients who underwent surgery had expressed their desire to know more about the surgical procedure prior to surgery. In addition, the most desired piece of information was the estimated length of stay in the hospital.²⁷ In a Danish study, patients asked more about pain, anesthesia duration, and risk of impairment of daily activities and less about sedatives or complications.²⁸

Classic works by Hayward (1975) and Boore (1978)¹⁷:

Demonstrated the benefits of preoperative patient education in the reduction of postoperative pain, stress, anxiety and infection.¹⁷

In this study, all the patients of group C were counselled in detail about the operative procedure which was going to be performed, the type of anesthesia to be given with its procedure, the type of pain patient may feel after surgery and about the complications of surgery if occurred.

In this study, the mean state anxiety score after surgery in group C was 33.64 ± 4.61 , which was significantly less ($P < 0.0001$ HS) as compare to group NC (non counselled) which had mean state anxiety score of 60.33 ± 5.09 ($P < 0.0001$ HS). And as compare to group D (Tab. Diazepam) which had mean state anxiety score of 34.76 ± 5.47 ($P < 0.0001$ HS).

In research carried out by Akkaş¹⁸, he found that education given to patients in preoperative period was found to reduce their anxiety level.

In another study by Asililoglu and Celik¹⁹ on the effect of pre-operative education on anxiety in open surgery patients, the anxiety level of the educated group was lower than the control group which was in accordance with this study.

Sjoling et al.²⁰ investigated the "effect of pre-operation information on anxiety level, post-operative pain and pain control satisfaction in patients with total knee arthroplasty". Lower scores of VAS values were recorded in all of the education groups compared to the control group, thus demonstrated that the experiment group reported less pain compared to the control group.

In a study by Karayurt²¹, which investigated the "effect of different pre-operative education programs on the anxiety and pain levels of patients", the patients in the group that had received routine care reported the highest level of pain. Pain levels were lowest in the group that had received education which was in accordance with

this study.

Giraudet-Le Quintrec et al compared the impact of a collective multidisciplinary standardized information session with that of the usual verbal information on pre-operative and postoperative anxiety of patients scheduled for total hip arthroplasty. The intervention group was significantly less anxious preoperatively ($P = 0.01$), experienced significantly less pain postoperatively ($P = 0.04$) and stood sooner ($P = 0.07$) than the control group. The findings support attending an educational programme, as it reduced preoperative anxiety, and better prepared the patients to cope with postoperative pain.

In this study the mean length of hospital stay in the study group C was 4.04 ± 0.65 as compared to group NC which was 6.55 ± 0.67 , group D which was 4.75 ± 0.97 , this was found to be statistically highly significant ($P < 0.0001$ HS).

Spalding compared a group of patients who had attended a preoperative education programme with a control group who had not. The results showed that the experimental group had a mean of 4 days less hospitalization than the control group which was in accordance with this study. Engelman RM mentioned the role of preoperative education of the patient on early discharge from the hospital.²²

Aysegul Bayrak et al. J Coll Physicians Surg Pak. 2019 Sep. did a study on effects of preoperative anxiety on intraoperative hemodynamic and found that preoperative anxiety causes hemodynamic problems in the intraoperative period, increased analgesic needs and lower postoperative satisfaction of the patients in the postoperative period. It would be better to dispel the preoperative anxiety by counselling patient regarding anesthesia and surgery.

In this study the mean baseline pulse rate in group C 83.68 ± 11.65 , group D 85.22 ± 10.94 , group NC 83.58 ± 10.41 ($P = 0.4992$ NS), before intubation P value is 0.0287 which is significant, after 2 min. of intubation, 5 min, 10 min, 20 min, 30 min and post operatively $P < 0.0001$ which is highly significant. That means baseline pulse rate is almost same in all the study groups but before intubation the mean pulse rate in group NC is 97.72 ± 7.81 which is higher than group C and D Inference is non counselled patients had higher pulse rate before intubation from their baseline value and after 2 min, 5 min, 10 min, 20 min, 30 min of intubation and post operatively mean pulse rate of group NC is 109.44 ± 7.30 , 114.48 ± 7.21 , 117.64 ± 7.93 , 120.60

± 7.93 , 123.96 ± 9.70 , 134.54 ± 6.35 which is also higher than group C and D. Inference is patients who received pre operative counselling and tab. Diazepam had stable pulse rate intra operative and post operatively as compared to group NC where patients were not counselled before surgery and had unstable pulse rate intra operatively and post operatively. The findings are same with systolic blood pressure and diastolic blood pressure.

Conclusion: Lack of information related to possible pre-operation and post-operation conditions increases the anxiety level of patients. This causes intra operative instability in haemodynamic, post-operative emotional problems and thus increase hospital stay. Personal interview and previous night anxiolytic (Tab. Diazepam) are good at alleviating the anxiety throughout the perioperative period. Transfer of knowledge and information through counselling to be more effective in decreasing the anxiety and apprehension. It is more helpful in patients who are illiterate and who do not actively participate in the interview. Hence, a personal interview along with an anxiolytic previous night of surgery is a good option in allaying the anxiety.

This study has critically examined and found that preoperative patient education significantly reduces intra operative haemodynamic instability, postoperative anxiety and length of hospital stay. This study strongly recommends preoperative patient education so as to have better outcome, less morbidity and less healthcare cost.

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