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IMPACT OF PRE ANESTHESIA COUNSELING ON PATIENT ANXIETY BEFORE SCHEDULED SURGERY

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ABSTRACT

Pre-operative anxiety is one of the major concerns among patients scheduled for elective surgery. It has drastic impact on patient hemodynamics, analgesics requirements, and anesthesia as well as on the surgery. Pre-operative anxiety mainly occurs due to lack of education and uncertainty. The study aims to assess the impact of counseling in reducing patient pre-operative anxiety levels and to ensure patient counseling in pre-operative anesthesia visit.

In this cross-sectional interventional study 196 patients were included, scheduled for elective surgeries and were assessed by using the State-Trait Anxiety Inventory (STAI), the raw scores obtained were converted to their respective T scores as per normative scoring. Individuals aged between 18 to 60, ASA I, ASA II and those presented for elective surgeries were included, excluding ones with cognitive dysfunction, refusal. Data was analyzed utilizing Paired T test for assessing the impact and mean score difference after counseling. Chi square was implemented to assess association of demographics with alleviation of anxiety.

According to this study mean value of normative score for state anxiety after counseling was 13.62±2.78 while for trait anxiety, it was 15.12 ±4.81 result, with mean difference, 7.56±2.11 for state, and 1.46 ± 1.80 for trait Anxiety, as per normative scores before and after counseling suggested that state anxiety has improved in majority (87.75%), while trait was only improved in 3.57% patients. The results were highly significant as per paired T test with p-value of < 0.001 for both trait and state mean score differences indicating the counseling has alleviated anxiety of the patients and normative scores have dropped greatly, decreasing patients' stat anxiety more compared to trait anxiety.

It was concluded that the counseling adopted in this study has greater impact in reducing state anxiety as compared to trait anxiety, as this counseling only provided education information relieves uncertainty among the patients in their current state

Key Words: Educational Counseling, Preoperative Visits, Preoperative Counseling, Stat Anxiety, Trait Anxiety, STAI Scale

Introduction:

Anxiety is "a transitory emotional condition consisting of feelings of tension, apprehension, nervousness, fear and high autonomic nervous system activity"(1) It is one of prominent set back that patients feel and impact the procedure for anesthesia. This has also impacted on the outcome of surgery as well as the satisfaction of patients about care services. This psychological state before surgery is because of the

uncertainty, lack of education about the anesthetic procedure, certain negative perception traits including pain perception, possible delayed recovery of the inflicted surgical wound (2). Anxiety is classified as "State anxiety and trait anxiety". State anxiety is "a transient situational based anxiety, marked by increased physiological arousal, cognitive worry and behavioral avoidance in response to specific situation". While the trait anxiety refers to a relatively stable and persistent pattern of anxiety which is not limited to specific situation or event but rather is general tendency to experience anxiety in various aspects of life.(3)

Pre-operative anxiety has a major impact in fluctuating hemodynamics parameters of the patient such as mean arterial pressure (MAP) and heart rate. It also leads to increase the requirement of the anesthetic agent for induction and maintenance intra-operatively(4). Mostly pre–operative anxiety has been reduced by the employment of the pharmacological intervention such as by the administration of anxiolytic drugs such as midazolam and benzodiazepine (5). While pharmacological Anxiolytics are the most effective, advised by many health care providers. However, researchers have proposed comparing pharmacological treatment with non-pharmacological approach in order to minimize the dose of certain medications and to avoid their adverse effects (6).

It has been studied that anxiety is influenced by different factors, for example patient age, gender, the procedure, the surgical briefing, the kind of anesthesia recommended for the surgical procedure and the patient past exposure experience with the anesthesia. Pre-operative increased anxiety level can also lead to postponement of the surgery due to several effects, for example increased risk of nausea and vomiting, increased sympathetic system activation. All these leads to increase hospital stay and increased risk to acquired hospital-based anxiety and depression (7).

It has great influence on post- operative pain intensity, anesthesia and analgesics requirements. It has also been seen that pre-operative anxiety can lead to patient morbidity and mortality during post- operative period. As it impacts the overall anesthetic management and surgical results through post –operative pain, nausea, vomiting, delayed wound healing, delayed awakening and post -operative cardiac episodes (8). A cross-sectional study was conducted in order to find out that pre -operative anxiety required greater doses of the anesthetic agent intra operatively. In this regard, 57 women Both State and trait anxiety was assessed preoperatively who was undergoing bilateral laparoscopic tubal ligation using Propofol as induction agent. The results showed that women with increased trait anxiety required larger doses of the anesthetic agent (9)

Therefore, for the assessment of anxiety different measures or scales have been established to assess patient anxiety preoperatively. Different scales which are most often used for this purpose are Visual analog scale (VAS), Amsterdam pre -operative anxiety and information scale (APAIS), State Trait anxiety inventory scale (STAI) and Hospital anxiety and Depression scale (HADs). While Skin conductance, heart rate, blood pressure, and other indirect measures of sympathetic adrenal activity are examples of objective estimation where plasma cortisol and for more accurate assessment of this activity, urine catecholamine's have been employed (10)

Research suggests that pre educating patients about Anesthesia and surgical procedures can alleviate anxiety yet the optimal method and effective approach to providing this information to the patient remains a topic of debate. Video based educational interventions can significantly be a valuable tool in decreasing anxiety levels. A study was performed at the Queen Medical Centre (Nottingham) during November 2007 to July 2008. The results of this research indicate that watching films or video graphic information have played critical roles in decreasing anxiety levels in the intervention group compared to control groups (11).

Therefore, in this study we aimed to ensure pre-operative counselling in pre-operative anesthesia visit and to reduce patient anxiety, fear and negative psychomotor traits regarding anesthesia by using non pharmacology approach

Objective:

To assess the impact of preoperative counseling on patient anxiety levels during surgery

Material & Methods:

This study was carried out at District Headquarter Hospital KDA Kohat. The hospital receives large number of patients from surrounding area making it more ideal for conducting research. This hospital includes various departments like E.N.T, Orthopedic, Gastro, Urology etc. DHQ Hospital is one the largest and prestigious Hospital in Kohat, which serves a diverse population from south region of KPK. This research was conducted from September 2024 to November 2024.

This study employed cross sectional interventional study design to explore the impact of preoperative Anesthesia counseling on patients' anxiety before a scheduled surgery. In this research we assess counselling effect on anxiety level.

We included adult patients aged 18 to 60, who gave informed consent, underwent elective surgery with general anesthesia or spinal anesthesia and have strong communication skills excluding patients with psychiatric disorder who are unable to communicate, Patients with cognitive dysfunction and emergency surgery patients on psychiatric drugs. Non-probability convenience sampling technique was used in this study. We included 196 individuals in our study as our sample size calculated as per WHO EPI formula for sample size n= (z2 * [p (1-p)] / E E=Margin of Error, n=sample size, z= Z-score, p=Estimated population proportion, with confidence level of 95% and margin of error 5%, and for significance the alpha value was kept to be 0.05.

Data Collection and Analysis Procedure:

After obtaining ethical approval from the DHQ Hospital KDA Kohat. Patients who met the inclusion criteria were approached for our study; informed consent was taken from each respondent. State trait anxiety inventory (STAI) test scale was used to obtain scores from each participant after admitted in the wards. A counselling session of 5 to 10 minutes was conducted which included self-introduction, introduction of the patient, explaining the anesthesia plan to the patient, discussion of the possible risk and benefits of the procedure with patients, asking about their most feared concerns about anesthesia, addressing patient concerns about anesthesia plan and misconceptions, and providing relevant information for addressing their concerns

After counselling a second state trait anxiety inventory score was taken from the patients. Relevant information was only obtained for required follow up after implementation of counseling manual, upon doing so, the identification data was discarded

Data was analyzed by using descriptive statistics for continuing independent demographic variables. Binary categorical variable was created for both trait and state anxiety, which had two categories of “improvement” and “non-improvement” in anxiety score. Scores reduction of 6 (six) in T-scores for both trait and state anxiety was taken as cut of point as per STAI Y1 and Y2 Manuals, using normative and Reliable Change Index (RCI), which provides cut of points for STAI reduction, considered as significant clinical improvement or worsening. All the demographics were assessed for association (Chi Square) with anxiety reduction with Paired T tests were used to assess the impact of counseling technique to assess reduction of anxiety and compare the mean scores of anxiety levels both before counseling and after counseling for trait as well as stat anxiety

Ethical Approval

As there is intervention involved which is to provide psychotherapy or educational counseling to all the participants as per inclusion criteria after the initial evaluation of their Anxiety based on STAI scale, this was done after obtaining ethical approval from both parent institution and study setting of DHQ Hospital Kohat. There was no harm done to the patient as the intervention was nonpharmacological. Respect for autonomy and confidentiality was maintained.

Result:

Total sample size was 196, of which the mean was 38.81 and standard deviation of 14.09 years. All the Patient were categorized into 5 groups or class intervals as per their ages. Patients of age 19-27 years were n= 55 (28.06%), those of age between 28-36 years were n=44 (22.44%). There were n=25 (12.75%) of age group between 37 to 45 years while those of age group of 46 to 54 years were n=31 (15.81%), and lastly those of

ages between 55 to 60 Years were n=41 (20.91%). Of total sample size, male accounts for 101 which contributed 51.5% in total while female accounts for 95 that is 48.5%. Education level has also been recorded in which 79 of them were educated with proportion of 40.3% while 117 patients were uneducated with proportion of 59.7% in total sample

Majority of patients, accounting for 163 with proportion of 83.2% were presented for general surgeries, other Patients were presenting at the hospital for urology, ENT and orthopedic procedures accounting for 6 (3.1%),12 (6.1%) and 15 (7.7%) respectively. Patients who underwent general anesthesia accounted for 150 (76.5%) while those who received spinal anesthesia were 46(23.0%) (Table 1)

Table 1: Descriptive Statistics of demographic variables

VARIABLES	ITEMS	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY
AGE GROUPS	19 to 27	55	28.06	55
	28 to 36	44	22.44	99
	37 to 45	25	12.75	124
	46 to 54	31	15.81	155
	55 to 60	41	20.91	196
GENDER	Male	101	51.5	101
	Female	95	48.5	196
EDUCATION	Educated	79	40.3	79
	Uneducated	117	59.7	196
SURGERY TYPE	General surgery	163	83.2	163
	Urology	6	3.1	169
	ENT	12	6.1	181
	Orthopedic	15	7.7	196
ANESTHESIA TYPE	General anesthesia	150	76.5	76.5
	Spinal anesthesia	46	23.0	99.5

The raw scores of the stat trait anxiety inventory were converted to corresponding T scores as per normative scoring of STAI Y1 and Y2 forms via formula.... utilizing STAI Y2 and Y1 manual and T Score table. All participants' T scores for State and trait anxiety were recorded before and after their counseling. Where mean T score before counseling for state anxiety recorded was 21.16 ± 3.07, with minimum score recorded was 14 and maximum was 28. The greater scores indicated severity of anxiety. Total scores were grouped in 4 class intervals, which yielded n=17 (8.67%) of patients with minimum t Scores of ranges 14 to 17, total of 107 (54.59%) were recorded with scores of 18 to 21, other n=53 (27.00%) and n=19 (9.69%) were having scores of 22 to 25 and 26 to 28 respectively. In detail a greater proportion of 91.28% of patients among the sample were having moderate to severe state anxiety as was recorded before counseling.

T score of state anxiety after counseling was then recorded with 9 patients having T score from 6 to 9, while 96 patients have T score range from 10 to 13. Apart from that, 66 patients with 14 to 17 T score and 44 patients with T score from 18 to 21 (Table 2)

Table 2: State Anxiety Score before & After counselling.

PRE COUNSELLING	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY
14 TO 17	17	8.67	17
18 TO 21	107	54.59	124
22 TO 25	53	27.00	177
26 TO 28	19	9.69	196
POST COUNSELLING	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY
6 TO 9	9	4.59	9
10 TO 13	96	50.51	105
14 TO 17	66	33.67	171
18 TO 21	25	12.75	196

T score before counseling for trait anxiety was recorded with mean scores of 16.58 ±5.022, where minimum score recorded was 6 and maximum was 30.Total score were grouped in 4 different class intervals which accounts n=42(21.42%) of minimum score range between 16 to 12,total of 99(50.51%)were recorded with T scores of trait anxiety range between 13 to 19,other n=50(25.51%) and n=5(2.55%) were recorded with T score of 20 to 26 and 27 to 30 respectively

T score of trait anxiety after counseling was recorded and scores in total were categorized into 4 different class intervals. In total, 35 patients had T scores of 4 to 10, while 100patients had T score of 11 to 17, remaining 57 patients has T scores of 18 to 24 while only 4 patients were reported with T score of 25 to 30. State anxiety scores before and after counseling were compared which recorded to be improved in 172 patients while not improved cases were 24 patients, contributing proportion of 12.2% state anxiety cases. Trait anxiety score was improved in 8 patients while 188 (95.9%) patients showed no improvement (Table 3)

Table 3: Trait Anxiety Score Before & After Counselling

BEFORE COUNSELLING	FREQUENCY	PERCENT	CUMULATIVE PERCENT
6 TO 12	42	21.42	42
13 TO 19	99	50.51	141
20 TO 26	50	25.51	191
27 TO 30	5	2.55	196
AFTER COUNSELING	FREQUENCY	PERCENT	CUMULATIVE PERCENT
4 TO 10	35	17.87	35
11 TO 17	100	51.02	135
18 TO 24	57	29.08	192
25 TO 30	4	2.04	196

State anxiety scores before and after counseling were compared which recorded to be improved in 172 patients while not improved cases were 24 patients, contributing proportion of 12.2% state anxiety cases. Trait anxiety score was improved in 8 patients while 188 (95.9%) patients showed no improvement (Table 4)

Table 4: State Improvement Score

IMPROVEMENT STATUS	STAT ANXIETY		TRAIT ANXIETY	
	Frequency	Percent	Frequency	PERCENT
IMPROVED	172	87.8	8	4.1
NO IMPROVED	24	12.2	188	95.9
TOTAL	196	100.0	196	100.0

Paired T test was implemented for comparing mean scores of both stat and trait anxiety before and after counseling, which resulted in minimum positive change in trait anxiety and maximum positive change was observed in stat anxiety. The mean scores for stat anxiety before counseling was 21.18 with SD of 3.071, compared to this the mean score after counseling for trait anxiety was 13.62 with SD and Margin of error of 2.783 which indicates a greater drop in the scores as of effective counseling. The mean difference observed was much greater for state anxiety after counseling with mean difference of 7.561±2.108, although the mean difference for trait anxiety was not much higher rather least change was observed in trait anxiety scores after counseling with mean difference of 1.459±1.807. Both results were highly significant as the p value was <0.001 that is much less than Alpha level of 0.05 at confidence level of 95%, indicating high affectivity of counseling on stat anxiety scores as compared to the scores of Traits anxiety

Table 5: Paired T Statistics.

Paired T test		Mean	SD	Std. Error Mean	Mean Difference	Mean SD	t Value	Sig. 2 Tailed
Pair 1	T Score for trait Before Counseling	16.58	5.022	.359	1.459	1.807	11.306	<0.001
	T score for trait anxiety After Counseling	15.12	4.813	.344				
Pair 2	T score state before counselling	21.18	3.071	.219	7.561	2.108	50.224	<0.001
	T score State after counselling	13.62	2.783	.199				

Discussion:

Anxiety is one of the most common well-known complications before surgery. Different methods are used in reducing preoperative anxiety which includes pharmacological and non- pharmacological approaches. Multiple studies have been done in this regard to increase patient satisfaction level regarding anesthesia and for their smooth recovery. In the current study 196 sample was included with a mean age of 38.81, standard deviation of 14.09. Individuals age range between 18 to 60 years. A previous study conducted in tertiary hospital, Karachi showed close relation with current study. Patient's anxiety frequency was assessed by using APAIS in 400 individuals across 6 different surgical units with mean age of 39.75 and standard deviation of 15.27, comparatively higher than present study. A study was carried out in which adults were assessed by utilizing STAI for preoperative anxiety. Its main finding indicated inverse relation with age that is as anxiety decreases with increased age (p<0.001) Therefore result of this study shows significant relation between age and anxiety (12). A study was conducted in tertiary care hospital Karachi, APAIS score showed higher anxiety in female related to surgery (mean =7.27±2.31) as compared to male. Significant associations were found between surgery procedure (p<0.001). Patients underwent ENT and Urology suffered with greater anxiety 75% and 68% respectively where the present surgery have no such correlation with type of surgeries (27). A study was performed in elective caesarean section surgery in which 157 participants underwent general anesthesia their anxiety level was (97.2%) as opposed to regional anesthesia (51.8%) with (p<0.001) while applying VAS scale. Finding evaluate that anxiety level regarding general anesthesia was higher as contrasted to regional anesthesia in current

research there was no such correlation with anesthesia types (13).

In current study, patient's anxiety was assessed by utilizing STAI scale pre and post counselling. The results indicated that counselling played a significant role in reducing patients state anxiety in 172 while no improvement was observed in 24 patients, on the other hand counselling was not much effective on trait anxiety in total sample only 7 participant trait anxiety was improved.

In previous study two groups were formed: Group I (counselling) and Group II (Routine Information). Research concluded that average score for anxiety before counselling of group I was 44.11% that was significantly reduced after counselling 29.78% while in group II result estimated are less affectivity (23.92) (25) A prospective cohort study was conducted between May 2016 to2017. Total 637 patients were studied. They found that the score of university graduates have higher significance with anesthesia as compared to primary school graduates (p=0.003) and secondary school graduates (p=0.034) (7) while the current study showed no significance association of anesthesia with educational level.

Patient data was recorded across different surgical units, general surgery, urology, ENT and orthopedics. Larger portion of the sample presented for general surgery (83.2%), while for urology, ENT and orthopedics it is 3.5%, 7.0%,7.6% respectively .Chi square test gives p =0.429 which is less than 0.05 for state anxiety improvement while for trait anxiety improvement p=0.309% It shows that no affiliation exists between type of surgery and counseling (7). Further extensive study is required with increased sample and inclusion of multiple surgical and anesthesia suits be included and education counseling manual be introduced for generalizability of the research and assessment of positive predictive value in alleviating anxiety of the patients.

Recommendations & Limitations

In this research it concluded that manual counselling has significant effect on state anxiety rather than trait anxiety. It is recommended that counselling manual should be utilized preoperatively in pre-anesthesia visits to alleviate state anxiety. Though trait anxiety is a concerning parameter which is to be addressed at broader level via recommendation of psychiatric session and psychotherapy for longer terms as this study has utilized educational manual which only addresses certain parameters that are relevant to current turn of events that is surgery and anesthesia and uncertainties of outcomes. It has been found that counseling significantly reduced patient state anxiety level in pre-operative periods there was no improvement in patients' trait anxiety levels.

Further research is to be done in this area where surgical population at risk of anxiety are to be addressed from the start of first visit for an elective surgery so that trait anxiety can also be alleviated before pre anesthesia phases and a structured counseling be developed via pilot study which may help in decreasing trait and stat anxiety of the patient in short time.

Conclusion:

In this study it was concluded that preoperative anesthesia visits for assessing patient status and anxiety, and providing educational counseling regarding the procedures and possible outcomes helps in alleviation of stat anxiety that is related to current situation of the patient for example related to surgery and anesthesia they would receive. Though this method of counseling has little effect on patients trait anxiety as those may require extensive study and more session of psychotherapy to improve patient care, outcome and quality.

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