Original Article

Pre-operative anxiety in patients undergoing different types of surgery Comparative study

Abdul-Rasoul Al-Yasiri*, MRCPsych. , DPM.

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Summary

Background: Major life changes are among many factors that cause emotional arousal and anxiety ,and one of these changes is surgery. emotional reactions to surgery have specific effects on the intensity and velocity as well as the process of physical disease and on the general state of wellbeing of the patient.

Aims: This study is aimed at determining the relationship between the nature, extent and severity of preoperative anxiety and different types of surgery.

Methods: 150 patients 84 males 68 females awaiting different types of surgery at Al-Kindy teaching hospital at the period from 1st January to 1stJuly 2008 were assessed for a clinically detected preoperative anxiety in relation to different variable including sex, age, type of surgery ,severity and the main fears related to the operation. Using general health questionnaires (GHQs) followed by semi-structured interview based on DSM-IV classification, and then mental state examination.

Results: The study indicated that preoperative anxiety is common and is more in females, more in patients in their thirties and forties,it is in excess and is more sever in cardio-thoracic and gastro-intestinal tract surgery and is at its lowest level and severity in ophthalmology and ENT surgery. so also the fear of death is associated more with cardio-thoracic and GIT surgery. Females had more anxiety in all types of surgery except cardio-thoracic surgery which is more in males.

Conclusions: Prevalence of Preoperative anxiety is high and represents over 2/3 of the sample and is more in rate and severity in surgery with uncertain outcome or being considered as more risky by patients.

Recommendations: The need for further studies on the effects of this anxiety on the post operative course and outcome, and the need for the training of paramedical staff in surgical wards on preoperative anxiety and ways of its intervention.

Key words: preoperative anxiety, different surgeries.

Introduction :

Anxiety is a widely used term. it is usually defined as worries or fears with no external stimulus or fear with no adequate reason. it has different meaning or applications. it may indicate a symptom of a psychiatric or physical disorder, or it may be a psychiatric disorder on its own, and here we refer to as general anxiety disorder-GAD. it may be present in a mild and continuous degree as an anxiety personality trait. or it may be limited to certain situations or distressing life events. and this last meaning is applicable to the current study. Anxiety is usually presented with psychological or physical clinical features or both. the psychological features include-apprehension, irritability, tension, feeling un-relaxed,
psychological oversensitivity, psychological arousal with insomnia and hyper vigilance. while the physical features- include-autonomic nervous system hyper arousal with palpitation, tachycardia, shortness of breath, tightness of the chest, dryness of mouth ,tremors, fatigability exaggerated reflexes, dilated pupils and so on.(1) The rate and extent of symptoms are related to the severity of the anxiety.
Impending surgery is a stressful event that triggers specific emotional, cognitive and Physiological responses of the patient.(2,3)The amount of the stress experienced is usually measured by the level of anxiety reported by the patient and several studies have in deed shown increased anxiety scores in pre-surgical patients.(4-6) it has been reported that the amount of such anxiety depends on gender (7.8),age.(8.9) and the motives for surgery-(4) In the view of this increasing rate of preoperative anxiety(POA), there is growing interest in the possible influences of this anxiety on the course and outcomes of surgical treatment as well as in the study of anxiety reducing interventions (10),most surgeons postpone operations in cases with high anxiety. (11)The aim of this study is to determine the extent and severity of pre-operative anxiety in relation to different surgeries. and to a variety of characteristics of patients and in turn to provide a data base for future studies on the effect of POA on postoperative course and the level of emotional distress after surgery and also to help in the improvement of the intervention measures of POA.

Methods and patients

All patients who were scheduled to have non-emergency surgical operations of different types at Al-Kindy teaching hospital during the period from 1st January to 1st July 2008 were considered for inclusion in
this study. A total of 150 patients, 82 males and 68 females were included.
written consent were obtained from each patient. The inclusion criteria of patients were as **follow;**

1-The patient must be undergoing elective surgery for the first time.
2-Must have no known mental disorder.
3-Had had no endocrine or metabolic disorder.
4-Must be in a stable physical condition as determined by their medical records and physical examination.
5-Must have no pain or fever during the time of data collection.

The study population were all patients who were candidates for Orthopedic, Gastro-intestinal tract, Ophthalmologic, ENT and Cardio-thoracic surgeries. The data were collected one day prior to the surgery. Psychiatric diagnosis was made based on the following **measures;**

1-A modified Arabic version of the general health questionnaire (GHQ)(14). was applied.
2-A semi-structured interview according to DSM-IV classification 15-were carried out on each patient in order to validate the GHQ responses - positive and negative. The interview particularly stressed on aspects of the surgical operation that represent the main concerns or fear to the patient from undergoing the particular surgery.
3-Mental state assessment was carried out on patients with positive responses in the semi-structured interview to confirm the diagnosis.
4-A statistician carried out the organization and tabulation of the data and completed the required statistical work using a chi-square and p-values less than 0.05 was considered as significant whenever applied.

Pre-operative anxiety were assessed in relation to different variables including age, sex, severity and type of surgery. Assessment of the severity of anxiety was based on mental state examination. the severity was proportional to the degree and extent of the psychological and physical features of the anxiety such as apprehension, muscle tension, shortness of breath, tightness of chest, palpitations ,dilated pupils and the other features of anxiety.

Results

The findings showed that 102 (68 %) out of the 150 patients had clinically detected anxiety as indicated by the semi-structured interview and the mental state examination ,48 (47.1 %) males and 54 (52.9 %) females (table 1). Within the male and female populations 48 out of the 82 male patients (58 %) and 54 out of the 68 female patients(79.4 %) had anxiety (table-2) .Age of patients in the study ranged from 10 to over 70. Table- 3 showed age range for each 10 years. indicated in this table that anxiety is highest in those in their forties followed by those in their thirties.Table-4 showed the rate of anxiety in each type of surgery ,indicating that the highest rate is in patients awaiting for cardiovascular surgery followed by those with gastro-intestinal surgery with the least in patients with ENT surgery. while table 5 showed the sex distribution of anxiety according to the type of surgery, indicating that females had a higher anxiety rate than males in all types of surgery except for cardio-vascular type when the reverse was true. Table 6 showed the severity of POA in relation to types of surgery, indicating that the highest level of anxiety was with cardio-vascular surgery(70%) followed by the gastro- intestinal and the lowest was with ophthalmology (9.O1%) and ENT. Table 7 illustrated the specific fears or concerns by patients on the possibility of having serious peri and post operative complications in relation to each type of surgery, these including fears of death, failure of surgery, pain, infections and other aspects of surgery as complications of anesthesia, and the use of assisting measures like naso-gastric tubes tracheal tubes ,catheters and alike. nearly all patients in the sample had shown one fear or another and many patients had more than one fear or high concern, at the same time.table 7 also indicated that fear of failure of surgery is the commonest in most types of surgery, followed by fears of pain and infections.

Table 1-Rate of POA according to sex of patients

sex	male	%	female	%	total	%
anxiety	48	47.1%	54	52.9 %	102	68%
No anxiety	34	------	14	-----	48	32%
total	82	-------	68	------	150	-------

Table 2-Rate of anxiety within male and female population

sex	anxiety	No anxiety	total	Percent.
male	48	34	82	58.5%
female	54	14	68	79.4%

p-value=0.024

Table 3-Distribution of anxiety according to age range

range	10-19	20-29	30-39	40-49	50-59	60-69	70 +	total
Anxiety	9	17	18	20	17	10	11	102
No anxiety	4	8	10	11	8	3	4	48
total	13	25	28	31	25	13	15	150

Table 4-Rate of anxiety according to type of surgery

type	ENT	Ophthalmologic.	Cardio-thoracic	GIT	Orthopedic	total
anxiety	21	22	20	18	21	102
No anxiety	18	14	2	4	10	48
total	39	36	22	22	31	150
Percentage of anxiety	54%	61%	91%	82%	68%	68%

DF=4 p-value=0.020

Table 5-sex difference of anxiety according to the type of surgery

Type of surgery	male	female	total
ENT	8	13	21
Ophthalmology	7	15	22
Cardio-thoracic	11	9	20
GIT	8	10	18
Orthopedics	9	12	21

Table 6-Severity of anxiety in relation to type of surgery

Type of surgery	mild	moderate	sever	total
ENT	13	5	3	21
Ophthalmologic.	15	5	2	22
Cardio-thoracic	2	4	14	20
GIT	3	4	11	18
Ortho.	2	10	9	21

p-value=0.001

Table 7-Nature of anxiety and fears in relation to type of surgery

Fears of	ENT	Ophth.	Cardio-thoracic	GIT	Ortho.	total	%
death	1/39 =2.6%	0/35 =0%	15/76 =19.7%	6/70 =8.6%	2/62 =3.2%	24/102	23.3
Anaes-thesia	1/39 =2.6%	0/35 =0%	5/76 =6.6%	5/70 =7.1%	4/62 =6.5%	15/102	14.7
Failure of surgery	15/39 =38.5%	15/35 =42.9%	20/76 =26.3%	16/70 =22.9%	14/62 =22.6%	80/102	78.3
pain	12/39 =30.8%	8/35 =22.9%	14/76 =18.4%	15/70 =21.4%	16/62 =25.8%	65/102	63.7
Infec-tions	10/39 =25.6%	12/35 =34.3%	14/76 =18.4%	16/70 =22.9%	18/62 =29%	60/102	58.8
Using tubes	0/39 =0%	0/35 =0%	8/76 =10.5%	12/70 =17.1%	8/62 =12.9%	28/102	27.5
total	39	35	76	70	62	-------	------

Discussion

It is logical that all patients awaiting surgery of any type, extent or nature should experience some degree of worry and anxiety. in the present study patients with a higher degree of a clinically detected anxiety with clear signs and symptoms were included.

The inclusion criteria of the study was designed to exclude the influence of any exceptional environmental, physical, or mental factors on the emotional state of the patient at the time of collecting data. A reliable diagnostic tool used in this study was the general health questionnaire (GHQ), which was developed for the detection of a probable case of psychiatric morbidity and primary care sample. since its introduction it was subjected to validity study used in prevalence estimation applied in a variety of cultures and languages. the best case/non case threshold on the GHQ was found to be 4/5 and patients scored > 5 are referred to as general health questionnaire probable case. The following are the explanations for the finding in the study in relation to the different variables;

1--The study showed that females (52.9 %) out-numbered males (47.1 %) in the rate of pre-operative anxiety (tab.1). and this finding goes with the accepted prevalence rate for sex ratio for anxiety- 1. tab.2 confirmed this finding. the total number of females in the study was less than males, this was due to the decreased admission rate of females because of the small size of the female wards in Al-Kindy hospital.

2-In relation to age tab.3 indicated that anxiety is more in age groups (41-49 year) followed by the (31-39 year) than the younger or the older groups. this finding could be explained by the fact that people in their thirties and forties are –particularly in Iraq at the present time- are still in the process of building up their future and being more concerned about their future and on securing the safety and future of their families taking in to account the current security situation in the country. while in

the older age groups the concept of the future and of life and death becomes more realistic and in the younger age groups concerns about these concepts are prominent leading to decrease in the anxiety level in such ages.

3-The study showed a significant, higher level of anxiety in patients awaiting cardio-thoracic surgery (91 %) and gastro-intestinal tract surgery (82 %) than in the other types of surgery e.g. ENT surgery (54%) (tab.4) and this finding appears to be related to the higher risk of complications and danger on life that these types of operations carry than the other types. An interesting finding in this respect is that anxiety is higher in females in all types of surgery except in cardio-vascular surgery where it was higher in males (tab.5),and this may be explained by the common notion that cardio-thoracic surgery particularly open-heart surgery carry a high risk of fatal outcome and this may affect males more, as they are in a social position that requires them to be highly responsible for the interests and future of their families and this may add a great psychological burden on those patients increasing their pre-operative anxiety.

4-In regard to the severity of anxiety,table-6 showed that cardio-thoracic surgery had the highest rate(70%) followed by Gastro-intestinal tract surgery (61%).While it is at its lowest rate in Ophthalmologic surgery (9.1%) followed by ENT surgery(14.3%) . these results are significant. the reason for this difference could be explained in the same way as above that operations with high life threatening risk or serious complications are associated with high anxiety.

5-One of the most interesting finding of this study is the association of the general anxiety prior to surgery with fears or high concerns of particular aspects of the surgery which represent a focus of the anxiety, the rate of which is different with each type of surgery, many patients had more than one type of fear (tab.7),these included fear of death during the operation or shortly after, particularly in patients with cardio-thoracic surgery which had the highest rate (62.5%) and the lowest with ophthalmology surgery (0) followed by ENT surgery (4.2%).another interesting finding of the study is the fear of failure of surgery which dominated all other fears and in all types of surgery and represented 78.3% of the sample of patients with POA .this finding could be explained by mistrust of many patients in the health facilities at present with the limited availability of the advanced surgical equipments and the well trained staff and also the emigration of most senior surgeons as a result of the current situation in the country . other group showed fears of anaesthesia and the possibility of failure to wake up or being complicated by brain damage or failure of memory. while other patients showed worries and fears of post operative pain or infections which were common in all types of surgery., other patients were concerned of the use of instruments or tubes before, during or after the surgery. Apart from fears of failure of surgery ,fear of pain out numbered all other fears (63.7%) followed by that of infections (58.8%). there is no available data from other studies on this issue for comparison. the reason in the author's view for this increased rate of such fears is the influence of patients in this sample by the experience of other patients, relatives or otherwise or the effects of programmes on the subject on T.V. or other media .the amount of reported anxiety in the present study was higher in female gender, this is consistent with Spielberger (6) and Grabow (8) studies ,also the present study showed that ages between 30 and 40 were associated with high rate of POA .and this finding is in agreement with that in Grabow (8), Ramsy (9), and Jelicic (4) studies. in addition the present study showed that extensive surgery or surgery with uncertain outcome as in cardio-thoracic and GIT surgery also produces more anxiety than surgery with relatively little ambiguity about the course of events like ENT or Ophthalmology surgery (Grabow (8), Johnston (10) and Lucente (12) studies). Unfortunately the medical and paramedical staff of the surgical wards do not have the time nor the training to adequately deal with the patients' emotional distress. The anticipation of post-operative pain, separation from family, loss of dependence, as well as the fear of surgery itself and the possible complications as death are all factors triggering symptoms of preoperative anxiety.

Conclusions

The present study arrived at the conclusion that preoperative anxiety is high in all types of surgery and amount to over two thirds of the sample and that the rate and severity of the anxiety is higher in surgical operations associated with uncertain outcome or have higher risk on life such as cardiac surgery.

Recommendations

In the view of the findings of this study the following recommendations need to be considered;

1-The need for further studies that evaluate the effect of preoperative anxiety on the post-operative course and outcome.

2-The need for education and efficient training of the paramedical staff in surgical wards in preoperative anxiety and in the interventions measures required.

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