

Determining factors of anxiety in patients at the preoperative stage

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ABSTRACT

الأهداف: تحديد مستوى القلق لدى المرضى قبل وبعد إجراء العملية الجراحية، بالإضافة إلى التحقق من العوامل المتسببة في ذلك.

الطريقة: أُجريت هذه الدراسة الاستطلاعية في مستشفى الرباط الجامعي، الرباط، المغرب وذلك خلال الفترة من يناير إلى يونيو 2008م، وشملت 50 مريضاً مقبلاً على العملية الجراحية. ولقد تمت الموافقة على الدراسة قبل إجرائها من قبل لجنة مراقبة أخلاقيات البحوث. وتم قياس مدى القلق باستخدام النسخة الموجزة من سلم هاملتون لتقدير القلق، فيما تم الاستقصاء عن العوامل الاجتماعية الديموغرافية المؤثرة على درجات القلق في السلم بواسطة كلاً من: الإحصائيات الوصفية، واختبار ستودنت تي، وتحليل الفرق (أنوفا). لقد قمنا أيضاً باختبار درجات القلق التي كانت تفوق 14 درجة، والتي بدورها كانت تشير إلى ظهور القلق. وتمت الاستعانة بالانحدار اللوجستي الذي كان يشمل كافة العوامل المتغيرة، حيث كانت القيمة الاحتمالية 0.15 في التحليل أحادي المتغيرات، فيما وصلت إلى 0.05 في التحليل الإحصائي النهائي.

النتائج: أشارت النتائج إلى الانخفاض الواضح في مستويات القلق عند الجنسين بعد الجراحة مقارنةً بمرحلة ما قبل الجراحة، غير أن مستويات القلق لدى الإناث كانت أعلى من الذكور قبل الجراحة. وتبين أن طول الإقامة في المستشفى، وتدني معرفة المرضى بماهية مرضهم وكذلك دواعي الجراحة وتبعاتها من العوامل الرئيسية التي تزيد من مستويات القلق قبل وبعد العملية الجراحية، ولقد انطبق هذا على كافة المرضى بغض النظر عن مستوى التعليم أو الطبقة الاجتماعية.

خاتمة: أثبتت الدراسة مدى تأثير العوامل الاجتماعية الديموغرافية، والتاريخ المرضي النفسي، ونوع الجراحة على تحديد المرضى المعرضين للقلق أكثر من غيرهم قبل أو بعد العملية الجراحية، ولذلك يجب دعم مثل هؤلاء المرضى نفسياً ومساعدتهم في تجنب القلق.

Objective: To estimate patient preoperative anxiety, and determine associated factors.

Methods: Fifty surgical patients were investigated prospectively at the University Hospital, Rabat, Morocco between January and June 2008. Ethical Committee approval was obtained prior to conducting

this study. A short version of the Hamilton scale was used. Descriptive statistics, student's t-test, and ANOVA were performed to probe the sociodemographic impact factors on Hamilton scores. We investigated scores superior to 14 indicating a pathologic anxiety situation. A logistic regression was carried out by including all variables; the significant threshold was 0.15 in single variable analysis, and we retained a significant threshold of 0.05 in the final model.

Results: A significant decrease in anxiety from the preoperative to the postoperative stage was observed in all patients of merged surgery groups. Females had higher preoperational anxiety compared with males. A longer hospitalization stay and lower knowledge of patients regarding their pathologies were the main factors that increased the anxiety scores towards a pathological anxiety state. This applied to all patients, including higher education and prosperous social classes.

Conclusion: Patient sociodemographic, psychological history, and surgery type have to be considered for identifying patients at risk for developing anxiety before and after surgery. Psychological support has to be established to avoid additional suffering of the patient from anxiety.

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The surgical act affects any subject by narcissistic damage, which is responsible for varied psychological reactions.^{1,2} These are variable according to the person, the pathology, and the recommended surgery. The anesthesia fantasies, the surgical aggression of the human body, the fear of death, the lack of information, and the other factors contribute to the occurrence of symptoms and psychiatric disorders such as anxiety, depression, confusion, delirium, agitation, and acute psychosis. The anxiety related to surgery could have an impact on the cure, and the quality of life after the surgical act.³ The anesthetists, surgeons, and surgery qualified nurses are confronted with surgical anxiety and are requested to conceive their discipline not only as technical task and involvement but also as a psychosocial, moral, and cognitive charge.⁴ Several psychiatric studies evaluating the psychological consequences of surgical operations have been carried out. Their results remain different as they have adopted different methodological approaches, measuring tools, and populations to be studied.¹⁻⁴ The goal of this transversal study is to estimate surgical related anxiety, and to determine the most incriminating factors with the view of better care of the psychological problems experienced by the patients, both in the preoperative as well as the postoperative stages. This study shows an interest in the psychological preparation of patients while they are candidates for surgery; therefore ensuring better treatment of pathological anxiety before the surgical act.

Methods. Patients and study. This prospective study consisted of a sample of 50 patients (25 female and 25 male). They were all candidates for surgery at 3 different surgery departments of the University Hospital, Rabat, Morocco between January and June 2008. Ethical Committee approval from the university hospital was obtained prior to commencing the study. The candidates were from the Visceral Surgery Department, Surgical Oncology Department, and Gynecologic Surgery Department. All patients gave their consent before proceeding to evaluation.

We included in this study, simultaneously and randomly, all the patients scheduled for a surgical operation in the course of one week, and in all surgery departments mentioned above. Each patient was evaluated one day preoperatively and between 2 days to one week after surgery. We excluded any patients that did not agree to give their consent, patients unable to answer the questionnaire items of the Hamilton anxiety test, and patients that were considered in the preoperative stage, but discharged immediately before the postoperative assessments. Each of 3 psychiatrists investigated one surgical department, surgical oncology, gynecology, and visceral surgery patient. After interviewing the patients

with regard to social demographics and pathological history, they assessed the patients' anxiety using the Hamilton scale. The post-surgery delay is justified by the general state of the patient including stabilization after the reanimation that is for many of them longer. The collected data were mainly sociodemographic, surgical history, and psychiatric history including anxiety and depression that would have been followed by the psychiatrist. We also investigated the knowledge of each patient regarding his pathology, the planned surgery, and the identity of his surgeon.

The evaluation of anxiety was carried out using the short version of the Hamilton scale,⁵ which comprises 14 items. Every item is quoted from 0 to 4 according to the gravity of the anxious symptom. The standard of Bech et al⁶ is as follows, 0 to 5 attributes no anxiety, 5 to 14 attributes minor anxiety, and a score greater than 14 indicates pathologic anxiety. The psychiatric interview was carried out by 3 psychiatrists.

Statistical analysis. Data were analyzed using the Statistical Package for Social Sciences (SPSS Inc, Chicago, IL, USA) version 9.0. Initially descriptive statistics were performed including the description of the sociodemographic characteristics of the sample. Then, a comparison of scores before and after surgery using student's t-test was carried out. Then ANOVA was performed to investigate the impact of various different factors such as sociodemographic factors included and registered in the Hamilton scale. We mainly investigated a score >14 indicating pathologic anxiety. Finally, a logistic regression was carried out by including all the variables in the first model. The significant threshold was 0.15 in the single variable analysis, and we retained a significant threshold of 0.05 in the final model.

Results. The studied population constituted 50 patients scheduled for surgery. Their age ranged between 19-66 years old, with an average age of 44.5 ± 15.5 . The gender ratio (man/woman) was one. The female and male representations are identical. The patient's sociodemographic characteristics are summarized in Table 1. A psychiatric history of anxiety and/or depression was recorded in 9 patients, who were regularly followed-up by a psychiatrist or a medical practitioner and obtained psychopharmacological treatment. The surgery types are shown in Table 2. A previous surgical history was recorded in 24% (12 cases), and half were experiencing the same surgery for a second time. The average hospitalization time before surgery was 12.1 days, and varied according to surgical department, with a maximum of 40 days for 3 services. The department averages were 22.06 days for oncology, 9.8 days for visceral surgery, and of 3.1 days for gynecological surgery. Twenty percent of patients

(10 cases) did not know who their surgeon was, and only 42% of the patients had satisfactory information regarding their disease and surgery type, while 58% had very superficial or non-existent information. Twenty-two percent of patients experienced postponing of their surgery on the same scheduled day, or the day before. This was carried out for different reasons, mostly unknown by the patient. The average anxiety score of all merged surgery types was 13.18 ± 8.9 preoperatively, and 11.3 ± 8.6 postoperatively. The average scores by surgical type are formulated in Table 2. A significant difference between postoperative and preoperative anxiety score was registered ($p=0.00019$). Both, single factor analysis and multiple factors analysis showed a significant increase of anxiety in females ($p=0.15$ and $p=0.067$). Neither single factor analysis, nor multiple factors analysis showed a significant change in anxiety as impact of factors such as age, social class, educational level, and knowledge of the surgeon's identity. However, the same analysis of parameters such as the hospitalization duration, knowledge of the patient regarding his pathology, and the identity of his surgeon showed a significant impact on the anxiety score in the preoperative and postoperative stages. A significant difference in average Hamilton score between the oncologic surgery sample and 2 other surgery samples was found, while visceral surgery patients recorded

the lowest anxiety score in both the preoperative and postoperative stages. Multifactor analysis showed that gender and hospitalization duration strongly influenced the anxiety score of the patients, especially in females who experience 6 times higher and pathologic anxiety compared to males.

Discussion. The surgical act provokes diverse psychological reactions, which are variable in intensity and duration according to the subjects, and can occur in preoperative as well as postoperative stages. In addition to the personality of the patient, these reactions could have as an origin, several important elements including the cultural and cognitive background of the surgery. In parallel, there is an overestimation of the risk of the anesthesia. The anxiety in its psychic and somatic symptoms has an individual meaning to every patient and every personality. The gravity of the disease and the type the surgery are also determining factors. An earlier study² showed that patients following plastic surgery had less anxiety than those undergoing general surgery. During our study, we recorded the highest scores of anxiety in oncology department patients (Table 2). However, these results have to be carefully considered since anxiety is not only dependent on the surgery but also on the negative conception of the cancerous disease. A psychiatric history of anxious disorders in the patients scheduled for surgery would favor the reemergence of these disorders during the pre and postoperative stages, such as shown in our results, and by the study of Edwals-Kvist et al.⁷ This author concluded that symptoms in the postoperative stage constitute a continuum of the historical psychological symptoms. Concerning the surgical antecedents, we thought that would have a decreasing effect of anxiety, which was not found in this study and elsewhere.⁸ The unfamiliar and stressful hospital environment, conditions of the stay at the hospital, the crowd, seeing neighboring patients die, or in a complicated state, all impacts the anxiety in our patients during their long hospitalization. A surgical department in a hospital environment with its specific and complex aspects constitutes stressful conditions.^{9,10} The patient-doctor relationship appeared to have an important role in decreasing preoperative/postoperative anxiety.

Previous studies^{11,12} have demonstrated the efficiency of an information policy for the patient regarding the disease and the surgical act. The study of Hoermann¹² shows that 83.3% of the patients programmed for one orthopedic surgery preferred to be prepared by their surgeon using oral communication at the time of the surgery decision and the day of hospitalization. These patients were interested in the risks of their surgery and the recovery delay. Informing the patient would

Table 1 - Characteristics of surgical patients.

Variables	%
Age (in years), mean± SD (Range)	45.24± 15.68 (19–66)
Marital status	
Single	40
Married	48
Divorced or widowed	12
Education	
Analphabetic	16
Primary Education	38
Higher Education	46
Psychiatric history	18
Previous surgery	24
Type of surgery	
Visceral	50
Oncologic	30
Gynecologic	20

Table 2 - The average Hamilton score of anxiety by surgery type during the preoperative and postoperative stages, and the degree of significant difference between the preoperative and postoperative stages.

Hospital department	n (%)	Average Hamilton score		P-value
		Pre-surgery	Post-surgery	
Visceral surgery	25 (50)	9.56±6.5	6.6±4.3	0.06
Oncologic surgery	15 (30)	21±4.9	19.8±6.3	0.7
Gynecologic surgery	10 (20)	11±9.9	10.3±9.1	0.93

eliminate the mystic conception of the surgical world and correct the erroneous ideas about anesthesia and the preoperative stage. Humanizing the relationship of patient and surgeon is more and more present in the literature. The call of the President of the Surgery Department of the Georgia Medicine College (USA) is a reference model.¹³ Facing remarkable materialism and more developed surgery techniques, disease and death are more and more eliminated from the model of daily life. Consequently this requires additional efforts to recognize the risk of death while undergoing the surgical act. According to Bailey,¹⁴ one should consider the human relational aspect in order to improve the support provided to patients before/during/and after surgical intervention.

Globally, we can distinguish 3 types of anxious candidates for surgery. One is a group of patients with lower anxiety as a normal response to stressful situations for whom an improvement of the environmental conditions and useful information would significantly improve their situation. The second group of patients have borderline anxiety levels for whom psychological support is desirable. The last group is patients with pathological anxiety requiring the care of specialized and qualified psychiatrists, and includes most females in all groups. This last group also includes patients with longer hospitalization durations; which is a factor that would increase their anxiety by 0.15 for each additional day in hospital.

The heterogeneity of pathologies considered, and also the small sample size constitutes study limitations. However, this study has illuminated the way for a more developed study considering the most prominent factors and using a larger sample.

In conclusion, this study showed a significantly higher level of pathologic anxiety recorded in female patients. Thus, they require greater psychological support. Better consideration of the psychological factors and the socio-environmental context would significantly improve the psychological health of surgical candidates. This should include a reduction in preoperative hospitalization to

a strict minimum time, and avoidance of postponing surgery during the hospital stay.

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