

Anxiety, depression and stress in the preoperative surgical patient

A ansiedade, depressão e stresse no pré-operatório do doente cirúrgico
Ansiedad, depresión y estrés en el preoperatorio del paciente quirúrgico

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Abstract

Theoretical framework: Anxiety, depression and stress are common in patients during hospitalisation, thus their assessment is still important in different health care settings.

Objectives: To identify the levels of anxiety, depression and stress in preoperative surgical patients and analyse their correlation with some socio-demographic and clinical variables.

Methodology: A descriptive correlational study was conducted in a sample of 100 patients, the day prior to surgery, using a questionnaire for socio-demographic characterisation and the Depression, Anxiety and Stress Scale-21.

Results: The sample consisted mostly of married women, with a mean age of 48.41 years. Participants showed low levels of preoperative anxiety, depression and stress. There were significant differences in the three emotional states according to clinical diagnosis, in depression levels according to academic qualifications and length of hospital stay, and in stress levels according to the type of surgery.

Conclusion: Results showed that nurses need to be more proactive in assessing and intervening in the emotional states.

Keywords: anxiety; depression; stress; surgery.

Resumo

Enquadramento: A ansiedade, a depressão e o stresse são comuns nos doentes durante o internamento, pelo que continua a revelar-se pertinente a sua avaliação em diferentes contextos de saúde.

Objetivos: Identificar os níveis de ansiedade, de depressão e de stresse no pré-operatório do doente cirúrgico e analisar a sua associação com algumas variáveis sociodemográficas e clínicas.

Metodologia: Estudo descritivo e correlacional, numa amostra de 100 doentes, no dia anterior à cirurgia, utilizando um questionário de caracterização sociodemográfica e a Escala de Ansiedade, Depressão e Stresse-21.

Resultados: A amostra é constituída maioritariamente por mulheres, casadas, com idade média de 48,41 anos. Apresentam baixos níveis de ansiedade, de depressão e de stresse no pré-operatório, verificando-se diferenças significativas nos três estados emocionais em função do diagnóstico clínico, da depressão em função das habilitações literárias e do tempo de internamento e do stresse em função do tipo de cirurgia.

Conclusão: Os resultados encontrados remetem para a necessidade de uma maior proatividade dos enfermeiros na avaliação e intervenção relativas aos estados emocionais.

Palavras-chave: ansiedade; depressão; stresse; cirurgia.

Resumen

Marco contextual: La ansiedad, la depresión y el estrés son comunes en los pacientes durante el período de internamiento, por lo que sigue siendo pertinente evaluar estos puntos en los diferentes contextos sanitarios.

Objetivos: Identificar los niveles de ansiedad, de depresión y de estrés en el preoperatorio del paciente quirúrgico y analizar su asociación con algunas variables sociodemográficas y clínicas.

Metodología: Estudio descriptivo y correlacional, realizado en una muestra de 100 pacientes el día anterior a la cirugía, para el cual se utilizó un cuestionario de caracterización sociodemográfica y la Escala de Ansiedad, Depresión y Estrés-21.

Resultados: La muestra está formada mayoritariamente por mujeres, casadas, con una edad media de 48,41 años. Los participantes presentaron bajos niveles de ansiedad, de depresión y de estrés en el preoperatorio, y se observaron diferencias significativas en los tres estados emocionales en función del diagnóstico clínico, en la depresión en función de la formación y del tiempo de internamiento y en el estrés en función del tipo de cirugía.

Conclusión: Los resultados encontrados indican que los enfermeros deben ser más proactivos en la evaluación e intervención relacionadas con los estados emocionales.

Palabras clave: ansiedad; depresión; estrés; cirugía.

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Introduction

The burden of emotional states such as anxiety, depression and stress in people undergoing surgery is indisputable, for this is a critical event that is perceived as an unknown and frightening reality.

The excessive and continuous effects of those emotional states impact on people's physical and psychological well-being, quality of life and productivity, and may evolve to pathological states. They are influenced by each person's individual differences and personality traits, such as: age, nutritional status, chronic diseases or disabilities, surgical process (location, type and extent of surgery), post-operative complications, prior surgical experiences, and potential discovery of oncological diseases (Hibbert, 2003; Barbosa & Rabomile, 2006). In fact, this is a central aspect in surgical patients.

Based on the previous assumptions, it is important to identify the levels of anxiety, depression and stress in preoperative surgical patients and analyse their correlation with some socio-demographic and clinical variables.

Background

Surgery is a critical event, often an abruptly imposed reality, which causes profound changes in people's lives, well-being and health, as well as in fundamental life patterns at individual and family levels, thus changing roles, relationships, identities, skills and behavioural standards. It is perceived as a stressful event associated with a negative and frightening meaning and a threat to physical and mental integrity (Ribeiro, 2010).

The psychological component involved in an effective preoperative preparation to minimise emotional states is here highly emphasised in the nurse's role. That is because it concerns an area of autonomous intervention (Barbosa & Radomile, 2006; Christóforo, Zagonel, & Carvalho, 2006), enabling development, consolidation, improvement, implementation of interventions and changes in this area of knowledge. However, investment in this area of clinical practice is still scarce, both due to the lack of uniformity of procedures and protocols for preoperative preparation and the complexity of the psychological area/component, which requires a more active valorisation and intervention by the Nursing team. After

all, judgment processes, which are essential to formulate Nursing diagnoses and decide on the interventions, result from the team's comprehensive assessments.

In this context, preoperative assessment gains special importance. It should begin with the nurse/patient contact and should proceed throughout the entire surgical process. It should be a holistic assessment and reflect the patient's physiological, psychological, spiritual and social needs so as to standardise procedures or establish action protocols.

Anxiety, depression and stress are emotional states present in preoperative surgical patients (Marcolino, Suzuki, Cunha, Gozzani, & Mathias, 2007). They are exacerbated by a number of factors, such as change of family and social roles, uncertainty of the prognosis, loss of independence, fears about the surgical procedure, and disabilities, thus requiring adaptation to the new condition. To minimise those emotional states and facilitate the transition process, nurses should commit themselves to promote, construct and develop their know-how based on a specific body of knowledge and individualised technical, scientific, human and relational skills, which are consolidated in practice. Nurses should also develop a sense of strong ethical awareness, establish relationships of support and empathy, identify potential problems and anguishes, plan adequate interventions to meet existing needs, and promote a capacity for reflection, decision and action in the care process, aimed at meeting the needs concerned (Santos, 2010).

Renca, Gomes, Vasconcelos, and Correia (2010) argue that the guidelines for intervention in this area focus on education, instruction and training as a way for patients, families and significant others to collaborate directly in the care process and to mitigate less positive interventions, thus managing conflicts and feelings. These are key tools for decision-making processes, taking into account the different personal and contextual variables (Mendes, Bastos, & Paiva, 2010).

Research questions and hypotheses

Two research questions were formulated: What are the levels of anxiety, depression and stress in preoperative surgical patients? Which factors influence the levels of anxiety, depression and stress in preoperative surgical patients?

A set of hypothesis was also formulated to identify possible correlations and differences between the levels of anxiety, depression and stress in preoperative surgical patients and socio-demographic and clinical variables, such as: difference in the levels of anxiety, depression and stress in preoperative surgical patients according to gender; relationship between the levels of anxiety, depression and stress in preoperative surgical patients and age; difference in the levels of anxiety, depression and stress in preoperative surgical patients according to marital status; difference in the levels of anxiety, depression and stress in preoperative surgical patients according to academic qualifications; difference in the levels of anxiety, depression and stress in preoperative surgical patients according to profession; difference in the levels of anxiety, depression and stress in preoperative surgical patients according to having undergone previous surgeries or not; difference in the levels of anxiety, depression and stress in preoperative surgical patients according to clinical diagnosis; difference in the levels of anxiety, depression and stress in preoperative surgical patients according to type of surgery to be performed; and relationship between the levels of anxiety, depression and stress in preoperative surgical patients and length of hospital stay.

Methodology

This is a quantitative descriptive correlational study. The population of this study consisted of patients hospitalised in the General Surgery Unit of the Coimbra Hospital Centre.

A non-probability accidental sample was used. Patients were selected through consultation of the surgery map, according to the following criteria: inclusion criteria - knowing how to read and write, being over 18 years old, and having a surgery scheduled; and exclusion criteria - taking anxiolytics and antidepressants. The data collection was performed between January and March, 2011.

Data were collected using a questionnaire divided into three distinct parts: socio-demographic characterisation, characterisation of the clinical variables and the Anxiety, Depression and Stress Scale-21 (DASS-21).

The clinical variables which were considered relevant to this study included the existence or not of

previous surgeries, clinical diagnosis (the cause for surgical interventions being classified as malignant pathology or benign pathology), type of surgery to be undergone (classified as laparotomic surgery or laparoscopic surgery) and, finally, length of hospital stay (in days, during the preoperative period).

The scale used allows for the simultaneous assessment of three emotional states through their organisation in subscales: anxiety, depression and stress, respectively (Apóstolo, Mendes, & Azeredo, 2006). Each subscale consists of seven items and each item corresponds to an affirmative sentence that refers to negative emotional symptoms with four response possibilities on a self-response 4-point Likert-type scale of severity or frequency. The DASS-21 has three scores, each corresponding to a different subscale, in which the minimum is 0 and the maximum is 21. The final score is equal to the sum of the scores obtained in the seven items. In the end, the higher the score, the more negative the emotional states experienced during the days of hospital stay prior to surgical intervention (Apóstolo, Mendes, & Rodrigues, 2007; Ribeiro, Honrado, & Leal, 2004).

Formal authorisation was obtained from the President of the Administration Board of the Coimbra Hospital Centre, EPE. The Ethics Committee of the Health Sciences Research Unit - Nursing of the Nursing School of Coimbra approved the study. All ethical issues inherent in research involving human subjects were followed.

Results

The sample was composed of 100 patients who met the inclusion criteria. Most of them (59%) were women. The mean age was 48.41 years, with a standard deviation of 16.09 years. The median was 50.5 years and the prevalent age group was 50-70 years, accounting for 22%. Most respondents (64%) were married. As for their academic qualifications, 39% had completed the 1st cycle of basic education. Most participants (65%) were in the group of active workers.

As regards previous surgeries, 80% of the sample had already undergone previous surgeries. Benign pathologies were the main reason for surgery (70%). The most common surgical method used in the sample was the laparotomic surgery (69%), followed by the

laparoscopic surgery (31%). The most frequent length of preoperative hospital stay in our study was from one to five days, representing 86% of participants. The data collected using the DASS-21 showed that the mean responses tended to draw closer to the minimum value, which indicated low levels

of anxiety, depression and stress in the preoperative surgical patients. There were slightly higher scores in the stress dimension, both in the mean values and the second and third quartiles. Table 1 displays these results.

Table 1

Descriptive statistics of the dimensions of anxiety, depression and stress

Dimensions	Anxiety	Depression	Stress
Minimum	0	0	0
Maximum	19	17	19
Mean	3.47	2.77	5.42
Mode	2	0	0
Median	2.00	2.00	4.00
Standard Deviation	3.710	3.306	4.734
Percentile	25	1	1
	50	2	4
	75	4.75	8

Non-parametric tests were used to test the various hypotheses, since the central variables did not meet the assumption of the normality of the distribution. Through the analysis completed, no statistically significant differences or correlations were found in the levels of anxiety, depression and stress in

preoperative surgical patients according to gender, age, marital status, profession or whether patients had undergone previous surgeries or not.

The differences in the levels of depression in preoperative surgical patients according to academic qualifications were statistically significant (Table 2).

Table 2

Results of the Kruskal-Wallis test for the differences between the levels of anxiety, depression and stress according to Academic Qualifications.

Dimensions	Academic Qualifications	N	Mean Rank	X ²	P
Anxiety	1st Basic Cycle	39	47.94	2.505	0.644
	2nd Basic Cycle	13	53.92		
	3rd Basic Cycle	22	57.89		
	Secondary education	18	48.63		
	Bachelor's Degree	8	45.38		
	Other degrees	0	00.00		
Depression	1st Basic Cycle	39	48.37	12.260	*0.016
	2nd Basic Cycle	13	57.31		
	3rd Basic Cycle	22	64.05		
	Secondary education	18	40.78		
	Bachelor's Degree	8	29.56		
	Other degrees	0	00.00		
Stress	1st Basic Cycle	39	48.04	4.505	0.342
	2nd Basic Cycle	13	59.08		
	3rd Basic Cycle	22	58.11		
	Secondary education	18	43.64		
	Bachelor's Degree	8	43.06		
	Other degrees	0	00.00		

*Statistically significant difference

Statistically significant differences were also found in the levels of anxiety, depression and stress in preoperative surgical patients according to clinical diagnosis (Table 3).

Table 3

Result of the Mann-Whitney's U test for comparison of the dimensions of anxiety, depression and stress according to Clinical Diagnosis.

Dimensions	Clinical Diagnosis	N	Mean Rank	U	P
Anxiety	Benign pathology	70	46.77	789.000	*0.047
	Malignant pathology	30	59.20		
Depression	Benign pathology	70	43.84	583.500	*0.000
	Malignant pathology	30	66.05		
Stress	Benign pathology	70	45.66	711.000	*0.010
	Malignant pathology	30	61.80		

*Statistically significant difference

Statistically significant differences were found in the levels of stress in preoperative surgical patients according to type of surgery undergone, with laparotomy showing higher mean values than laparoscopy (Table 4).

Table 4

Results of the Mann-Whitney's U test for comparison of the dimensions of anxiety, depression and stress according to Type of surgery undergone.

Dimensions	Type of Surgery undergone	N	Mean Rank	U	P
Anxiety	Laparotomy	69	51.46	954.500	0.451
	Laparoscopy	31	46.79		
Depression	Laparotomy	69	53.49	817.000	0.068
	Laparoscopy	31	42.35		
Stress	Laparotomy	69	55.04	711.000	*0.009
	Laparoscopy	31	38.94		

*Statistically significant difference

Finally, after correlating the levels of anxiety, depression and stress in preoperative surgical patients with the length of hospital stay in days, a weak, positive and statistically significant correlation was found only in the depression/length of hospital stay dimension (Table 5).

Table 5

Spearman's correlation matrix between the dimensions of anxiety, depression and stress and the length of preoperative hospital stay in days.

Dimensions	Length of hospital stay	
	r_s	P
Anxiety	0.137	0.175
Depression	*0.255	0.011
Stress	0.187	0.062

*Statistically significant correlation

Discussion

The results of this study show low levels of anxiety, depression and stress in preoperative surgical patients. Some of the following factors, which we consider to be possible causes for these results, may be at the heart of the issue: sample size; nurses' difficulties in identifying these symptoms; the fact that patients were unable to verbalise what they felt; previous surgeries that facilitated the adaptation to surgery; the reason for surgery being a benign pathology; contacts with other people positively experiencing similar clinical situations; preoperative preparations that meet patients' needs; the ability to accept one's health status and a potential bond established with Nursing professionals.

The health care professionals' growing concern to carry out the preoperative anaesthetic and surgical visit, as well as implement an individualised psycho-educational programme (Mendes, Silva, Nunes, & Fonseca, 2005) may also be essential and necessary to promote appropriate training and guidelines, thus reducing the emotional states experienced.

Similarly, the information held by patients before surgery enables the construction of positive attitudes toward the disease, appropriate responses to situations, an effective participation in the decision-making process, and a perspective on the future (Martins & Nunes, 2009).

According to Santos, Santos, Melo, and Júnior (2009), psychological symptoms are most common than physiological symptoms in the preoperative period. Thus, it is essential to identify the patient's areas of vulnerability, helping to implement interventions targeting the psychological dimension and decreasing the symptoms' intensity.

In line with the abovementioned study, Marcolino, Suzuki, Cunha, Gozzani, and Mathias (2007) demonstrate that, after application of the DASS-21, 44.3% of patients showed anxiety and 26.6% showed depression in the preoperative period in a study designed to study the presence of anxiety and depression in this period. The authors argue that emotional states should always be assessed regardless of whether the patient has a severe clinical and/or surgical disease or not. This is because the prevalence of patients with anxiety is relevant and deserves differentiated care, which may include the use of tranquilisers before the intervention. Apóstolo,

Ventura, Caetano, and Costa (2008), when describing the levels of anxiety, depression and stress in 192 patients of a Health Care Centre using the Portuguese version of the *Depression Anxiety and Stress Scale* (DASS-21), indicated that 50 to 62% of patients showed *normal* or *mild* levels of stress, anxiety and depression, 16 to 21% showed *moderate* levels, and 20 to 29% showed *severe* or *extremely severe* levels.

Based on our professional experience, in terms of socio-demographic variables, our sample represented the population admitted to the General Surgery Unit where data were collected. After testing the various hypotheses based on the different socio-demographic variables, the results of the study indicated that there were no statistically significant differences in the levels of anxiety, depression and stress in preoperative surgical patients according to gender, age, marital status, and profession. These results were, therefore, consistent with the results of Marcolino et al. (2007), whose aim was to understand the impact of the socio-demographic variables of gender, age, marital status and education on anxiety and depression, concluding that there are no significant differences in the levels of depression and anxiety. Similarly, Santos et al. (2009) showed that the presence of stress in the preoperative surgical period is not correlated with age, marital status or the existence of previous surgeries. The differences found in the levels of depression in the preoperative surgical period according to academic qualifications may be justified by the fact that education promotes greater demand for information and greater understanding of the whole surgical process and, consequently, increases the propensity for depression.

As regards the clinical variable *having undergone previous surgeries or not*, the evidence in our study was inconsistent with the literature. Santos et al. (2009) identified stress in preoperative surgical patients when correlated with the existence of previous surgeries. In the same way, Ribeiro (2010) argued that patients with prior surgical experience have more preoperative anxiety. This may be explained by a lack of association between experience and learning, which contributes to anticipate surgery as a dangerous and unknown situation and a source of preoperative anxiety.

Although it was evident in the literature that malignant pathologies had higher prevalence and incidence, with a consequent increase in mortality rates and

impact on people's health and quality of life, than other chronic diseases (Branco, 2005), the results of our sample reflected a higher percentage of benign pathologies. This divergence with the literature may be understood by the fact that these are scheduled surgeries and the fact that the prevalence of benign pathologies may have been higher at the time of data collection.

After testing the differences in the levels of anxiety, depression and stress in preoperative surgical patients according to clinical diagnosis, the results indicated that there were statistically significant differences. These results were consistent with those of Santos et al. (2009), which reinforced the idea that most patients in the preoperative surgical period, despite having benign pathologies and undergoing less invasive surgeries, still have levels of anxiety and stress, which raises an array of emotional consequences.

In a study aimed at analysing the manifestations of anxiety, depression and stress in cancer patients in both pre-and postoperative periods, Passos (2009) demonstrated that patients with malignant pathologies have higher levels of depression and anxiety than patients with benign pathologies.

According to Herman et al. (2009), nowadays, laparoscopy is the surgical method of choice, representing an alternative to conventional technique. This approach has more benefits than the laparotomy, such as the decrease in the length of hospital stay. However, the results of our study showed the reverse trend, i.e. 69% underwent a laparotomy and 31% underwent a laparoscopy. These findings may relate to the fact that perhaps, at the time of data collection, the type of pathology required that type of surgery.

Statistically significant differences were found in the levels of stress in preoperative surgical patients according to type of surgery to be undergone.

According to Christóforo, Zagonel, and Carvalho (2006), the surgical process entails both physical and psychological disorders, associated with a range of factors such as the uncertainty of the type of invasive procedure used, which could mean the experience of a critical situation, in addition to the lack of definition of possible future events. Even the less invasive surgeries may have strong emotional repercussions and adverse consequences (Mendes et al., 2005). Since stress is defined as a highly complex psychophysiological reaction, denoting the body's

need to deal with something that threatens the homeostasis and the individual's internal balance (Serra, 2007), the type of surgery may develop this emotional state.

After correlating the levels of anxiety, depression and stress in preoperative surgical patients with the length of hospital stay in days, a positive, weak and statistically significant correlation was found in the depression dimension. In other words, although most respondents (86%) spent a short period of time at the hospital before the surgical intervention took place (between one and five days), the greater the length of hospital stay, the higher the levels of depression.

According to Ribeiro (2010), despite the hospitalisation for scheduled surgeries being performed increasingly closer to surgeries (24 hours before), patients still display needs for emotional support and training in this short period of time.

Thus, since depression is defined as a mood disorder that involves a heterogeneous group of symptoms, such as sadness, unhappiness, discouragement, irritability, loss of interest in body image, decreased cognitive ability, decreased self-esteem and self-confidence, among others (DSM-I V-TR, 2006), we can predict that the length of hospital stay waiting for a surgical procedure, even if short, may lead to the emergence or development of these symptoms due to all of the transformations that this process entails.

Conclusion

The preoperative period implies a great emotional burden on patients and their significant others. In that sense, it is essential for the psychological preparation to begin with the nurse/patient contact even before surgery. Bearing in mind the complexity of the phenomenon and in order to contribute to better understand this reality, this study aimed at identifying the levels of anxiety, depression and stress in preoperative surgical patients and knowing the possible correlations and differences with various socio-demographic and clinical variables.

Results indicated that, in the preoperative period, surgical patients showed low levels of anxiety, depression and stress. Statistically significant levels of depression were found in the preoperative period according to academic qualifications and length of hospital stay. The levels of anxiety, depression

and stress were statistically significant according to the clinical diagnosis variable in the three dimensions of the DASS-21. The type of surgery affected the levels of stress in the preoperative surgical period.

The results of this study provided an opportunity to reflect on our practices and behaviours as health care professionals. They should be considered as a contribution to understanding the complex phenomenon that concerns the identification of emotional symptoms associated with the preoperative surgical period and their valorisation by health care professionals, thus preventing their progression to pathological situations.

Some suggestions arose from these results, such as: promoting on-the-job training programmes for the development of skills in this area; establishing a preoperative consultation together with the remaining multi-professional team which included an interview with a structured script, where emotional states of anxiety, depression and stress could be conceptualised through attitudes, behaviours and words aiming at an autonomous and interdependent intervention to target the problem; and intervening interdependently so as to reduce the length of hospital stay.

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