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RELATIONSHIP OF ANXIETY AND PREOPERATIVE DEPRESSION WITH POST-OPERATIVE PAIN

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ABSTRACT

Objective: to analyze the relationship of anxiety and depression in the preoperative period with the presence of pain in the postoperative period.
Method: cohort study conducted at a university hospital in the state of Minas Gerais (Brazil), between february and July 2017, with 65 patients. A collection instrument was elaborated for the demographic and clinical characteristics. The Hospital Anxiety and Depression Scale was used to assess anxiety and depression; pain intensity was measured using the Verbal Numerical Scale. Data were submitted to descriptive and inferential statistical analysis.
Results: according to demographic and clinical characteristics, most patients were female, with a median age of 44 years and surgical specialty of the digestive tract. In the preoperative period, 31 (47.7%) had anxiety, and nine (13.8%), depression. None of the patients reported pain immediately prior to surgery. The incidence of moderate to severe postoperative pain was 32 (49.2%) patients. There was a statistically significant difference in the distribution of patients with postoperative pain in relation to the presence or absence of preoperative anxiety (p value <0.001). There is no statistically significant difference in the distribution of patients with postoperative pain in relation to the presence or absence of preoperative depression (0.733). In multivariate analysis, preoperative anxiety was a predictive factor for postoperative pain. Depression was not a predictive factor of postoperative pain.
Conclusion: It was demonstrated that, regardless of the demographic and clinical characteristics of the studied sample, the presence of anxiety in patients in the preoperative period is a predictive factor of postoperative pain.

DESCRIPTORS: Anxiety. Depression. Postoperative pain. Perioperative nursing. Perioperative care. Perioperative period.

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RELAÇÃO DA ANSIEDADE E DA DEPRESSÃO PRÉ-OPERATÓRIA COM A DOR PÓS-OPERATÓRIA

RESUMO

Objetivo: analisar a relação da ansiedade e da depressão no período pré-operatório com a presença da dor no período pós-operatório.
Método: estudo de coorte realizado em um hospital universitário do estado de Minas Gerais (Brasil), entre fevereiro e julho de 2017, com 65 pacientes. Foi elaborado um instrumento de coleta para as características demográficas e clínicas. A *Hospital Anxiety and Depression Scale* foi utilizada para avaliar a ansiedade e a depressão; a intensidade da dor foi medida por meio da Escala Numérica Verbal. Os dados foram submetidos à análise estatística descritiva e inferencial.
Resultados: segundo as características demográficas e clínicas, a maioria dos pacientes era do gênero feminino, com mediana de idade de 44 anos e especialidade cirúrgica do aparelho digestivo. No período pré-operatório, 31 (47,7%) apresentavam ansiedade, e nove (13,8%), depressão. Nenhum dos pacientes relatou dor no momento imediatamente anterior à cirurgia. A incidência de dor moderada a severa no período pós-operatório foi de 32 (49,2%) pacientes. Existiu diferença estatisticamente significativa na distribuição de pacientes com dor pós-operatória em relação à presença ou não da ansiedade pré-operatória (valor p<0,001). Não existe diferença estatisticamente significativa na distribuição dos pacientes com dor no período pós-operatório em relação à presença ou não da depressão pré-operatória (0,733). Na análise multivariada, a ansiedade pré-operatória foi um fator preditivo para dor pós-operatória. A depressão não foi um fator preditivo da dor pós-operatória.
Conclusão: foi demonstrado que, independentemente das características demográficas e clínicas da amostra estudada, a presença da ansiedade nos pacientes no período pré-operatório é um fator preditivo da dor no período pós-operatório.

DESCRITORES: Ansiedade. Depressão. Dor pós-operatória. Enfermagem perioperatória. Assistência perioperatória. Período perioperatório.

RELACIÓN DE LA ANSIEDAD Y LA DEPRESIÓN PRE-OPERATORIA CON EL DOLOR POSTOPERATORIO

RESUMEN

Objetivo: analizar la relación de la ansiedad y la depresión en el período pre-operatorio con la presencia del dolor pre-operatorio.
Método: estudio realizado en un hospital universitario en el estado de Minas Gerais (Brasil), entre febrero y julio de 2017, con 65 pacientes. Se elaboró un instrumento de recolección para las características demográficas y clínicas. A *Hospital Anxiety and Depression Scale* se utilizó para evaluar la ansiedad y la depresión; La intensidad del dolor se midió utilizando la Escala Numérica Verbal. Los datos fueron sometidos a análisis estadístico descriptivo e inferencial.
Resultados: según las características demográficas y clínicas, la mayoría de los pacientes eran mujeres, con una edad media de 44 años y especialidad quirúrgica del tracto digestivo. En el período pre-operatorio, 31 (47.7%) tenían ansiedad y nueve (13.8%), depresión. Ninguno de los pacientes informó dolor inmediatamente antes de la cirugía. La incidencia de dolor pos-operatorio moderado a intenso fue de 32 (49,2%) pacientes. Hubo una diferencia estadísticamente significativa en la distribución de pacientes con dolor pos-operatorio en relación con la presencia o ausencia de ansiedad pre-operatoria (valor de p <0,001). No existe una diferencia estadísticamente significativa en la distribución de pacientes con dolor pos-operatorio en relación con la presencia o ausencia de depresión pre-operatoria (0.733). En el análisis multivariable, la ansiedad pre-operatoria fue un factor predictivo para el dolor pos-operatorio. La depresión no fue un predictor de dolor pos-operatorio.
Conclusión: se demostró que, independientemente de las características demográficas y clínicas de la muestra estudiada, la presencia de ansiedad en pacientes en el período pre-operatorio es un factor predictivo de dolor pos-operatorio.

DESCRIPTORES: Ansiedad. Depresión Dolor pos-operatorio. Enfermería perioperatoria. Cuidados perioperatorios. Periodo perioperatorio.

INTRODUCTION

Among the conditions that may affect the patient's recovery after a surgical procedure, pain deserves special attention, as it is a very frequent phenomenon and can result in exposure of patients to unnecessary suffering, as well as having a significant impact on clinical and economic outcomes of health care.[1–2]

Pain is considered a predictable phenomenon of surgery, therefore it should be prevented and treated effectively; but despite the therapeutic advances in its control, postoperative prevalence is surprisingly high.[2–3]

A research in the United States found that more than 80% of patients undergoing surgical procedures experience pain in the immediate postoperative period, and approximately 75% of people with postoperative pain report its intensity as moderate to severe.[1]

A European survey of 746 hospitals found that postoperative pain control was suboptimal; For example, in the Netherlands, 41% of patients undergoing surgery reported moderate or severe pain on day "zero", 30% on day one, and 19%, 16%, and 14% on postoperative "days 2,3, and 4".[4]

Nursing care also includes being aware of the patients' subjective complaints, so as to intervene in the course of the symptom, allowing for comfort and well-being. Thus, as pain is measured as a vital sign, there are parameters to establish a good care plan, considering that therapeutic care should be conditioned to pain intensity.[5]

Some authors indicate that psychological and physiological disorders interfere with optimal postoperative recovery, reporting associations between the presence of anxiety and depression in the preoperative period and the presence of pain in the postoperative period; however, there is no consensus yet.[6–8]

Anxiety and depression are psychological disorders present in the surgical patient that may be exacerbated by a number of factors, such as family and social changes, uncertainties in improving health status and fears regarding the surgical procedure.

Anxiety and depression deserve due attention from the health team, as they may influence the patient's response to the surgical procedure and have negative effects on their recovery.[9–10]The identification of predictive factors for postoperative pain since the preoperative period is essential to support the elaboration of contextualized protocols on patients' needs.

Given the above, the question that guided this study was: is there a relationship between anxiety and depression of patients in the preoperative period and pain in the postoperative period?

Thus, the aim of this study was to analyze the relationship of anxiety and depression in preoperative patients with the presence of postoperative pain.

METHOD

An open cohort study, which presented a preoperative evaluation moment in the operating room reception room and three postoperative evaluation moments: upon admission to the surgical units (time 0 hour) at 12 hours and 24 hours postoperatively. The study was performed int he operating room and surgical units of a university hospital in the state of Minas Gerais, Brazil.

In the reception room of the operating room, 75 patients were invited to collect data. Patients aged 18 to 65 years, who belonged to the hospital's elective surgery program, who underwent general anesthesia, classified by the American Society of Anesthesiology - ASA I and II, with no history of psychiatric disorder, sensory deficit, cognitive impairment, chronic pain or chronic use of opioid analgesics were included

Exclusion criteria included patients using preanesthetic medication, patients referred to the Intensive Care Unit for postoperative care and patients with postoperative neurological disorders, which would not allow the application of pain measurement with the selected scale.

Among the 75 patients who agreed to participate, ten (13.3%) were excluded, two because of psychiatric disorders, six because they received intraoperative regional anesthesia and two because they were referred to the intensive care unit in the immediate postoperative period. Therefore, the final sample consisted of 65 patients.

Regarding data collection, a structured instrument was elaborated with data regarding the demographic characteristics of patients (age and gender) and data related to clinical characteristics (preoperative pain, ASA classification, duration of surgery and surgical specialty). The instrument was submitted to review by three investigating judges from the Perioperative Nursing area in order to evaluate the form and content.

The Hospital Anxiety and Depression Scale (HADS) was used to assess anxiety and depression. It is a self-applied measurement tool, in which the scores obtained are related to recent anxious and depressive behavior, specifically in the last week. The HADS consists of 14 items with four different answers (0 to 3), seven questions regarding the presence of anxiety (HADS-A) and seven questions related to the presence of depression (Depression Subscale of Hospital). Anxiety and Depression Scale Hospital (HADS-D).[11]

HADS has been translated into Brazilian Portuguese and validated for use in surgical patients with good internal consistency for both the anxiety subscale (Cronbach's α=0.84) and the depression subscale (Cronbach's α=0, 83).[11–12]

Verbal Numerical Scale (VNS) was used to measure pain intensity. It is a one-dimensional ordinal instrument for measuring pain intensity, indicated by numbers representing the amount of perceived pain, rated from 0 to 10, where 0 means no pain and 10 the worst pain ever felt. The pain was classified as 0=no pain;1, 2 and 3=mild pain;4, 5 and 6=moderate pain;7,8, 9 and 10=severe pain.[13]

The VNS was chosen in this study because it is a frequently used scale for the measurement of acute postoperative pain; In addition, it is applied in the evaluation routine of the place where the study was performed.

Patient participation was voluntary, all participants signed the Informed Consent Form, with the possibility of withdrawing from the study at any time.

Data were collected between February and July 2017. A pilot study was conducted with 10 patients which were not included in the selected sample.

All patients in the study were evaluated during the preoperative period in the reception room of the operating room and in the postoperative period in the surgical units.

Initially, the data collection instrument was applied for demographic and clinical characteristics in the reception room of the operating room; In addition, by applying HADS, patients were classified according to the presence of anxiety (HADS-A ≥9 or <9) and the presence of depression (HADS-D ≥9 or <9). The presence of pain in the preoperative period was also evaluated with VNS.

On the day following the surgical procedure, data regarding the surgical procedure and the evaluations performed by the nursing team on pain intensity in the immediate postoperative period were collected. These data were obtained from patient records.

Three moments of postoperative pain assessment were contemplated: upon admission to the surgical units (time 0 hours), at 12 hours and 24 hours postoperatively. These evaluation moments were chosen because, in the usual clinical practice of the study site, pain is evaluated at least once per shift in the immediate postoperative period.

In order to reduce the bias of the evaluator, we chose to take data from postoperative pain intensity assessments carried out by the nursing staff of the study site. This strategy allowed those who measured anxiety and depression in the preoperative period to not be the same as those who evaluated postoperative pain.

Data were analyzed using the Statistical Package for Social Sciences (SPSS) for Windows, version 22.0.

A descriptive analysis of demographic and clinical variables was performed. The Shapiro Wilk test was used to test the normality of the variables. It should be considered that the continuous variables presented abnormal distribution and were presented with values of median and interquartile range. In turn, categorical variables were presented with absolute values and percentages.

A bivariate analysis of anxiety and depression in relation to postoperative pain was performed. In order to consider patients with anxiety, the HADS-A score ≥9.13 was used as a reference criterion. To consider patients with depression, the HADS-D score ≥9 was used as the reference criterion. In the case of clinically significant pain intensity, the criterion of VNS≥4 (moderate to severe pain) was used at 0 hour, 12 hours and 24 hours of hospitalization. The incidence of moderate to severe pain (VNS≥4) in the postoperative period was also calculated.[13]

The incidence of moderate to severe pain (VNS≥4) in the postoperative period was analyzed in relation to demographic and clinical variables, including anxiety and depression variables.

Regarding bivariate analyzes, the Mann-Whitney U test for independent samples in continuous variables was used. Chi-square tests or Fisher's exact test (in cases with expected values below five) were used for categorical variables.

A multivariate analysis was performed that included variables with significance of p value <0.20, resulting from the bivariate analysis. In this analysis, the incidence of moderate to severe pain (VNS≥4) in the postoperative period was considered as the outcome variable. The technique used was Poisson regression with robust variance.

Considering a minimum of five subjects for each variable included in the multiple regression model, the minimum number required for this analysis was 40 patients.[14]

In all statistical analyzes, a significance level of 5% was considered, with a confidence interval (CI) of 95%.

RESULTS

The results are described in a descriptive and inferential data sequence. At first, the demographic and clinical characteristics of the patients are presented. Next, the results of the preoperative anxiety and depression assessment are explained. In addition, the results present the description of pain assessment in the preoperative and postoperative periods and the relationship of pain with anxiety and depression in the preoperative period. Finally, the results of the relationship between postoperative pain and the demographic and clinical characteristics of patients are presented.

According to demographic and clinical characteristics, most patients are female, with an average age of 44 years, physical classification of ASA II, median duration of surgery of 180 minutes and surgical specialty of the Digestive System, followed by Gynecology and Otorhinolaryngology. (Table 1).

Table 1 – Distribution of patients according to demographic and clinical characteristics. Belo Horizonte, MG, Brazil, 2017. (n=65)

Variables	n (%)* or Mdn (RIQ)†
Sex	
Male	10 (15.4)
Female	55 (84.6)
Age(years)	44 (34.5 – 56.5)
ASA‡	
I	31 (47.7)
II	34 (52.3)
Duration of sugery (minutes)	180 (115 – 207.5)
Surgical speciality	
Otorhinolaryngology	9 (13.8)
Breast	12 (18.5)
Plastic	8 (12.3)
Digestive surgery	14 (21.5)
Urology	10 (15.4)
Gynecology	12 (18.5)

* n (%): Absolute frequency (relative frequency); † Mdn (RIQ): Median (Interquartile Range); ‡ American Society of Anesthesiology

The preoperative HADS assessment showed that 31 (47.7%) patients had anxiety and nine (13.8%) patients had depression. All reported not having received preoperative medication to control anxiety. The use of the HADS scale in patients showed good internal consistency for both the anxiety subscale (Cronbach's α=0.86) and the depression subscale (Cronbach's α=0.82).

Table 2 presents the results of pain assessment in the preoperative and postoperative periods. In the preoperative period, 65 (100.0%) patients reported not having pain (VNS=0). After 12 hours, 25 (38.5%) reported moderate pain, with VNS between 4 and 6.

In the postoperative period, pain assessment data were collected from 65 (100.0%) patients after immediately postoperatively and 12 hours postoperatively; After 24 hours, 22 (33.8%) patients were evaluated, as 43 (66.2%) patients were discharged from the hospital before completing 24 hours postoperatively. The incidence of moderate to severe postoperative pain (VNS ≥4) was 32 (49.2%) patients.

Table 2 – Distribution of patients, according to pain assessment, preoperatively and postoperatively. Belo Horizonte, MG, Brazil, 2017. (n=65)

Pain intensity	Pre-operative	0 hour	12 hours	24 hours †
	n (%)*	n (%)	n (%)	n (%)
VNS‡=0	65 (100.0)	34 (52.3)	33 (50.8)	5 (22.7)
VNS=1-3		12(18.5)	6 (9.2)	6 (27.3)
VNS=4-6		13 (20.0)	25 (38.5)	9 (40.9)
VNS=7-10		6 (9.2)	1 (1.5)	2 (9.1)

* n (%): Absolute frequency (relative frequency); † n=22; ‡ Verbal Numerical Scale

Table 3 presents the distribution of patients with moderate to severe pain (VNS≥4) in the postoperative period, according to the presence of anxiety and depression evaluated in the preoperative period. There is a statistically significant difference in the distribution of patients with moderate to severe postoperative pain in relation to the presence or absence of anxiety in the preoperative period, at time 0 and 12 hours postoperatively.

Table 3 – Distribution of patients in the postoperative period, according to the evaluation of anxiety-related pain and depression in the preoperative period. Belo Horizonte, MG, Brazil, 2017. (n=65)

Pain instensity	Anxiety			Depression		
	HADS-A‖<9	HADS-A≥9	P value	HADS-D<9	HADS-D≥9	P value
	n (%)*	n (%)		n (%)	n (%)	
0 hour						
VNS¶ <4	30 (46.2)	16 (24.6)	-	41 (63.1)	5 (7.7)	-
VNS ≥4	4 (6.2)	15 (23.1)	0.001‡	15 (23.1)	4 (6.2)	0.430§
12 hours						
VNS <4	28 (43.1)	12 (18.5)	-	35 (53.8)	5 (7.7)	-
VNS ≥4	6 (9.2)	19 (29.2)	<0.001‡	21 (32.3)	4 (6.2)	0.724§
24 hours†						
VNS <4	7 (31.8)	4 (18.2)	-	10 (45.5)	1 (4.5)	-
VNS ≥4	6 (27.3)	5 (22.7)	1.000§	10 (45.5)	1 (4.5)	1.000§

* n (%): Absolute frequency (relative frequency); † n=22; ‡ Chi-square test; Fisher's exact test; || Hospital Anxiety and Depression Scale; ¶ Verbal Numerical Scale

After the 24 hours postoperative period, the distribution of patients with moderate to severe pain in relation to the presence or absence of anxiety in the preoperative period showed no statistically significant difference.

There is no statistically significant difference in the distribution of patients with moderate to severe postoperative pain in relation to the presence or absence of preoperative depression at the three assessment times (0, 12 and 24 hours).

The analysis of the incidence of moderate to severe postoperative pain (VNS ≥4) in relation to the demographic and clinical characteristics of the patients is presented in Table 4. The bivariate analysis showed that in the distribution by gender (p=0.303) and in the ASA classification (p=0.531), there was no statistically significant difference in relation to moderate to severe postoperative pain.

Age (p=0.181), duration of surgery (p=0.081) and type of surgery (p=0.148) also did not present statistically significant differences in relation to moderate to severe postoperative pain, however, they were included in the multivariate analysis because its p value was <0.20.

There is also a statistically significant difference in the total number of patients with moderate to severe postoperative pain in relation to the presence or absence of preoperative anxiety (p <0.001). There is no statistically significant difference in the distribution of patients with moderate to severe postoperative pain in relation to the presence or absence of depression in the preoperative period (0.733). However, depression was included in the multivariate analysis, without presenting p <0.20, as it is a variable of interest in the study.

Table 4 – Distribution of patients in the postoperative period, according to the evaluation of pain related to demographic and clinical characteristics. Belo Horizonte, MG, Brazil, 2017. (n=65)

Variables	Pain Intensity		P valor
	VNS†† <4	VNS ≥4	
	n (%)* e Mdn(RIQ)†	n (%) e Mdn(RIQ)	
Sex			
Male	7 (10.8)	3 (4.6)	-
Female	26 (40.0)	29 (44.6)	0.303§
Age(years)	42 (33 a 53)	50.5 (37 to 60)	0.181‖
ASA**			
I	17 (26.2)	14 (21.5)	-
II	13 (24.6)	18 (27.7)	0.531‡
Duration of surgery (minutes)	170 (80 a 195)	187.5 (142.5 to 231.2)	0.081‖
Surgical specialty			
Otorhinolaryngology	8 (12.3)	1 (1.5)	-
Breast	6 (9.2)	6 (9.2)	-
Plastic	3 (4.6)	5 (7.7)	-
Digestive surgery	8 (12.3)	6 (9.2)	-
Urology	3 (4.6)	7 (10.8)	-
Gynecology	5 (7.7)	7 (10.8)	0.148‡
Anxiety			
HADS-A<9‡‡	25 (38.5)	9 (13.8)	-
HADS-A≥9	8 (12.3)	23 (35.4)	<0.001‡
Depression			
HADS-D<9‡‡	29 (44.6)	27 (41.5)	-
HADS-D≥9	4 (6.2)	5 (7.7)	0.733§

* n (%): Absolute frequency (%); † Mdn (RIQ): Median (Interquartile Range); ‡ Chi-square test; Fisher's exact test; || Mann-Whitney U Test; ¶ Verbal Numerical Scale; ** American Society of Anesthesiology; †† Verbal Numerical Scale; ‡‡ Hospital Anxiety and Depression Scale

Poisson regression analysis with the selected variables showed preoperative anxiety as a predictor of postoperative pain (Exp (B)=2.9; 95% CI: 1.54-5.45; p=0.001).

Depression was not found as a significant predictive factor (Exp (B)=0.67; 95% CI: 0.35-1.28; p=0.228). The other variables included in the model were not statistically significant (p> 0.05).

DISCUSSION

This study demonstrates that, for this patient sample, postoperative pain is related to the presence of anxiety in the preoperative period.

Regarding the demographic and clinical aspects of the study patients, the high percentage of female patients may be justified by the fact that breast, gynecological and plastic surgeries are among the most frequent types of surgeries.

This percentage is higher than those in contemporary studies with similar design, where females range from 30.0% to 72.0%, but it should be noted that these studies were developed in patients of specific surgical specialties, and the distribution by gender depends on the epidemiological profile of each disease.[15–17]

The present study included patients from various surgical specialties, as it is considered important for the dimensioning of the studied phenomenon in the general surgical population.

The average age found, together with the criterion of excluding elderly patients, is an age trend found in several studies.[15,18–20] Some authors consider that the typical physiological and psychological changes of age may influence the perception and treatment of pain, which is why the decision was taken to exclude patients at extreme ages (children and elderly) from the sample of the present study.[2]

The proportion of patients classified as having anxiety and depression using HADS was similar to that found in a study of 1062 women who underwent cesarean section surgery in Brazil, using this same measurement instrument in the preoperative period.[21]

These results differ from the assessments of anxiety and depression performed in recent studies with patients undergoing bariatric surgery and[15] otolaryngologic surgery[16] and with orthopedic and traumatized patients.[17]

It is possibly that due to differences in the demographic and clinical profile of the studied patients, in addition to the differences in the validity of the measurement instruments used to assess anxiety and depression, no evidence of validity of the instruments was found in surgical patients in these studies.[15–17]

In the preoperative evaluation, all patients reported absence of pain, which permitted the evaluation of the temporal sequence in the onset of pain after the surgical procedure. There is strong evidence that preoperative pain has a linear and direct relationship with postoperative pain.[20–22] The patients in the present study did not have this risk factor, so it was not possible to verify this cause and effect relationship.

In the postoperative period, the increase in the proportion of patients with moderate to severe pain (VNS≥4) at all times of evaluation in the surgical units showed that the strategies used to treat pain in patients were not effective.

Similarly, a multicenter study conducted in Colombia with 1015 patients showed that pain was present in 59.1% of patients studied after 4 hours of surgery, reporting that they had nothing, little or moderate satisfaction with the analgesic treatment used.[22]

The high incidence of pain during hospitalization could be related to a more severe clinical condition of the patients or specific conditions of the surgical procedure to which they were submitted. These conditions can result in persistent postoperative pain, prolonged duration of opioid use, delayed recovery time, longer hospitalization periods, and higher healthcare costs.[23–24]

The tested multivariate model provided evidence that preoperative anxiety is a significant predictor of postoperative pain. In general, these data are consistent with the results found in recent studies regarding the perception of pain in the immediate postoperative period.[17,19–21,25] However, the heterogeneity of the studies in relation to the evaluation time and the variability in the type of tools used to assess anxiety and depression makes it difficult to compare data with existing literature.

The results showed that depression was not a predictor of postoperative pain, but this finding differs from findings in recent studies in which depression was found to be an independent predictor of postoperative pain.[15–16] This discrepancy could be attributed to the clinical characteristics of the patients and the measurement instruments used. However, a study of cardiac surgery patients showed that anxiety was predictive of persistent postoperative pain for up to two years and that depression did not have the same effect on pain risk.[26]

A meta-analysis study that evaluated, among 13 clinical trials, the use of psychotherapy versus conventional therapy to treat postoperative pain is highlighted. Psychotherapy (cognitive behavioral therapy and relaxation therapy) and educational therapy for persistent postoperative pain control were tested. Both were statistically significant higher compared to conventional therapy for persistent postoperative pain control. The evaluation of the methodological quality of clinical trials allowed the

study to recommend, with moderate quality, the intervention of psychotherapy to control persistent postoperative pain.[27]

Demographic and clinical variables included in the multivariate model did not show statistical significance. In recent studies, patient characteristics such as age, health status and duration of surgery have been found as predictive variables of postoperative pain; however, the literature is quite controversial in this regard.[16–17,22]

It is considered that the methodological approach used in this study (cohort study) allowed a correlation of the variables, showing that, in the sample of patients studied, anxiety preceded the onset of postoperative pain.

The present study had some limitations regarding the sample size as, although the minimum number of patients was estimated by statistical basis, it is believed that a larger number of participants would reveal possible associations between preoperative depression and depression and the presence of postoperative pain; however, further research is needed to test this hypothesis.

The results can be considered an updated approximation of the effect of preoperative psychological variables as risk factors in the onset of postoperative pain. Nevertheless, research is needed on the therapeutic approach of patients with anxiety and depression in the preoperative period, as dealing with emotional problems could contribute to a substantial improvement in the recovery of surgical patients.

CONCLUSION

Regardless of the demographic and clinical characteristics of the study sample, it has been shown that the presence of anxiety in patients in the preoperative period is a predictive factor of postoperative pain. Depression was not a predictor of postoperative pain in this study.

The results provide important evidence that can improve Perioperative Nursing practices, which indicates the importance of the routine assessment of psychological variables in the preoperative period of elective surgical procedures. In addition, the results highlight the need to develop interventions to reduce preoperative anxiety and thus reduce the incidence of postoperative pain.

In order to elucidate the predictive factors of postoperative pain more effectively, further research in this area is needed as a way to produce evidence for the prevention and control of postoperative pain and provide greater safety and comfort to the surgical patient.

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NOTES

ORIGIN OF THE ARTICLE

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CONFLICT OF INTEREST

There is no conflict of interests.

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