

## PSYCHOLOGICAL MORBIDITY AND IMPLICATIONS FOR THE RECOVERY OF ADULTS AFTER ONCOLOGY SURGERY

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**ABSTRACT:** Objective: to assess the construct of psychological morbidity (anxiety/depression) in adults in the postoperative period after oncology surgery, as well as its possible relationship with surgical recovery. Method: Correlational study with 96 adults who underwent oncology surgery admitted to a large hospital of the state of Minas Gerais, between August and December 2015, through the administration of a sociodemographic questionnaire, the Hospital Anxiety and Depression Scale and the Quality of Recovery Score, to assess surgical recovery. Descriptive analysis of data and Shapiro-Wilk, Mann-Whitney and Student's t-Test, as well as Pearson's and Spearman correlation coefficients were used. Results: the variables anxiety and depression had a negative relationship with surgical recovery. There was a negative relationship between the variables anxiety and age. Fifty nine (61.5%) participants showed anxiety symptoms and 38 (39.6%) had depression. The variables anxiety and schooling showed a positive relationship. Conclusion: Psychological morbidity was related to the quality of surgical recovery. Therefore, the planning of perioperative nursing actions is essential.

**DESCRIPTORS:** Oncology; Anxiety; Depression; Postoperative period; Oncology nursing.

### MORBIDADE PSICOLÓGICA E IMPLICAÇÕES PARA A RECUPERAÇÃO DE ADULTOS APÓS CIRURGIA ONCOLÓGICA

**RESUMO:** Objetivo: avaliar o constructo morbidade psicológica (ansiedade/depressão) em adultos submetidos à cirurgia oncológica no pós-operatório, bem como sua possível relação com a recuperação cirúrgica. Método: estudo correlacional, realizado com 96 adultos submetidos a cirurgia oncológica internados em hospital mineiro de grande porte, entre agosto e dezembro de 2015, mediante questionário sociodemográfico, Escala *Hospital Anxiety and Depression* e o *Quality of Recovery Score*, para verificação da recuperação cirúrgica. Realizou-se análise descritiva dos dados e os testes *Shapiro-Wilk*, *Mann-Whitney*, *t-student*, além dos coeficientes de correlação de *Pearson* e *Spearman*. Resultados: as variáveis ansiedade e depressão apresentaram relação negativa com a recuperação cirúrgica; houve relação negativa entre a variável ansiedade com a idade. 59 (61,5%) participantes apresentaram sintomas de ansiedade e 38 (39,6%) depressão. As variáveis ansiedade e escolaridade mostraram relação positiva. Conclusão: a morbidade psicológica esteve relacionada à qualidade da recuperação cirúrgica, portanto, torna-se importante o planejamento das ações de enfermagem perioperatória.

**DESCRIPTORES:** Oncologia; Ansiedade; Depressão; Período pós-operatório; Enfermagem oncológica.

### MORBIDAD PSICOLÓGICA E IMPLICACIONES PARA LA RECUPERACIÓN DE ADULTOS DESPUÉS DE LA CIRURGIA ONCOLÓGICA

**RESUMEN:** Objetivo: evaluar el constructo morbilidad psicológica (ansiedad/depresión) en adultos sometidos a cirugía oncológica en pos operatorio, así como su posible relación con la recuperación quirúrgica. Método: estudio correlacional, realizado con 96 adultos sometidos a cirugía oncológica internados en un gran hospital en Minas Gerais, entre agosto y diciembre de 2015, por medio de cuestionario socio demográfico, Escala *Hospital Anxiety and Depression* y *Quality of Recovery Score*, para verificación de la recuperación quirúrgica. Se realizó análisis descriptivo de los datos y las pruebas *Shapiro-Wilk*, *Mann-Whitney*, *t-student*, además de los coeficientes de correlación de *Pearson* y *Spearman*. Resultados: las variables ansiedad y depresión presentaron relación negativa con la recuperación quirúrgica; hubo relación negativa entre la variable ansiedad con la edad. 59 (61,5%) participantes presentaron síntomas de ansiedad y 38 (39,6%) depresión. Las variables ansiedad y escolaridad evidenciaron relación positiva. Conclusión: la morbilidad psicológica estuvo asociada a la cualidad de recuperación quirúrgica, por lo tanto es importante el planeamiento de las acciones de enfermería perioperatoria.

**DESCRIPTORES:** Oncología; Ansiedad; Depresión; Periodo posoperatorio; Enfermería oncológica.

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## ● INTRODUCTION

Brazil is among the countries with higher incidence of cancer worldwide, which characterizes the disease as a public health issue<sup>(1-2)</sup>. Epidemiological data such as population growth, population aging and socioeconomic development gradually increase the incidence of cancer mortality, posing a challenge for the health system: ensuring full and equal access of the population to diagnosis and treatment<sup>(2)</sup>.

It is estimated that between 2016 and 2017, approximately 596,070 new cases of cancer occurred in Brazil, which reinforces the magnitude of the cancer problem in the country<sup>(3)</sup>. In addition, the World Health Organization (WHO) predicted that by 2030 there will be 27 million new cancer cases worldwide and 17 million deaths caused by the disease. Developing countries will be the most affected, including Brazil<sup>(3-4)</sup>.

Cancer can be treated in many ways: surgery, radiation therapy, chemotherapy, among others<sup>(5)</sup>. The choice of therapy depends upon the location and grade of the tumor and the stage of the disease. One treatment or an association of therapies can be selected<sup>(6)</sup>. Surgery is most commonly used to treat people diagnosed with cancer<sup>(4-5)</sup>.

Improved quality of postoperative care, better understanding of oncology and improved surgical techniques have made it possible to remove malignant tumors in various parts of the body. Therefore, surgery has become the primary treatment used<sup>(7)</sup>.

However, surgical procedures may be perceived by patients as an aggressive intervention, because the uncertainty and fear of changes in their body image and daily routine can cause stress and lead to situations of conflict<sup>(5)</sup>, as their physical and psychological integrity is threatened by an uncertain future<sup>(8-9)</sup>. This procedure tends to have an impact on well-being, health and the essential patterns of the individuals and their families, producing changes in roles, relationships, identities, capacities and patterns of behavior<sup>(9)</sup>.

The physical and psychological changes caused by cancer, as soon as it is diagnosed, are noticeable and of great impact, particularly anxiety and depression<sup>(4,9)</sup>. Psychological morbidity, that is, anxiety combined with depression, is the psychiatric disorder most commonly associated with clinical diseases<sup>(7)</sup>. These mental disorders may aggravate the physical symptoms associated with the disease, reduce adherence to treatment and prolong the postoperative recovery time<sup>(5-6)</sup>.

Psychological disorders are not easily identified, are often underdiagnosed and therefore untreated, even though they are recurrent in people with cancer<sup>(7,9)</sup>. This can be explained by the fact that individuals usually do not reveal their psychological symptoms and health professional do not ask their patients to talk about them<sup>(4,6)</sup>.

Thus, health professionals, including nurses, should be able to provide comprehensive and continuous care, identifying situations of vulnerability during the different stages of cancer, providing information about the treatment and possible side effects<sup>(4)</sup>. Therefore, it is essential to interact with the patient during perioperative care and at hospital discharge, to clarify any possible doubts and reduce the psychological impacts arising from lack of information, in order to promote an adequate postoperative recovery<sup>(7)</sup>.

Based on these assumptions, it was hypothesized that adults undergoing oncology surgery, in the first 48 hours of the postoperative period, have psychological morbidity (anxiety and depression), and comparison of variables age, schooling, depression and anxiety showed a relationship between psychological morbidity and surgical recovery.

Although some Brazilian studies address psychological symptoms in cancer patients, there were no studies on psychological morbidity and its relationship with surgical recovery. Therefore, it is essential that health professionals acquire knowledge on the effects of these psychological impacts to be able to provide comprehensive care to the patients, i.e. taking into consideration their bio-psychosocial aspects, minimizing the consequences that this morbidity can cause in the postoperative recovery. Thus, the present study aimed to assess the construct psychological morbidity (anxiety and depression)

in adults in the postoperative period of oncology surgery, as well as its possible relationship with surgical recovery.

## ● METHOD

A cross-sectional, correlational study that used quantitative methods<sup>(10)</sup>. The sample consisted of 96 patients who underwent oncology surgeries admitted to a large hospital certified as a Unacon (High Complexity Oncology Center), providing radiation therapy and hematology and oncology surgery services, located in the State of Minas Gerais.

The sample size was defined through a Z-test, based on normal distribution, by estimating a percentage of the population of interest for a level of significance of 5% and achieving a 80% of power. A minimum sample size of 92 participants was obtained.

The selection criterion for selecting the subjects was oncology patients hospitalized from July to December 2015 for oncology surgeries, who were in the postoperative period for more than 24 hours and less than 72 hours. Patients aged 18 years or over who underwent oncology surgery, with cognitive ability measured by the Mini-Mental State Examination (MMSE) (a screening tool for measuring cognitive impairment validated in Brazil)<sup>(11)</sup> were included. Patients who underwent reconstructive or diagnostic oncology surgeries and patients referred to the postoperative intensive care sector were excluded.

Data collection was performed through individual interviews and consultation of the medical records of the participants at the surgical admission units during the postoperative period, 24 to 48 hours after discharge from the post-anesthetic recovery unit. Three data collection tools were used: a socio-demographic questionnaire (gender, age, schooling, marital status, professional status, religious belief and personal monthly income) and clinical data (knowledge of the diagnosis, previous oncology treatment, primary cancer site and presence of comorbidities).

The Hospital Anxiety and Depression Scale (HADS), in the Portuguese validated version, contains 14 Likert-like questions<sup>(12-13)</sup>. It consists of two subscales, for symptoms of anxiety and depression, with seven items each. Each question has four response options with values ranging from zero to three. A high score indicates the presence of many symptoms of depression or anxiety. The authors suggest a value of eight as the cut-off point, considering the lower values as absence of symptoms of anxiety and depression<sup>(12)</sup>.

It should be stressed that the definition of depression in the HADS focuses on the foundations of anhedonia, that is, the inability to experience pleasure from activities usually found enjoyable, and anxiety is defined as an unpleasant emotional state that is related to fear and reduces the behavioral efficiency, which can be accompanied by somatic discomfort.

The HADS scale can also be used as a clinical indicator of emotional disturbance (psychological morbidity). Numerical and categorical variables were tested<sup>(13)</sup>. Cronbach's alpha in the present sample was 0.85.

The third tool was used to assess the quality of surgical recovery, It is the Quality of Recovery Score (QoR-40), in the Portuguese validated version<sup>(14)</sup>, consisting of 40 items that measure the quality of the postoperative recovery. The dimensions encompassed by QoR-40 are emotional state (nine items), physical comfort (12 items), psychological support (seven items), physical independence (five items) and pain (seven items). It has two parts: A (the questions concern positive aspects, which are assigned higher scores) and B (involves negative aspects, which are assigned higher scores).

The frequencies of occurrence were defined as "never", "sometimes", "frequent", "most of the time" and "all the time"; each of which received a score of one to five depending on the section of the questionnaire (parts A and B). In part A, which addresses positive aspects, the expressions "never", "sometimes", "frequent", "most of the time" and "always" were assigned the score one, two, three, four and five, respectively. In Part B, which concerns negative aspects, the scoring was reversed; "never" is represented by five, and so on<sup>(14)</sup>. The maximum possible score for the QoR-40 is 200 (excellent quality of recovery), and the minimum score is 40 (poor quality of recovery). The value of Cronbach's alpha

was 0.75.

Data were processed and analyzed using the Statistical Package for Social Science (SPSS), version 21.0. For descriptive analysis of data, position (mean) and variability (standard deviation) measures were used for the continuous variables, and simple frequency for the categorical variables.

Shapiro-Wilk test was used to verify the normality of the explanatory variables psychological morbidity, surgical recovery, anxiety, depression, age and schooling. Psychological morbidity, surgical recovery, anxiety and age symptoms were found to be normally distributed. In turn, depression and schooling had non-normal distribution.

In order to verify a possible correlation between the variables psychological morbidity, anxiety symptoms, surgical recovery and age, Pearson's correlation test was used. For assessing the correlation between the variables schooling and psychological morbidity, as well as symptoms of depression and surgical recovery, Spearman's rank correlation coefficient was used. The strength of the correlations was analyzed, with values between 0.10 and 0.30 classified as a correlation of low magnitude, between 0.4 and 0.6, of moderate magnitude and above 0.7, of strong magnitude<sup>(10)</sup>.

Tests for comparing the distribution of measures of psychological morbidity, anxiety symptoms and surgical recovery with the gender variable were assessed by Student-t test, and depression by Mann-Whitney non-parametric test. A level of significance of 0.05 was established.

The study was approved by the Research Ethics Committee of Universidade Federal de São João del-Rei and by the Research Ethics Committee of the health institutions where the study was conducted, under statement no 660.597/2014. Before data collection, the respondents signed the informed consent form.

## ● RESULTS

The mean age of the 96 participants was 59 years, ranging from 19 to 89 years and the standard deviation (SD) was 14. Of these, 55 (57.3%) were female and 41 (42.7%) were male. Regarding marital status, 62 (64.6%) were married, 15 (15.6%) were single, Eleven (11.5%) were widowed and eight (8.3%) were separated/divorced. Regarding religious beliefs, 92 (95.8%) of the respondents reported having some religious belief. The average schooling was 6.2 years, ranging from 0 to 18 years. Regarding their occupations, 60 (62.5%) were on active duty and 36 (37.5%) were retired. The monthly person income of 40 (41.7%) respondents earned one minimum wage or less, 28 (29.2%) earned 1-3 minimum wages, 12 (12.4%) more than three minimum wages and 16 (16.7%) did not answer the question.

According to the clinical data obtained, 92 (95.8%) respondents were aware of the diagnosis of cancer. The types of cancer reported were urological (n = 20, 20.8%), gynecological (n = 18, 17.7%), gastrointestinal (n = 14, 14.8%), head and neck (n = 13, 13.7%), skin (n = 10, 10.7%), lymphoma (n = 4, 4.3%), and lung (n = 4; 4.3%). Regarding the treatments undergone, 77 (80.2%) participants had never underwent oncology surgical treatment, 19 (20.8%) had undergone another type of treatment (radiation therapy and/or chemotherapy). The prevalent comorbidities were systemic arterial hypertension (n = 40, 41.7%) and diabetes mellitus (n = 14, 14.8%).

According to the cut-off point of the HADS scale, 59 (61.5%) participants had anxiety symptoms and 38 (39.6%) had depression symptoms. Regarding the variable surgical recovery, the mean value obtained was 174.25, indicating a good surgical recovery quality.

Pearson's correlation test showed a negative relationship between psychological morbidity and surgical recovery ( $r = -0.56$ ,  $p < 0.001$ ), i.e. the higher the levels of psychological morbidity, the lower the quality of surgical recovery. A negative relationship was also observed between age and anxiety symptoms ( $r = -0.20$ ;  $p \leq 0.04$ ), or else, the younger the age, the higher the anxiety levels.

Spearman's correlation test showed a positive relationship between educational level and psychological morbidity ( $r = 0.20$ ;  $p \leq 0.04$ ), indicating that the higher the educational level, the greater the psychological morbidity. On the other hand, there was no relationship between surgical recovery and the variables age and schooling, i.e., the quality of surgical recovery was not influenced by the age

and educational level (schooling) of the participants (Table 1).

Table 1 – Distribution of Pearson's and Spearman's correlation coefficient values concerning psychological morbidity, surgical recovery, schooling and age. Divinópolis, Minas Gerais, Brazil, 2015

		Psychological morbidity	Anxiety	Surgical recovery	Age
Psychological morbidity	Pearson's Correlation	1.00	0.90	-0.56	-0.18
	Sig* (2-tailed)		0.00 †	0.00†	0.08
	(n=96)	96	96	96	96
Anxiety	Pearson's Correlation	0.90	1	-0.47	-0.20
	Sig* (2-tailed)	0.00†		0.00†	0.04*
	(n=96)	96	96	96	96
Surgical recovery	Pearson's Correlation	-0.56	-0.47	1	0.18
	Sig* (2-tailed)	0.00†	0.00†		0.08
	(n=96)	96	96	96	96
Depression	Spearman's Correlation	0.87	0.60	-0.58	-0.66
	Sig* (2-tailed)	0.00†	0.00†	0.00†	0.53
	(n=96)	96	96	96	96
Schooling	Spearman's Correlation	0.20	0.17	-0.18	--
	Sig* (2-tailed)	0.04*	0.18	0.82	--
	(n=96)	96	96	96	96

\*Sig. Significant

†Correlation is significant at level 0.01 (2-tailed).

Regarding the gender variable, no statistically significant differences were found for the variables psychological morbidity, anxiety and depression symptoms. However, there was a significant difference in the quality of surgical recovery when related to gender. Female respondents had a better quality of surgical recovery compared to male participants (Table 2).

Table 2 – Results of T-Student and Mann Whitney tests for comparison of the distribution of measures of psychological morbidity, anxiety, depression and surgical recovery with the gender variable. Divinópolis, Minas Gerais, Brazil, 2015

Variables	Psychological morbidity		Anxiety		Depression		Surgical recovery	
	T-Student		T-Student		Mann Whitney		T-Student	
	Mean (Standard deviation)	p*	Mean (Standard deviation)	p*	Mean Rank	p*	Mean (Standard deviation)	p*
Female gender	15.29 (7.46)	0.47	9.35 (4.58)	0.52	45.68	0.39	178.56 (15.82)	0.02
Male gender	8.80 (14.05)		8.71 (5.06)		50.60		171.04 (15.29)	

\*p-value

## ● DISCUSSION

Most respondents were women, contrasting with data from other studies, but this can be explained by the high incidence rates of breast, gynecological, gastrointestinal and skin cancer in the study population ( $n = 55, 57.3\%$ ). Non-melanoma skin cancers and colorectal cancers are the first and second most frequent cancers, respectively, for women in the southeastern region of Brazil<sup>(3)</sup>, which was the scenario of the present study.

The mean age of the respondents (59 years,  $SD = 14$ ) corroborates the findings of other studies. Incidence rates of cancer increase after the age of 50 years<sup>(15)</sup>. The most common types of malignancies in Latin America and the Caribbean are prostate (152,000) and female (150,000) cancers<sup>(3)</sup>. Corroborating such data, the most common cancer detected in this study was urological, and the malignancies were detected in the bladder, prostate and kidney.

The low levels of schooling and income found were found to be potential obstacles to access to diagnosis, knowledge of the treatment and management of its possible complications. Therefore, health professionals must provide comprehensive care to the patients, taking into consideration their peculiarities, respecting their views, social context, human dignity, in order to ensure high quality care to the patients, especially those affected by chronic diseases such as cancer<sup>(16)</sup>.

The most prevalent comorbidities of the respondents were systemic arterial hypertension-SAH ( $n = 40, 41.7\%$ ) and diabetes mellitus ( $n = 14, 14.8\%$ ). These findings are consistent with other studies that considered these chronic diseases as public health issues in Brazil<sup>(4,7)</sup>. This fact is relevant since these disorders are closely related with one of the topics of the present study: anxiety symptoms. Anxious people may have higher blood pressure and glucose levels, due to the secretion of elevated levels of cortisol and adrenaline that increase blood glucose levels and may impair the clinical evolution of patients in the perioperative period<sup>(4,16)</sup>.

Cancer affects not only the patients, but also their family members and others, such as friends.<sup>(7,9)</sup> After diagnosis, feelings such as shock, disbelief, anxiety, anger, guilt and depression are natural. Anxiety can be present in several moments of the process, such as diagnosis, surgical intervention, follow-up visits and uncertainty of recurrence<sup>(7,17)</sup>.

More than half of the participants - 59 (61.5%) showed anxiety symptoms. A study in Australia aimed to investigate the prevalence and short-term anxiety, depression and anxiety/depression in adults with cancer, pointed out that anxiety is characterized as a reaction to acute events and probably decreases after conclusion of primary treatment, since patients become familiar with the side effects of treatment and may also receive positive prognostic information<sup>(9)</sup>. The stress experienced by cancer patients during their frequent hospitalizations, when mutilating surgeries are often performed, associated with invasive and painful procedures, and the fact that they are distant from their homes are possible causes of anxiety<sup>(16)</sup>.

Depressive symptoms were identified in 38 (39.6%) participants. Clinical depression is considered the most prevalent psychiatric disorder among cancer patients and is associated with significant functional losses. However, the condition is often underreported and only detected when its negative impacts on quality of life are severe<sup>(16,18)</sup>.

Despite the fact that people with cancer are very likely to have psychological morbidity, studies report that the health workers are unable to identify cancer patients with symptoms of depression and anxiety, which contributes to complications in more than half of the cases<sup>(2,6)</sup>.

Thus, the American Society of Clinical Oncology and the Canadian Association of Psychosocial Oncology (ASCO) recommend that all cancer patients are assessed for symptoms of anxiety and depression at several moments during the care process. This assessment must be based on validated measures and, depending on the reported levels of symptoms, different treatment modalities are recommended. Failure to identify symptoms of anxiety and depression as well as treating these patients in the context of oncology increases the risk of reduction in quality of life<sup>(1)</sup>.

Another important point of this study was that 92 (95.8%) respondents reported having a religious

belief. Religious beliefs, expressed through rituals, prayers, and meditations, are common mechanisms that help the individuals cope with their thoughts and feelings that accompany the illness<sup>(17)</sup>. Therefore, religion can be an element that contributes to treatment adherence, in an attempt to cope with the problem, reducing stress and anxiety<sup>(15,17)</sup>. It is the main coping strategy used by cancer patients<sup>(1)</sup>. The belief in a mystical power, positive thinking, and optimism stimulate the adoption of adaptive responses to the difficult and complex circumstances of the illness<sup>(15)</sup>.

Analysis of the presence of possible correlations between the variables showed a moderate negative correlation between psychological morbidity and surgical recovery ( $r = -0.56$ ;  $p \leq 0.00$ ), indicating that the higher the levels of anxiety and depression, the worse the quality of surgical recovery. Corroborating international studies on the theme, a study in Israel found that cancer patients with symptoms of depression and anxiety experience a significant reduction in the quality of life and require a longer postoperative recovery time, which impacts the costs of health services<sup>(6)</sup>.

No correlations were found between the type of cancer/surgery performed with the levels of anxiety and depression, as well as with surgical recovery. Regardless of the type of cancer, the individuals' perceptions of stressful situations differ, being significantly influenced by previous experiences and individual, social and cultural differences<sup>(8)</sup>.

However, an international study aimed to investigate the prevalence and the development of anxiety, depression, and anxiety-depression in individuals with cancer in the short term, reported that lung cancer patients and smoking history were the strongest predictors of psychological morbidity compared to other malignancies: gastrointestinal, genitourinary, neuroendocrine, head and neck, bone, breast, skin and prostate<sup>(9)</sup>.

There was also a weak negative correlation between the variables age and anxiety symptoms ( $r = -0.20$ ;  $p \leq 0.04$ ), indicating that younger participants had higher levels of anxiety. This fact was observed in a study where the prevalence of psychological morbidity was higher in the first six months after diagnosis<sup>(9)</sup>. Symptoms of psychological morbidity were more frequent in the younger age group than among the elderly, probably because the daily routine of younger individuals is more affected by the disease than the routine of elderly, who are more prepared to cope with the disease<sup>(4)</sup>. However, there was no correlation between age and the different types of cancer<sup>(4,9)</sup>.

Moreover, there was a weak positive correlation between the variable schooling and psychological morbidity ( $r = 0.20$ ;  $p \leq 0.04$ ), indicating that the higher the educational level, the more severe the psychological morbidity. Therefore, it is assumed that greater access to information and knowledge about the disease, by individuals with more years of schooling, trigger more evident emotional disturbances. There was no correlation between schooling and surgical recovery.

Psychological morbidity did not differ between the genders. However, another study found that depression and anxiety symptoms were 2 to 3 times more prevalent in women than men<sup>(9)</sup>.

As for the variable surgical recovery, it differed between the genders, with women showing better surgical recovery than men. This finding corroborates data from an international study on the predictors of faster recovery in the postoperative period of colon cancer resection, in which female gender was considered an independent determinant for early surgical recovery<sup>(6)</sup>.

Our findings stress the importance of the permanent involvement of health professionals, particularly nurses, in the dynamic process of care to individuals with cancer, as these professionals spend more time with the patients than other health care providers, which facilitates the establishment of a bond of trust<sup>(16)</sup>, with the patients during the assessment of psychological morbidity and in the development of effective interventions.

Some limitations of this study include its cross-sectional design that does not allow the establishment of causal relations between the analyzed variables and the generalization of data. Since the study sample consisted of cancer patients from one state of Brazil, its findings might not be generalizable to other parts of the country. It is suggested that further longitudinal multicenter studies with larger samples are carried out to demonstrate the hypotheses established in this study.

## ● CONCLUSION

A weak positive relationship was observed between psychological morbidity and schooling, and higher levels of education are associated with greater psychological morbidity. A weak negative relationship with surgical recovery was identified, i.e. higher levels of psychological morbidity result in decrease in the quality of surgical recovery.

As for surgical recovery, there was a significant difference in its quality when related to gender, and women had a better quality of surgical recovery than did men.

As psychological morbidity directly interferes with the quality of surgical recovery, the earlier a psychological disorder is detected, the better the quality of surgical recovery. In view of the aforementioned, health professionals must be aware of this construct, and hence further Brazilian studies are needed, since most studies on this topic were conducted in other parts of the world, especially in developed countries.

In addition to the production of knowledge, the present study intends to contribute to the planning of nursing actions, to ensure better care by health professionals in the perioperative period of cancer patients, since both the surgical procedure and the disease tend to generate psychological morbidities.

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