Depressive symptoms in patients with coronary artery disease

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Objective.To assess the presence of depressive symptoms in patients with coronary artery disease in the preoperative period for coronary artery bypass surgery (CABG) in Aracaju, Sergipe, Brazil. **Methods**. A cross-sectional study with 63 hospitalized patients prior to CABG. Two instruments were used for data collection; one for the sociodemographic and clinical characteristics, and the other to evaluate the presence of depressive symptoms, Beck Depression Inventory (BDI). **Results**. The mean age was 58 years; most were male (60.3%); with a partner (81%) low educational level (71.4% attended school through elementary school). Among the patients, 36.5% were classified with dysphoria, and 25.4% had some degree of depression (6.3% mild, 17.5% moderate, and 1.6% severe). The group of patients with lower educational level presented higher depressive symptoms.

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Conclusion. Six of every ten patients with coronary artery disease showed dysphoria or some degree of depression. The results of this study can support the planning of nursing care for patients before and after CABG, as well as the development of public health policies to ensure complete, quality care for these patients, understanding depression as a variable that can interfere with recovery after cardiac surgery.

Key words: depression; coronary artery disease; nursing; psychiatric status rating scales; prevalence.

Síntomas depresivos en pacientes con enfermedad arterial coronariana

Objetivo. Evaluar la presencia de síntomas depresivos en pacientes con coronariopatía en el preoperatorio de cirugía de revascularización del miocardio (CRVM) en el municipio de Aracaju, Sergipe, Brasil. **Métodos**. Estudio de corte transversal realizado con 63 pacientes hospitalizados quienes esperaban una CRVM. Para la recolección de datos se utilizaron dos instrumentos: uno para la caracterización sociodemográfica y clínica y otro para la evaluación de presencia de síntomas depresivos (Inventario de Depresión de Beck –IDB). **Resultados**. La edad media fue de 58 años; la mayoría era de sexo masculino (60.3%); tenía compañero (81%), y presentaba baja escolaridad (71.4%, con estudios incompletos de primaria). Dentro de los pacientes, el 36.5% clasificó en disforia y un 25.4% presentaba algún grado de depresión (6.3% leve, 17.5% moderada y 1.6% grave. El grupo de pacientes que tenía menor grado de escolaridad presentó mayor presencia de síntomas depresivos. **Conclusión**. Seis de cada diez pacientes con coronariopatía presentó disforia o algún grado de depresión. Los resultados de este estudio contribuyen a la planeación de la asistencia de enfermería a los pacientes después de CRVM, así como en el desarrollo de políticas públicas en salud que garanticen la atención integral y de calidad, considerando la depresión como una variable que puede interferir en la recuperación después de la cirugía cardíaca.

Palabras clave: depresión; enfermedad de la arteria coronaria; enfermería; escalas de valoración psiquiátrica; prevalencia.

Sintomas depressivos em pacientes com doença arterial coronariana

Objetivo. Avaliar a presença de sintomas depressivos de pacientes com coronariopatia no pré-operatório de cirurgia de revascularização do miocárdio (CRVM). **Métodos.** Estudo de corte transversal realizado com 63 pacientes hospitalizados aguardando a CRVM no município de Aracaju, estado de Sergipe, Brasil. Para a coleta dos dados foram utilizados dois instrumentos, um para a caracterização sócio-demográfica e clínica, e outro para avaliação da presença de sintomas depressivos, o Inventario de Depressão de Beck (IDB). Resultados. A idade média foi de 58 anos; a maioria era do sexo masculino (60.3%); tinha companheiro(a) (81%) e apresentava baixa escolaridade (71.4% estudou até o ensino fundamental incompleto). Entre os pacientes, 36.5% foram classificados com disforia e 25.4% apresentaram algum grau de depressão (6.3% leve, 17.5% moderada e 1.6% grave). O grupo de pacientes que tinha menor grau de escolaridade apresentou maiores sintomas depressivos. Conclusão. Seis de cada dez pacientes com coronariopatia apresentaram disforia ou algum grau de depressão. Os resultados deste estudo podem subsidiar o planejamento da assistência de enfermagem à pacientes, antes e após a CRVM, assim como o desenvolvimento de políticas públicas de saúde que garantam o atendimento integral e de qualidade a esses pacientes, considerando a depressão como uma variável que pode interferir na recuperação após a cirurgia cardíaca.

Palavras chave: depressão; doença da artéria coronariana; enfermagem; escalas de graduação psiquiátrica; prevalência.

Introduction

In healthcare, cardiovascular diseases are responsible for a high number of deaths in the world.[1] When associated with cardiovascular disease, coronary heart disease, as well as mental disorders, represent public health problems due to both high prevalence rates and contributions to the global burden of illness.[2] In the context of these disorders, depression is considered an independent risk factor for developing coronary heart disease.[2] Symptoms of depression, anxiety and health-related quality of life are associated to the severity of coronary artery disease.[3] Depression can be the result of arrhythmia, changes in the sympathetic and parasympathetic nervous system, changes in heart rate, ischemic heart disease, decreased serotonin levels, and increased cortisol levels.[4]

As a treatment, coronary artery bypass graft (CABG) is one of the options.[5] Thus, considering the relationship between depression and coronary heart disease, some studies have been developed in the context of the patient undergoing CABG,[6,7] with depression considered an independent predictor of increased length of hospital stay and late perioperative complications after CABG.[6] Given the above, and considering that knowledge of psychological amendments presented preoperatively can contribute to more sustainable planning of nursing care in the postoperative patient undergoing CABG, reducing complications, this study aimed to assess the presence of depressive symptoms of patients with coronary artery disease prior to CABG.

Methods

This was a cross-sectional cohort study, conducted in a large general hospital, a reference site for cardiac surgery, in the municipality of Aracaju, state of Sergipe, Brazil. The convenience sample consisted of 63 patients with coronary artery disease who were hospitalized waiting for CABG. The inclusion criteria were: more than 18 years of age, with clinical conditions (physical and psychological) that allowed the patient to answer the questions. Exclusion criteria were established, including: having undergone another surgery concomitantly, have already undergone CABG previously, and being admitted to the intensive care unit (ICU). It was believed that undergoing more than one surgical procedure, or having already experienced CABG, would be factors that could interfere with the patient's emotional stability, as well as being hospitalized in an ICU.

Data collection was conducted by researchers through individual interviews and analysis of the patient medical records. The instruments were completed by researchers based on the patients' responses. The period of data collection was from October of 2012 to December of 2013. A pilot test with ten patients was performed, to investigate the adequacy of instruments, which did not demonstrate need for adjustments. The data from these patients were included in the sample. Before beginning the pilot test, the researchers were trained so that there was uniformity in the data collection, reducing the bias. Two instruments were used, one for the collection of demographic and clinical data, and the other to assess the presence of depressive symptoms. The use of psychotropics was investigated, considering that the action of these medications could compromise the evaluation of the participants regarding the self-perception of the depressive symptoms. The Beck Depression Inventory (BDI) was used for evaluating the presence of depressive symptoms, in its validated version translated into the Portuguese of Brazil.[8,9] This is an instrument composed of 21 items, including symptoms and attitudes, whose intensity varies from zero to three. The total possible score for the scale ranges from zero to 63, with higher values indicating higher depression. There are several cut off points to classify the results of the implementation of the BDI. Considering the lack of diagnosis of affective disorder, for this study the following were used: score of zero to nine, without depression; 10 to 17, dysphoria; 18 to 19, mild depression; 20 to 30, moderate depression; and above 30, severe depression.[9] Dysphoria can be understood as mild and transient behavior change that can occur, for example, as a response of disappointment.[10]

For data analysis, descriptive analyses of single frequency for nominal or categorical variables, central tendency (mean and median), and dispersion (standard deviation) for continuous variables were performed. Non-parametric statistical tests were used because the variables of interest did not have a normal distribution. The Mann Whitney test was used to compare the medians of the measure of depression in relation to: medication, as this variable could interfere in the evaluation; sex; education level; marital status; and exercise. The Spearman correlation test was used for the evaluation of the correlation between the BDI with the patient's income. The internal consistency of the BDI was calculated using Cronbach's alpha. The significance level for the tests was 0.05. The project was approved by the Ethics Committee of the Universidade Federal de Sergipe, CAAE protocol number - 0144.0107.000-11. Participants that agreed to participate in the study signed the Terms of Free and Informed Consent form.

Results

The mean age was 58.2±13.0 years; most participants were male (60.3%), had a partner (81%), and a low educational level; 71.4% had only an elementary school education, and did not have paid employment (65.1%). With regard to clinical aspects, most patients did not exercise weekly before the CABG (73%), had a history of angina and acute myocardial infarction (AMI) (76%), and presented with systemic arterial hypertension (SAH) (79.6%) as the most prevalent pathology. Only five patients (7.9%) were using psychotropics.

The internal consistency of the BDI for this sample was 0.76. The mean BDI was 13.0±7.3, and median of 12.0. It was observed that 61.9% of patients had some psychological disorder, with dysphoria (36.5%) as the most common, followed by moderate depression (17.5%) (Table 1).

Table 1. BDI classification in the sample studied (n = 63). Aracaju, SE, Brazil, October 2012 to December 2013

Classification	*n* (%)
No depression	24 (38.1%)
Dysphoria	23 (36.5%)
Mild depression	4 (6.3%)
Moderate depression	11 (17.5%)
Severe depression	1 (1.6%)

The presence of depressive symptoms was also evaluated by the following variables: sex, education level, marital status and physical exercise. It was observed that the male gender, a higher level of education, the presence of a partner, and physical exercise were variables associated with lower median values of the total BDI. However, there was only a statistically significant difference in the evaluation of the BDI and educational level, and the median value of the group that had incomplete elementary school education was almost twice the value of those who had completed elementary school or more (Table 2).

Table 2. Values of the BDI according to sociodemographic variables and probability values (p) associated with the Mann Whitney test. Aracaju, SE, Brazil, October of 2012 to December of 2013

	Variable (n=63)	BDI (Median)	p
Sex	Male	11.0	0.38
	Female	12.0	
Education level	Did not complete elementary school	12.0	0.01
	Completed elementary school or more	7.5	
Marital status	With partner	11.0	0.88
	Without partner	12.0	
Physical exercise	Yes	11.0	0.43
	No	12.0	

When the correlation between the extent of depression, BDI, and the monthly family income variable was evaluated, the results suggested that the higher income, the lower the probability of depressive symptoms (r=-0.25, p<0.05).

Discussion

Some sociodemographic characteristics presented by the participants of this study are similar to those of national and international studies of patients with coronary artery disease referred for CABG, such as: the prevalence of males,[11-13] presence of a partner,[11,12] low educational level, and age.[11] *The results showed that the majority of participants did not practice physical activity, presented a history of angina, myocardial infarction, and arterial hypertension as comorbidities. The practice of physical activity has been identified as a variable that can positively affect the decrease in prevalence of panic and depression among patients with coronary artery disease.*[14] *Hypertension was also the most prevalent comorbidity presented by patients undergoing CABG in other studies.*[11-13]

The average BDI was 13.0, higher than the cutoff point for classifying the absence of depression and, at the same time, in the range established for classifying dysphoria. In another Brazilian study with 78 patients in the pre-CABG period, which had sociodemographic and clinical characteristics similar to those presented by the participants of this study, the mean BDI was less than nine.[11] Most patients experienced psychological change, ranging from dysphoria to severe depression, while in other studies the percentage of patients without depressive symptoms was higher.[7,12] The literature suggests various cutoff points to classify levels of depression applying the BDI, which hinders the comparison of results. The presence of depressive symptoms in the preoperative period is associated with an increased length of hospital stay;[6,12] thus, to assess the presence of these symptoms, preoperatively, can support the planning of nursing care for coronary heart disease patients before and after CABG.

The relationship shown between family income and the extent of depression suggests that the higher the income, the lower the likelihood of depressive symptoms, although the correlation was weak. Level of education was a variable that influenced the assessment of depressive symptoms. The group of patients who had not completed elementary school had a worse evaluation on the BDI, compared with the group that had the completed elementary school or more. In a study conducted in Porto Alegre, Rio Grande do Sul, researchers found that the higher the economic level and level of education, the lower the probability of depression.[15] People who have more financial resources can enjoy better living conditions, such as leisure, education, housing, transportation, health care, and food. The decrease in depressive symptoms is associated with a higher level of education, a healthier life, decreased stress, and a strong social network. The increase of depressive symptoms is associated with poorer cognitive and physical health, increased stress, and increased risk of death.[16]

The conclusion of this study shows that most of the patients presented some psychological disorder, ranging from dysphoria to severe depression. Educational level meant a difference in the assessment of the presence of depressive symptoms. The group of patients with lower educational levels had a poorer evaluation for the presence of depressive symptoms. The results can support the planning of nursing care for patients before and after CABG, as well as the development of public health policies to ensure integrated, quality care for these patients, considering depression as a variable that can interfere with recovery after cardiac surgery. This study has some limitations, such as reduced number of participants and lack of articles that used the same cutoff point for the measurement of depression.

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