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Ansiedade e depressão entre homens e mulheres submetidos à intervenção coronária percutânea
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ORIGINAL ARTICLE

Anxiety and depression among men and women who underwent percutaneous coronary intervention

ANSIEDADE E DEPRESSÃO ENTRE HOMENS E MULHERES SUBMETIDOS À INTERVENÇÃO CORONÁRIA PERCUTÂNEA

ANSIEDAD Y DEPRESIÓN ENTRE HOMBRES Y MUJERES SOMETIDOS A INTERVENCIÓN CORONARIA PERCUTÁNEA

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ABSTRACT

A descriptive, cross-sectional, correlational study aimed to investigate the association of sex and the presence of anxiety and depression after hospital discharge in patients who underwent percutaneous coronary intervention (PCI). Fifty-nine patients undergoing PCI and receiving outpatient treatment in the first seven months after hospital discharge were evaluated. To assess the symptoms of anxiety and depression the Hospital Anxiety and Depression Scale (HADS) was used. To test the possible associations between the variables anxiety, depression and sex the Chi-square test was used with a significance level of 5%. The results indicated a greater number of women with depression and the association between the variables sex and depression was statistically significant. In relation to anxiety, cases were more frequent in males and the association between the variables sex and anxiety was not statistically significant.

DESCRIPTORS

Cardiovascular diseases
Percutaneous coronary intervention
Anxiety
Depression

RESUMO

Estudo descritivo, transversal, correlacional, que objetivou verificar a associação entre a presença de ansiedade e depressão após a alta hospitalar em pacientes submetidos à intervenção coronária percutânea (ICP), segundo o sexo. Foram avaliados 59 pacientes submetidos à ICP e em acompanhamento ambulatorial nos primeiros sete meses após a alta hospitalar. Para avaliação de sintomas de ansiedade e de depressão foi utilizada a Escala Hospitalar de Ansiedade e Depressão (HADS). Para testar as possíveis associações entre as variáveis ansiedade, depressão e sexo foi utilizado o teste de qui-quadrado, com nível de significância de 5%. Os resultados indicaram maior número de mulheres com depressão, sendo que a associação entre as variáveis sexo e depressão mostrou-se estatisticamente significativa. Em relação à ansiedade, os casos foram mais frequentes no sexo masculino e a associação entre as variáveis sexo e ansiedade não foi estatisticamente significativa.

DESCRITORES

Doenças cardiovasculares
Intervenção coronária percutânea
Ansiedade
Depressão

RESUMEN

La finalidad de este estudio fue verificar la asociación entre la presencia de ansiedad y depresión tras el alta hospitalaria en pacientes sometidos a intervención coronaria percutánea (ICP) según el sexo. Éste corresponde a un estudio descriptivo, transversal, correlacional con 59 pacientes sometidos a ICP y con seguimiento ambulatorio durante los primeros siete meses tras el alta. Para evaluar los síntomas de ansiedad y de depresión se utilizó la Escala Hospitalaria de Ansiedad y Depresión (HADS). Para testar las posibles asociaciones entre las variables ansiedad, depresión y sexo, se utilizó el test ji-cuadrado con nivel de significancia del 5%. Los resultados indicaron un mayor número de mujeres con depresión, siendo la asociación entre las variables sexo y depresión estadísticamente significativa. Respecto a la ansiedad, los casos fueron más frecuentes en las personas de sexo masculino y la asociación entre las variables sexo y ansiedad no fue estadísticamente significativa.

DESCRIPTORES

Enfermedades cardiovasculares
Intervención coronaria percutánea
Ansiedad
Depresión

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INTRODUCTION

Cardiovascular diseases are the leading cause of death worldwide. If the current trends are maintained, it is estimated that the worldwide mortality from cardiovascular diseases will increase from 16.7 million in 2002 to 23.3 million in 2030[1]. Among cardiovascular diseases, the coronary artery disease (CAD) stands out due to its high morbidity and mortality. In Brazil there were over 335,000 deaths from diseases in the circulatory system in 2011, accounting for 28.6% of total deaths in the country[2]. Among these deaths 103,486 were due to CAD, accounting for 8.8% of deaths in Brazil that year [2]. In the United States, between 2007 and 2010 over 15 million people had CAD, a prevalence of 6.4% in the American population[3]. In addition, in 2009, the CAD caused approximately one in six deaths in the United States[3].

The percutaneous coronary interventions (PCI), included in the set of available technologies for treating CAD, include balloon angioplasty (percutaneous transluminal coronary angioplasty), implantation of intracoronary stents and other interventions with the use of catheters for treating coronary atherosclerosis[4].

Psychological factors such as depression and anxiety are related to the development, manifestation and progression of CAD. The prevalence of major depression in patients with CAD is approximately three times higher than in the general population[5]. Furthermore, depression is related to pathophysiological mechanisms of CAD, including unhealthy lifestyle and lower treatment adherence[6]. In a meta-analysis on the relationship between depression and CAD, an association of these variables with etiological factors and prognosis was observed[7].

Psychological factors such as depression and anxiety are related to the development, manifestation and progression of coronary artery disease.

Currently, there is growing evidence linking anxiety disorders to the development of cardiac events in the general population[5]. Individuals with anxiety disorders are prone to unhealthy lifestyles, which is an important risk factor for patients with CAD[5]. Anxiety and depression also increase the risk of major adverse cardiac events in patients with CAD, including death from cardiac events and myocardial infarction[8].

Studies indicate that symptoms of anxiety and depression are more severe in women with CAD compared with men[9-10]. The results, however, are inconclusive. Furthermore, studies of patients undergoing PCI are scarce.

Given these considerations, the aim of this study was to investigate the association between sex and the presence of anxiety and depression after hospital discharge in patients who underwent PCI.

METHOD

A descriptive, cross-sectional, correlational study conducted in a teaching hospital in the state of São Paulo, with 59 patients who underwent PCI and were receiving outpatient treatment in the first seven months after hospital discharge. This was a convenience sample in which the inclusion criteria were: being over 18 years old, outpatients with follow-up visits within two to seven months after PCI, with ability for verbal and written communication and of understanding the free and informed consent form (IC) as well as the questionnaire. The exclusion criterion was the presence of motor impairment (e.g., use of wheelchairs), due to its influence on issues related to physical activity. The chosen period of two to seven months is justified by the expectation that within this period the patients would have already returned to their previous routine and employment activities[11].

The research project was approved by the Research Ethics Committee of the *Hospital das Clínicas da Faculdade de Medicina de Ribeirão Preto* (Project ID number HCRP 7333/2010). The participants signed two copies of the IC. One copy was filed by the researcher and the other given to the participant, in accordance with Resolution 466/2012 of the National Health Council[12].

Data collection occurred from July 2011 to January 2012 during the return of outpatients for follow-up visits, through individual interviews and analysis of medical records, with an average duration of one hour. Participants responded to the instruments of sociodemographic and clinical characterization with the following items: hospital registration number, date of birth (for subsequent calculation of the age in years), date of interview, date of PCI, sex, marital status, employment status, years of education, number of sites of PCI, PCI type, prior treatment of heart disease, comorbidities (hypertension, diabetes, dyslipidemia and obesity) and physical activity. Patients were also asked to respond how they considered their lives in relation to stress.

The symptoms of anxiety and depression were measured via the validated and adapted version for Portuguese of the Hospital Anxiety and Depression Scale (HADS)[13]. It contains 14 multiple-choice questions, divided into two subscales: anxiety and depression. In the Portuguese validation, the Cronbach's alpha obtained for the two subscales was 0.68 and 0.77, respectively[13]. Each consists of seven items and each item has a score ranging from zero to three. The overall range in each subscale varies from zero to 21 and higher values indicate more symptoms of anxiety and depression. In both, participants were grouped into two categories: non-case (0-7) and case (8-21)[14].

Data were entered and analyzed using the Statistical Package for Social Science (SPSS) version 17.0. For categorical variables it was done a descriptive analysis of frequency. For numerical variables it was done an analysis of measures of central tendency (mean) and variability (standard deviation). To test the possible associations between the variables anxiety, depression and sex was used the Chi-square test, with a significance level of 5%.

RESULTS

The majority of study participants were female (54.2%). In the comparison of sociodemographic variables according to sex, in both groups there was predominance of individuals married or in consensual marriage (88.9% for males and 71.9% for females) and more than 10% of women were widows. The percentage of active men was slightly higher than that of women (14.8% and 12.5%, respectively) and the median family income was also higher for the group of men (R$ 1,500.00 and 1,000.00 respectively). There was no difference between the groups regarding mean age and years of study. In Table 1 the values are displayed in descending order according to the predominant group in each of the variables.

Table 1 – Descriptive analysis of sociodemographic and clinical characteristics of participants according to sex – Ribeirão Preto, SP, Brazil, 2012.

Variable	Masculino		Feminino	
	N (%)	Média (DP)	N (%)	Média (DP)
Sex	27(45.8)		32 (54,2)	
Marital status				
Married/consensual marriage	24(88.9)		23 (71,9)	
Widowed	1(3.7)		4 (12,4)	
Divorced	0		3 (9,4)	
Single	2(7.4)		2 (6,3)	
Employment status				
Inactive	23(85.2)		28 (87,5)	
Active	4(14.8)		4 (12,5)	
Age		58.3(12.5)		58.4 (7.2)
Years of study		4.9(3.7)		4.5 (4.0)
Comorbidities				
Hypertension	24(88.9)		29 (90,6)	
Dyslipidemia	22(81.5)		27 (84,4)	
Obesity	7(25.9)		13 (40,6)	
Diabetes	8(29.6)		12 (37,5)	
Previous treatment of heart diseases				
No	20 (74,1)		19 (59,4)	
Yes	7 (25,9)		13 (40,6)	
Number of PCI sites				
2	7 (25,9)		17 (53,1)	
1	14 (51,9)		11 (34,4)	
3 or more	6 (22,2)		4 (12,5)	
PCI type				
Stent	21 (77,8)		26 (81,3)	
Stent and balloon	6 (22,2)		5 (15,6)	
Balloon	0		1 (3,1)	
Perform physical activity	14 (51,9)		8 (25,0)	
Believe to have a stressful life	20 (74,1)		25 (78,1)	

Women had more diagnosed comorbidities than men, including hypertension, diabetes, dyslipidemia and obesity. They have also reported previous treatment for heart disease (myocardial infarction, angina, arrhythmia, congestive heart failure and dyspnea) more frequently than men (40.6% and 25.9%, respectively). In 51.9% of men, the PCI was performed in a single place, whereas in women the procedure was more frequent in two locations (53.1%), with predominance of use of stent in both groups (Table 1).

Eighteen men (66.7%) and 18 women (56.3%) had anxiety symptoms, and the difference between groups was not significant. There was a greater number of women with depression (43.7%) compared to men (14.8%) and the difference between groups was significant (p=0.01).

Table 2 – Descriptive analysis of cases of anxiety and depression of participants according to sex and values of probability (*p*) associated with the Chi-square test – Ribeirão Preto, SP, Brazil, 2012.

Variable	Male		Female		p-value
	N	%	N	%	
Anxiety					
Case	18	66.7	18	56.3	
Non-case	9	33.3	14	43.7	0.41
Depression					
Case	4	14.8	14	43.7	
Non-case	23	85.2	18	56.3	0.01

DISCUSSION

The characterization of study participants regarding marital status and age resembles other studies of people with CAD[15-16], as well as in relation to a higher family income for the group of men[16]. However, in this study there was a greater number of women, and in other studies that addressed individuals with CAD the number of men was greater[15-16].

The largest number of depression cases in women with CAD compared to men corroborates literature data[17-19]. In a study that included patients with CAD a year after diagnosis, there was a higher frequency of depressive symptoms in women, compared to men. When assessing depression via the Center for Epidemiological Studies Depression Scale (CESD), the mean found for women was 5.7 and for men it was 4.5 (p<0.001)[17].

In another study with patients undergoing PCI, more women reported having depressive symptoms than men. The CESD was also used, and scores of 16 or higher meant presence of depressive symptoms. The frequency of depressive symptoms was 43% for women and 29% for men (p<0.01). According to the authors of the study, this disparity can be explained by the higher frequency of stressful personal events (p<0.05) and the lower perception of social support, especially for household activities (p<0.001)[18].

In a study that aimed to understand and describe the stories of life of women with depression by the qualitative method and the methodological referential of Oral History, the authors observed that women experience depression from a historical perspective, remembering important facts that accumulated and may have triggered the depression[20]. These facts may be related to the higher frequency of stressful life events and lower perception of social support, described as factors related to the higher frequency of depression in women.

In relation to anxiety, in this study the number of cases was slightly higher in males comparing to females. However, literature data show a higher prevalence of anxiety in women with CAD. In a study with CAD patients participating of a cardiac rehabilitation program, the assessment of anxiety was done using the Anxiety Disorders Interview Schedule-IV (ADIS-IV), which assesses both the current episodes of anxiety as those throughout life.

There was a greater percentage of women with at least one current anxiety disorder, compared to men (58.3% and 25.5%, respectively, p<0.001). Women were also more likely to experience any anxiety disorder at some point in their lives compared to men (70.8% and 33.3%, respectively, p<0.001)[21].

Studies including the comparison of mental health of men and women with CAD assessed by the HADS are scarce. Authors compared the means of the subscales of anxiety and depression and found a higher score of anxiety among women than among men: 5.3 and 3.3, respectively (p=0.03). In relation to depression, the mean scores of women were also higher (3.8 for females and 2.5 for males, p = 0.07)[22].

In another study of patients with CAD, the HADS was used to assess anxiety and depression, considering three subscales: negative affect, autonomic anxiety and depression. The evaluations were performed during hospitalization, six, 12 and 24 months after discharge. In relation to sex, significant effects were found in the subscale of negative affect and women had higher scores than men in all evaluations (p<0.001). Women also had higher scores than men in the subscales of autonomic anxiety (p<0.001) and depression (p=0.002) considering all the evaluations (in hospitalization and six, 12 and 24 months)[23]. Women also practiced less physical exercise than men (p<0.001) and there were statistically significant relationships between the variable physical exercise and the variables negative affect, autonomic anxiety and depression[23].

The frequency of cases and non-cases of anxiety and depression was also analyzed considering three categories in each subscale: non case (0-7), possible cases (8-10) and probable cases (11-21). In all assessments, the percentage of women with probable and possible cases of anxiety and depression was higher than men[23]. However no statistical analysis was performed to compare the percentage in each category according to sex.

The limitation of this study is the small sample size. Future studies are needed to explore the reasons related to the greater frequency of depression in females. It is important to evaluate variables that may be related to depression, including social support, physical activity practice, the perceived health status and physical aspects. Qualitative studies can also be carried out to explore aspects related to the understanding of the construct of depression in the view of women with CAD.

CONCLUSION

The group with depression showed a higher percentage of women, with statistically significant association between the variables sex and depression, results that corroborate literature data. In relation to anxiety, cases were more frequent in males, however discreetly, and the association between the variables sex and anxiety was not statistically significant.

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