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Sociodemographic characteristics and negative emotional states in patients with cardiovascular disease with surgical indication

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CVD: cardiovascular diseases

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ABSTRACT

Introduction: As time has passed, Health Psychology has become indispensable in the field of study and treatment of cardiovascular diseases.
Objective: To describe the sociodemographic characteristics and negative emotional states of patients with cardiovascular disease who are awaiting surgery.
Method: A descriptive study was conducted with 63 patients, with indication of cardiac surgery at the *Instituto de Cardiología y Cirugía Cardiovascular* of Havana, Cuba, between March and June, 2015. Sociodemographic characteristics were analyzed and the emotional states, anxiety and depression, were evaluated. For this evaluation, the State-Trait Anxiety Inventory (STAI) and the Beck Depression Inventory were applied.
Results: The mean age was 59 years, with a predominance of those equal or older than 60 (49.2%). The male gender (63.5%), the married or consensual union (63.5%), the average level of technical education (30.2%), and the employment relationship (44.4%) were also predominant. Most patients presented medium and high levels of anxiety as a negative emotional state, both of trait and state; about half of the patients (46%) had different stages of depression.
Conclusions: The strong emotional states of anxiety and depression are present in patients with cardiovascular disease, who are awaiting surgical treatment. Most of them had mean and high levels of anxiety trait and anxiety state, and different levels of depression.
Key words: Medical Psychology, Cardiovascular Diseases, Anxiety, Depression

Características sociodemográficas y estados emocionales negativos en pacientes con enfermedad cardiovascular con indicación quirúrgica

RESUMEN

Introducción: La Psicología de la Salud con el paso del tiempo se ha tornado imprescindible en el ámbito del estudio y tratamiento de las enfermedades cardiovasculares.
Objetivo: Describir las características sociodemográficas y los estados emocionales negativos de pacientes con enfermedad cardiovascular que se encuentran en espera de tratamiento quirúrgico.
Método: Se realizó un estudio descriptivo con 63 pacientes que tenían indicación

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de cirugía cardíaca en el Instituto de Cardiología y Cirugía Cardiovascular de La Habana, Cuba, entre los meses de marzo y junio de 2015. Se analizaron las características sociodemográficas y se evaluaron los estados emocionales negativos de ansiedad y depresión. Para dicha evaluación se aplicaron el Inventario de Ansiedad Rasgo-Estado (IDARE) y el de depresión de Beck.

Resultados: El promedio de edad fue de 59 años, con predominio del grupo de 60 y más años (49,2%). Fueron predominantes también el sexo masculino (63,5%), los casados o en unión consensual (63,5%), el nivel de escolaridad técnico medio (30,2%) y la vinculación laboral (44,4%). Gran parte de los pacientes presentaban niveles medio y alto de ansiedad como estado emocional negativo, tanto la de rasgo como la de estado; y cerca de la mitad de los pacientes (46%) presentaba diferentes estadios de depresión.

Conclusiones: Los estados emocionales agudos de ansiedad y depresión están presentes en los pacientes con enfermedad cardiovascular que se encuentran en espera de tratamiento quirúrgico. Gran parte de ellos presentaba niveles medio y alto de ansiedad rasgo y ansiedad estado, y diferentes niveles de depresión.

Palabras clave: Psicología médica, Enfermedades cardiovasculares, Ansiedad, Depresión

INTRODUCTION

Many investigations on cardiovascular diseases (CVD) have been carried out, and the particularities of this health problem that affects the whole world are still being investigated. Several disciplines have undertaken studies, as attention to CVD has been characterized by multidisciplinary action. The Psychology of health as a recognized discipline including Psycho-Cardiology[1-3], which will continue to be specified in Psychology of heart surgery, also makes its contribution to this important matter.

Psychologist's participation within the multidisciplinary groups that assist patients with CVD, specifically those with indication for cardiac surgery, is becoming increasingly necessary. Patients present certain socio-psychological characteristics that make them prone to illness, as well as the negative emotional states generated by the disease itself, with the high levels of stress caused by its symptoms and the diagnostic and therapeutic procedures they have to undergo.

CVD is prevalent in people over 55 years of age, especially in men, according to the latest data from the *Anuario Nacional de Estadísticas de Cuba* (Cuban National Statistical Yearbook)[4,5]. Risk factors are expressed in both sexes, but there are physiological and pathological differences, for example: women have, generally, thinner coronary arteries, and different electrophysiological and platelet composition properties, among other aspects[6].

Frequently, scientific literature reports high levels of anxiety and depression, before and after surgical intervention. Pre-operative anxiety increases vulnerability to infections, hospital stay, postoperative pain sensation, and slows recovery. For its part, depression is the psychic state in which people have experiences of sadness, displeasure, and psychic and motor slowness. Generally reduces the desire to feed and lowers self-esteem; in addition, it stimulates pessimistic ideas that can become suicidal, depending on the levels of depression[7].

Therefore, the objective for this research has been to describe the sociodemographic characteristics and the negative emotional states found in patients with CVD who are awaiting surgical treatment.

METHOD

Type of study

A descriptive cross-sectional study was carried out.

Patients

It included 63 patients who came in the *Instituto de Cardiología y Cirugía Cardiovascular* from Havana, Cuba, with some heart disease that had criteria for cardiovascular surgery in the period between March and June 2015.

They all agreed and signed their consent to participate in the investigation.

Variables

Demographic variables (age, gender, marital status, level of education and employment situation) were evaluated, as well as negative emotional states related to anxiety and depression.

A model was developed to collect the general data obtained during the preoperative period, and Beck Depression and Trait-State Anxiety inventories were applied[8-11].

Anxiety can be classified as personal or trait, situational or state, and pathological[8]. The distinction according to its clinical expression, its experiential structure, its dynamics or course, its repercussion on psychic processes and personality, and the type of associated self-regulation mechanism was performed according to the recommendations of Hernández Meléndrez[7,8,12].

Information processing

The obtained data were analyzed and processed in the statistical package SPSS version 18.0. Frequency and its proportion were used as an information summary.

RESULTS

Socio-demographic aspects

The average age of the 63 patients studied was 59 years, ranging from 34 to 78 years. Almost half were 60 and older (**Figure 1**), followed in order of frequency by those who were in the 50-54 age group (20.6%). Male predominated, 40 patients (63.5%).

In relation to marital status, predominated married or consensual union (63.5%), as shown in **Table 1**; and **Table 2** shows that the highest number of patients have a middle-level technician (30.2 %), followed by those who reached Senior year (23.8%) and College students (19.0%).

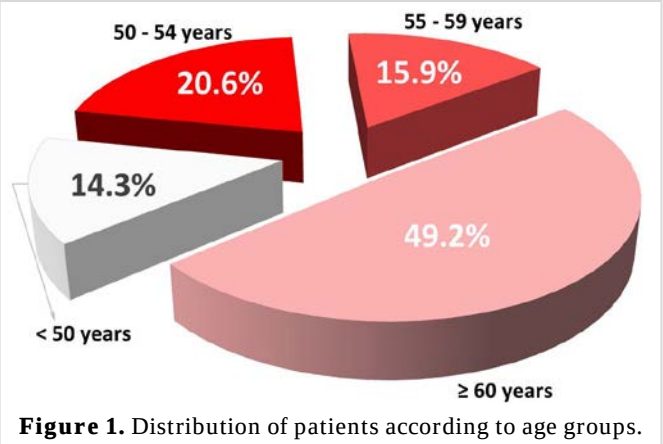

Figure 1. Distribution of patients according to age groups.

Table 1. Distribution of patients according to their marital status.

Marital status	Nº	%
Married or in a consensual union	40	63,5
Divorced	8	12,7
Single	12	19,0
Widow	3	4,8
Total	63	100

Table 2. Distribution of patients according to educational level.

Educational level	Nº	%
College student	12	19,0
Technician graduate	19	30,2
12th grader	15	23,8
9th grader	10	15,9
6th grader	3	4,8
Elementary	4	6,3
Total	63	100

Table 3. Distribution of patients according to their employment situation.

Employment situation	Nº	%
Working	28	44,4
Not working	5	7,9
Retiree	20	31,8
Housewife	6	9,5
Report	4	6,3
Total	63	100

With respect to the employment situation (**Table 3**), most of the cases studied were working people (44.4%) while waiting to restart work activities. They are followed in order of frequency by retirees (31.8%).

Negative emotional states

It was found that a high percentage of patients −29, representing 46%− experienced certain level of depression (**Table 4**), although low (27%) predominated. Most frequent symptoms of depression were fatigue, difficulty to work, concern about health, irritability, sleepiness and loss of sexual interest.

On the other hand, anxiety is the most studied among negative emotional states in the CVD because are those with highest incidence on patients, from the lowest to the highest level, and in this studied population there is more incidence of middle and high anxiety levels, as trait and as state (**Figure 2**).

Table 4. Distribution of patients according to their levels of depression.

Levels of depression	Nº	%
High	4	6,3
Middle	8	12,7
Low	17	27,0
None	34	54,0
Total	63	100

DISCUSSION

It has been proven that heart conditions are appearing more and more frequently at early age, they not only affect older people, and respond among other causes, to inadequate lifestyles that are critical in this type of ailments, as well as its genetic component. However, in this study the presence of CVD was again found in people close to the elderly, which coincides with other investigations that have shown that the risk of suffering from them increases after 55 years of age, time in which the incidence in men is greater[4 5,13,14].

Age related to CVD mortality has been decreasing in the last four decades, although less evident in women, because this disease is known to affect younger men and older women[4,15]. In the former, smoking, low-fiber diet, low vitamin C levels and high blood viscosity are more frequent. On the other hand, diabetes mellitus, arterial hypertension, smoking, hypercholesterolemia and obesity contribute more to cardiovascular risk in women[15-17].

A current research[13] has reported that having a stable partner is a protective factor for cardiovascular health, and Molloy[18] argues that many other studies in several countries have confirmed that the association between CVD and its mortality are closely linked to marital status, hence single men and women are more likely to get sick and die.

Undoubtedly, social and marital support is a fun-

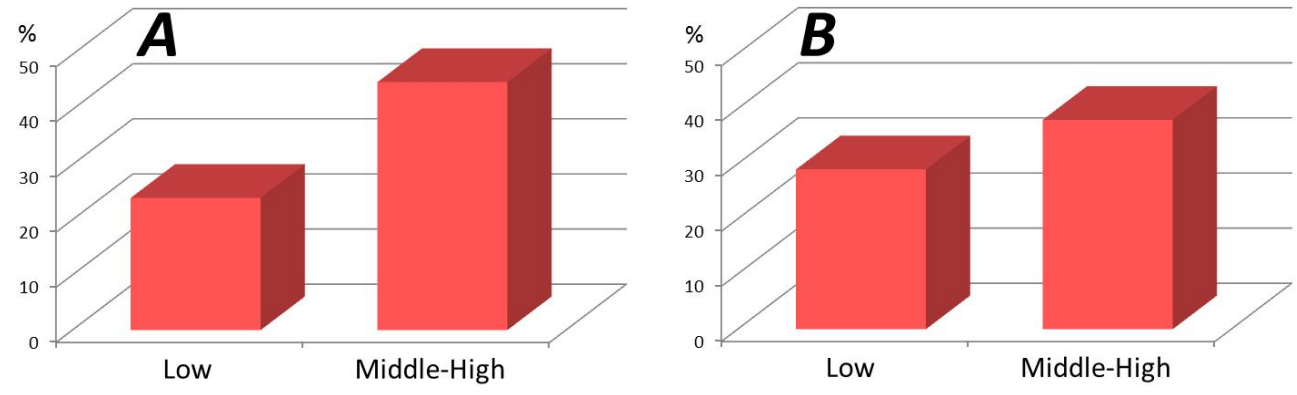

Figura 2. Anxiety level. **A.** Trait. **B.** State.

damental protective factor in any disease process; however, the fact that marital status is a CVD predictor needs demonstration. In fact, patients in this study have a demonstrated severe CVD, for which they will be operated on, and most were married or in consensual union.

Marriage is associated with low risk of illness and fewer functional limitations of patients[19,20] . But not only is marital status important, but also the quality of the relationship, which is associated with cardiovascular risk. It is more noticeable in women than in men, and in older people couples compared to the younger ones[21]. Marital satisfaction is determinant in the spouses' health, and this can vary even between countries[22]. In addition, it has been suggested that the predisposition to become ill is more frequent in single or widowed individuals[13, 14,23].

About three-quarters of the patients had at least a Bachelor's degree in Science and Letters; which shows that good academic preparation was not related to the development of their CVD. Nor can it be said that the level of education was linked or not to the practice of adequate lifestyles in these patients because this is not the only factor, nor the determinant, to develop CVD. This differs from what was proposed by Nazzal *et al.*[24] who has also found that several studies report that people with intellectual training, higher level of education and academic achievement are more likely to reduce cardiovascular risk factors.

Batty *et al.*[25] state that the level of education is not associated with the patients' mortality. This association is more direct when the patients are over 65 years and among women with average preparation.

Another study[26] which followed up more than 18.600 adults in Denmark over two decades found that those with a higher level of education (more than 10 years of schooling) were 39% less likely to be hospitalized for chronic heart failure than those with less than eight years of schooling. Prevention through a healthy lifestyle is extremely important and more studies are required to learn why men and women with low levels of education are at greater risk of being hospitalized for this disease. One possibility that experts consider is that people with lower levels of education and incomes tend to receive less determinant treatments early[27].

There are occupations that are stress generators and the psychic tension is higher in people with low job qualification than in professionals, according to experts from the University College London, who analyzed thirteen investigations involving more than 200.000 people[28]. Certain occupations such as drivers, executives and managers appear to be more susceptible to cardiovascular risk[29].

Other studies analyze the associations between specific psychosocial dimensions and specific physiological alterations. According to Zimmermann *et al.*[29], Niedhammer, in a sample of 13.226 workers, concluded that psychosocial factors were associated with the presence of hypertension, hyperlipidemia and overweight. This author describes how the group of men with low decision-making power on their task present an increased risk of hypertension and increased alcohol intake compared to those with a high decision-making power and social support, in whom overweight was commonly found[29,30].

Negative emotional states are constantly being studied, within them, with more emphasis on CVD, anxiety and depression[31-36]. Just like this research, the relevance of the anxiety state becomes increasingly apparent, which may be associated with Pattern A behavior.

Labour relationship is added to the stress generated by the disease itself, due to the uncertainty whether they can be reinserted in their work environment after surgery; in addition, a large number of these patients have administrative positions and others are associated with military life.

Retirees, the second predominant group in this research after those with labour contract, are older; which on the one hand, is an important cardiovascular risk factor, and on the other, of anxiety and depression; because they also had some kind of responsibility, and retirement as such generated much discomfort in some of them.

In general, many of these patients undergo the surgical process not having adequate emotional conditions which leads to a slower postoperative recovery with complications possibilities due to their lack of cooperation for surgery and postoperative stage.

Depressed patients are more likely to die within 10 years from diagnosis than those who were never depressed and kept more control over their negative affective states[37]. Parra *et al.*[38] state that regarding cardiac surgery, more emphasis is placed on the preservation of cognitive functions than on mental health functions, which does not coincide with our results.

Anxiety state, a temporary reactive situation that arises before specific non-habitual conditions, impedes the education and preparation processes to cope with the surgical process. It depends directly on the individual's assessment of the concrete situation perceived as threatening, and is characterized by the intensive but not stable perception of one's own problems and experiences, by a certain "one-sidedness" of psychophysiological manifestations, and by the absence of stable alterations of the psychic processes[39]. The lower his level is, or absent, the more likely it will be to achieve positive changes in the patient. With the very anxious ones, work must be done to lower those levels before any procedure, because their understanding and cooperation are not the same.

That is why is critical to take care of these states, stress treatment, which must be closely followed in each of the surgery phases and what the patient goes through in cardiovascular rehabilitation; as well as multidisciplinary team work: psychologists, psychiatrists, cardiologists and nurses. There are even patients who had psychiatric treatment prior to hospitalization and it could be discontinued.

The anxious personality, as it has been raised on many occasions, has a greater tendency to associate with CVD, and it is accompanied later by the stress generated by both disease and surgery.

Within the set of psychological responses in the surgical context, anxiety is considered to be predominant and, in fact, has been the most studied. Previous research carried out at the *Centro de Investigaciones Médico Quirúrgicas (CIMEQ)* highlights it as the most frequent response[40].

In a study by Tully *et al.*[41] and other investigations[42,43] depression was found to be an element of the spectrum of discomfort, such as anxiety, post-traumatic stress and panic, which adversely affect patients. In fact, most emotional risk factors for cardiovascular events share a common predisposition towards negative effect, which they also know as neurosis.

Depression has a negative impact on morbidity and mortality during the course of the disease. Anxiety and post-traumatic stress seem to be interrelated with cardiological conditions in a very similar way, and probably contribute even more negatively to lethal critical events than depression. In these states, patients experience life-threatening and hopelessness; they are considered as a risk factor for the development of coronary artery diseases and deteriorate the results of cardiac rehabilitation efforts[44].

The way the patient confronts his anxiety, fear, anger or depression in response to surgical threat will depend to a large extent on the significance that his illness has for him at that precise temporo-spacial and circumstantial moment it takes place.

Cognitive-behavioral psychotherapies have been empirically validated in the treatment of depression and anxiety in patients with CVD. That is why it is necessary to increase their attention in the interventions to increase the positive psychic states in this type of patients.

CONCLUSIONS

The sociodemographic characteristics of these patients do not differ from those of the other patients with CVD in this geographical environment. Acute emotional states of anxiety and depression were present in patients with CVD who were awaiting surgical treatment. Most of them had middle and high levels of trait anxiety and state anxiety, and different levels of depression.

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