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RESEARCH

Influence of sociodemographic and clinical characteristics at the impact of valvular heart disease

Influência das características sociodemográficas e clínicas no impacto da doença em valvopatas

Influencia de las características sociodemográficas y clínicas en el impacto de la enfermedad en válvulas del corazón

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ABSTRACT

Objective: to analyze the sociodemographic and clinical characteristics of patients with valvular heart disease and to verify the influence of these variables on the impact of valve disease in daily life. **Method:** the study involved 86 outpatients. Data collection was performed in two stages – face-to-face interview for sociodemographic and clinical characterization and through telephone contact for the application of the Instrument to Measure the Impact of Valvular Heart Disease on Patient's Everyday Life (IDCV). Data were analyzed through descriptive statistics and multiple regression analysis. **Results:** it was noticed that the total score of IDCV and its domains were influenced by age, schooling, presence or absence of symptoms, use or not of diuretic. **Conclusion:** The impact of the disease was influenced by sociodemographic and clinical variables. The results provide subsidies for the design of nursing interventions aimed at reducing the impact of the disease on the patient's daily life with valve disease.
Key words: Nursing; Impacts on Health; Valvular Heart Diseases; Impact Profile of the Disease; Questionnaires.

RESUMO

Objetivo: analisar as características sociodemográficas e clínicas dos pacientes com valvopatia e verificar a influência dessas variáveis no impacto da valvopatia no cotidiano. **Método:** participaram do estudo 86 pacientes em seguimento ambulatorial. A coleta de dados foi realizada em duas etapas - entrevista presencial para caracterização sociodemográfica e clínica e por meio de contato telefônico para aplicação do Instrumento para Mensuração do Impacto da Doença no Cotidiano do Valvopata (IDCV). Os dados foram analisados através de estatística descritiva e análise de regressão múltipla. **Resultados:** constatou-se que o escore total do IDCV e seus domínios foram influenciados pela idade, escolaridade, presença ou não de sintomatologia, uso ou não de diurético. **Conclusão:** o impacto da doença foi influenciado por variáveis sociodemográficas e clínicas. Os resultados fornecem subsídios para o delineamento de intervenções de enfermagem com vistas à redução do impacto da doença no cotidiano do paciente com valvopatia.
Descritores: Enfermagem; Impactos na Saúde; Doenças das Valvas Cardíacas; Perfil de Impacto da Doença; Questionários.

RESUMEN

Objetivo: analizar las características sociodemográficas y clínicas de los pacientes con enfermedad de las válvulas del corazón y verificar la influencia de esas variables en el impacto de la enfermedad en la vida cotidiana. **Método:** participaron del estudio 86 pacientes con seguimiento ambulatorio. La recolección de datos fue realizada en dos etapas - entrevista presencial para caracterización sociodemográfica y clínica y por medio de contacto telefónico para aplicación del Instrumento para Medición del Impacto en lo Cotidiano de la Enfermedad de Válvula (IDCV). Los datos fueron analizados a través de estadística descriptiva y análisis de regresión múltiple. **Resultados:** se constató que la puntuación total del IDCV y sus dominios fueron influenciados por la edad, escolaridad, presencia o no de sintomatología, uso o no de diurético. **Conclusión:** el impacto de la enfermedad fue influenciado por variables sociodemográficas y clínicas. Los resultados otorgan subsidios para el delineamiento de intervenciones de enfermería con vistas a la reducción del impacto de la enfermedad en lo cotidiano del paciente con enfermedad de válvula.

Palabras clave: Enfermería; Impactos en la Salud; Enfermedades de las Válvulas Cardíacas; Perfil de Impacto de la Enfermedad; Cuestionarios.

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INTRODUCTION

In recent decades, chronic diseases have played an important role in morbidity and mortality of the world population reaching the elderly and young people of working-age[1]. Among the chronic diseases, there is the cardiovascular disease (CVD) representing a large number of hospitalizations, are the major cause of death throughout the country and also one of the diseases that constitute a major burden to the health system[2].

In the CVD's group, valvulopathies represent a disease in evolution, resulting from various factors, including the increase of degenerative valve disease, due to the population aging and those of rheumatic origin[3].

The prevalence of valvular heart disease, although to a lesser magnitude compared to the prevalence of other CVD, represents one of the main sources of health care and health resources consumption[3]. Despite the high incidence of valvular heart disease in Brazil, data on its actual prevalence and clinical profile are scarce[2].

Living with a chronic disease such as valvular heart disease, with its symptoms and the stigma that a heart disease can represent, results in physical, psychological and social commitment since this patient lives with the possibility of a new decompensation or worsening the clinic condition despite the appropriate treatment[4-5]. Therefore, the assistance to these patients should include, in addition to care related to biological aspects, those related to psychosocial variables, especially considering their health self-perception[5-6].

Health self-perception refers to the interpretation of the individual about health experiences based on their knowledge and information. This judgment is often influenced by their experience and by social and cultural norms[6]. Also, studies suggest that variables not related to the disease, such as low socioeconomic level (characterized by total years of study, by the performed activity and by income) and behavioral aspects, such as smoking, alcoholism, and illicit drug use also influence the concept of health perception[7].

Kusumota[8] reports that variables such as age, gender, schooling, presence of comorbidities, among others, are important factors in determining the impact of the disease in patients with chronic disease.

Thus, considering the importance of deepening the knowledge about the impact of valvular heart disease in daily life, this study aimed to analyze the sociodemographic and clinical characteristics of patients with valvular heart disease and to verify the influence of these variables on the impact of valvular heart disease in the daily life of these patients. The findings of this study provide subsidies for the development of nursing interventions aimed at reducing the impact of the valvular heart disease on outpatient's every day.

METHOD

It is an exploratory study performed in a specialized cardiology clinic of a large university hospital in the state of São Paulo.

86 patients with mitral valvular disease and/or aortic were part of this study, of both sexes, aged over 18 years old, submitted to clinical and/or surgical treatment in outpatients of this service. Patients who presented inability to effective oral verbal communication were excluded.

As this study was clipping of progress study aimed to validate the CVID by the patients with valvular heart disease and outpatients[9], the sample size was estimated according to the recommended for validation studies, i.e., 100 participants[10]. However, due to losses in the data collection stage, the final sample consisted of 86 patients.

Data were collected through personal interview carried out individually by the researcher to obtain the sociodemographic and clinical data and by telephone contact for the application of CVID, as specified below:

- First step: the patient is in the initial approach and explanations about the study objectives and the patient's agreement obtainment to participate in the study by signing the Informed Consent (IC). The patient was instructed that the participation in the study would involve the application of a questionnaire through telephone contact. After consent, available data recording method was employed to obtain information from medical records that allowed the sociodemographic and clinical characterization of study participants. Then, through the

structured interview technique, the sociodemographic and clinical not available data in the medical records were obtained.
- Second step: the CVID was applied through telephone contact of the participants who agreed to participate in the research in the first stage. The literature recommendations were carefully followed for data collection through telephone contact. . In this sense, the study by Costa et al.[11] pointed to the invariance in performance scales used in different application groups - in person or by telephone, suggesting that telephone contact is a reliable strategy for obtaining data compared to attendance application, besides being effective, low-cost and accessible.

Sociodemographic and clinical characterization

Used for survey of interest information to outline the sociodemographic and clinical profile of the participants, the instrument was developed by Mendez et al.[12], composed of open and closed questions, divided into two large items.:

- Sociodemographic characterization: allows data collection, such as: age, gender, race, schooling, marital status, with whom they live, employment, individual and family monthly income and origin.
- Clinical characterization: data collection, such as: medical diagnosis, type of treatment, time since diagnosis of valvular heart disease, signs, and symptoms of the last month and medicines in use.

Instrument to measure the Impact of Valvular Heart Disease on Patient's Everyday Life (CVID)

A tool developed and validated by Padilha et al.[9,13] to evaluate the impact of valvular heart disease in daily life activities of the patient. The CVID is composed of two scales, the first measures the perceptions regarding the impact of the disease. The patient should answer each item using a Likert scale of five points, ranging from *(1) strongly disagree to (5) strongly agree*. The second scale measures the evaluation that the subject does on each consequence of valvular heart disease mentioned in the first scale (happening or not in their life) requesting to the participant to situate its evaluation for a Likert scale, whose answers range from *(1) very bad (5) very good*. The items are divided into four domains: Physical disease impact - symptoms (11, 12 and 13 items), Impact of disease on daily activities (5, 7, 9, 10 and 14), Social and emotional impact of the disease (2, 3, 4 and 6 items) and Adaptation to the disease (1 and 8). To determine the final score of CVID, all items of Part B were reversed. Items 1, 5 and 8 of Part A, which correspond to perceptions related to the favorable impact also had their inverted scores. The score of each item corresponds to the product of the scores obtained in Parts A and B of CVID and can generate a minimum score of 1 and a maximum of 25 for each evaluated affirmative. The closer to the score 1, the lower the impact perceived by the subject to a given belief and the closer to 25 the stronger the impact. For the final calculation of the measure of the impact, it is made the sum of all the obtained products. The final score of the instrument may vary from 14 to 350; the lower the score, the less the patient perceives the impact of the negative consequences of the disease in their life and does not evaluate as bad those consequences, if occurs (i.e., the lower the impact of the disease); the higher the score it means the patient recognizes the occurrence of the negative consequences of the disease on their lives and those consequences are, in fact, interpreted as negative (i.e., the greater the impact of the disease on daily activities). In the study that originated the instrument, it was found satisfactory internal consistency for the total CVID through Cronbach's alpha coefficient ($\alpha = 0.86$). The other domains also show evidence of satisfactory internal consistency - *Physical Impact of Disease - Symptoms* ($\alpha = 0.71$); *Impact of Disease in Activities of Daily Living* ($\alpha = 0.79$); *Social and emotional impact of the disease* ($\alpha = 0.72$) [9,13]. *The adaptation to the disease* domain, as in other studies that evaluated the psychometric properties of the instrument[9,13-15], has shown no evidence of reliability ($\alpha = -0.008$). In the present study, it was found Cronbach's alpha = 0.86 for the total score of CVID.

Data analysis

The collected data were inserted into an electronic spreadsheet (Excel *software*, 2003) and transferred to the SAS - *System for Windows (Statistical Analysis System)*, version 8.2, for the following analyzes:

- *Descriptive:* with a confection of frequency tables, position measurements (medium, median, minimum and maximum) and dispersion (standard deviation) for data of sociodemographic and clinical instrument and CVID scores.
- *Reliability*: with the use of Cronbach's alpha coefficient to estimate the internal consistency of CVID, i.e., homogeneity and accuracy of the items. It was established as evidence of satisfactory internal consistency, the value of Cronbach's alpha coefficient > 0.70.
- *Multiple linear regression:* with *Stepwise* criterion to test the influence of sociodemographic and clinical variables on the impact of the disease, evaluated by CVID.

It was adopted as significance level of $p < 0.05$.

The study was approved by the Research Ethics Committee of a university in the state of São Paulo, through an addendum to the opinion of approval of progress study developed by our research group[13]. All enrolled patients signed the Informed Consent.

RESULTS

Sociodemographic and Clinical Characterization

The study enrolled 86 subjects, whose sociodemographic characteristics are presented in Table 1.

It was found that just over half of the sample consists of women (58.1%), white (59%), median age of 52.7 years-old (12.9), married (55.8%), living with spouse and children (41.9%), with median 6.4 of study (3.2) inactive years (47.7%), with a monthly average individual income of 1.9 (1.2) minimum wages (MW) and average monthly family income of 2.9

Table 1 - Sociodemographic and clinical characteristics of outpatients with valvular heart disease at a university hospital (N = 86), Campinas, São Paulo, Brazil, 2012

Sociodemographic variables	%	Average (sd)	Median	Variation
Gender				
Female	58.1			
Breed				
White	59.0			
Age (years old)		52.7(12.9)	54.0	18-77
Schooling (in years, n = 79)		6.4(3.2)	5.0	0.5-18
Marital Status				
Married	55.8			
Separated/Divorced	12.8			
Concubinage	11.6			
Widower	11.6			
Single	8.1			
Living with				
With spouse and children	41.9			
With spouse	22.1			
Others	30.2			
Alone	5.8			
Employment				
Inactive	47.7			
Active	34.9			
Housewife	17.4			
Individual Income (SM†, n = 64)		1.9(1.2)	1.6	0.3-8.0
Familiar Income (SM, n = 85)		2.9(1.9)	2.3	0.4-9.6
Origin				
Metropolitan Region of Campinas	54.6			
Campinas	23.3			
Other cities of São Paulo	19.8			
Outros States	2.3			
Clinical Diagnosis				
Single Injury	37.2			
Double Injury	31.4			
Type of valvular heart disease				
Mitral Insufficiency	59.3			
Mitral Stenosis	50.0			
Aortic Insufficiency	47.7			
Aortic Stenosis	34.9			
Symptoms				
Fatigue	52.5			
Dyspnea	50.0			
Tachycardia	47.7			
Chest Pain	43.0			
Syncope	39.5			
Edema	37.2			
Treatment				
Clinical and surgical	71.3			
Clinical	25.6			
Treatment time (in years)		14.1(12.6)	10.0	5.0-20.0
Number of medications in use		4.4(2.1)	4.0	0-10

Notes: Standard Deviation; †minimum wage of R$ 622.00, Brazil, in 2012.

(1.9) MW. Most (54.6%) came from the metropolitan region of Campinas, 23.3% were from the city of Campinas, 19.8% of other cities of São Paulo and 2.3% from other states.

Considering the clinical diagnosis, 37.2% of patients have a single injury in a single valve apparatus, and 31.4% had a double injury. Fatigue (52.5%) and dyspnea (50%) were the most frequently reported symptoms. The average time from the start of treatment was 14.1 (12.6) years. Most participants (71.3%) had clinical treatment and had undergone surgical treatment; consumed on average 4.4 (SD = 2.1) types of medication a day.

Influence of sociodemographic and clinical variables on the impact of the disease on daily activities

The results of the multiple linear regression analysis with *Stepwise* selection criteria of variables - used to verify the influence of sociodemographic and clinical variables on the impact of the disease evaluated by the total CVID and domains are presented in Table 2.

The data showed that schooling and age were the sociodemographic variables that influenced the impact of valvular heart disease in the daily activities of these people. Schooling influenced the impact in two areas - Physical impact - Symptoms (p = 0.0458) and in Social and Emotional Impact domain (p = 0.0012). The age, in turn, influenced the domain of Illness Adaptation.

The impact of the disease was still influenced by clinical variables - symptoms related to valvular heart disease (dyspnea, palpitations, chest pain and fainting) and diuretic use.

The perception of palpitations self-reported by the patient influenced the total CVID and three of its domains - Impact on Daily Living Activities (p value < 0.0001), Social and Emotional Impact of the disease (p = 0.0033) and Adaptation domain to the Disease (p = 0.0003).

Similarly, the use of diuretic influenced the domains Physical Symptoms Impact (p = 0.0248), Social and Emotional Impact (p = 0.0112) and the total score (p = 0.0005).

It was found that the total CVID was influenced by the presence of symptoms - chest pain (p = 0.0027), palpitations (p = 0.0097) and diuretic use (p = 0.0005).

Table 2 - Multiple linear regression analysis used to test the influence of sociodemographic and clinical variables in the perception of the impact of the disease on daily activities of patients with valvular heart disease (N = 86), Campinas, São Paulo, Brazil, 2012

Dependent variable	Independent variable	p value
Physical Impact – Symptoms	Schooling	0.0458
	Dyspnea	0.0007
	Diuretics use	0.0248
	Fainting	0.0001
Daily Living Activities Impact	Palpitation	0.0187
Social and Emotional Impact	Schooling	0.0012
	Palpitation	0.0033
	Diuretics use	0.0112
Illness Adaptation	Age	0.0027
	Palpitation	0.0003
	Fainting	0.0073
	Diuretic use	0.0005
CVID – Total	Chest pain	0.0027
	Palpitation	0.0097

DISCUSSION

This study analyzed the sociodemographic and clinical characteristics of patients with valvular heart disease and verified the influence of these variables on the impact of valvular heart disease in the daily life of these patients. The main findings showed that the impact of the disease in this group of patients was influenced by sociodemographic characteristics such as: age, schooling and the clinical variables - symptoms (dyspnea, palpitations, fainting and chest pain) and diuretics use.

Concerning the sociodemographic characteristics of the study group, the composition of the sample studied showed that gender and age proved the evidence presented by other studies about valvular heart disease - mostly female patients, with ages ranging from 18 to 75 years-old[9,13]. The schooling and socioeconomic status in the studied group reflect the majority of the population served in a university hospital, which provides health care through the Unified Health System (UHS), predominantly made up of individuals with low schooling and lower socioeconomic status. Similar results were found in studies performed with cardiac patients treated at the same hospital[9,13-17].

It was found that 47.7 (41/86) of respondents were inactive, i.e., received the disease benefit, were retired due to disability or length of service or were unemployed. In this group of a variable labor situation, it seems possible to affirm that the clinical manifestation of valvular heart disease may have contributed to withdraw early the subject of productive life, with negative consequences for the individual and society.

Concerning diagnosis, 59.3% of participants had a diagnosis of mitral insufficiency and 50% mitral stenosis. The involvement of the mitral valve has a high incidence in the population, unlike most developed countries, being rheumatic fever the main cause of valvular heart disease in our country, responsible for 70% of cases[18].

Drug therapy in valvular heart disease aims to control consequences and prevent complications. Pharmacological groups applicable to valvular heart disease are: digitalis, beta-blockers, diuretics, vasodilators, antiarrhythmic and anticoagulants[3,5]. In this study, it was found that all patients were using

the drug therapy. In medical records research, it was found using the following drug classes: digitalis, diuretics, vasodilators inhibitors (ACE) and anticoagulants therefore in line drug classes recommended in the literature.

The valvular heart disease patients are characterized by presenting signs and symptoms, such as: dyspnea, fatigue, syncope, edema, chest pain and palpitations that manifest daily and progressively with the evolution of the disease which leads patients to seek medical attention in the progressive worsening of their physical symptoms, usually fatigue and dyspnea[3,5,18]. In this study, it was found that 80.2% of patients had at least one symptom described in the literature, the most prevalent fatigue (53.5%) and dyspnea (50%), confirming the findings of previous studies.

The results of this study suggest that sociodemographic variables such as schooling and age influence the perception of the impact of the disease. The relationship between schooling and the perception that the patient has the disease has also been identified in progress study, in which we observed the influence of schooling level about the existence of inadequate beliefs so that participants with more than four years of education reported more inappropriate beliefs[19].

The literature has shown in recent years, concern for an association between schooling level and clinical and psychosocial variables, and suggested a correlation between them, i.e., the lower the schooling level, the worse the clinical evolution and the psychosocial variables results are less favorable (beliefs, attitudes or disease perceptions). These findings corroborate with Reis and Glashan study[19] developed with hypertensive and was observed that patients with higher schooling levels were also the most enlightened as to the severity of hypertension.

Similarly, the presence or absence of symptoms seems to be important not only to evaluate the clinical evolution of the individual but also to assist in the understanding of the impact of the disease and treatment in their life. Symptoms influenced the perception of the subject about the impact of disease related to activities of daily living, social and emotional factors and physical and related to adaptation to living conditions. Thus, it is believed that the symptoms should be addressed from a clinical point of view, as evidence of improvement or worsening of the clinical condition or to assess the effectiveness of the treatment and, especially, in the view of the subject, assessing the impact on daily life activities and especially helping the patient to develop strategies for prevention, relief and/or addressing the symptoms.

The results of this study demonstrated that the use of diuretic influence the perception of impact with regard to the social, emotional and physical aspects - symptoms that can be attributed to the fact that drug relate to the relief of dyspnea and edema lower limbs, common symptoms of valvular heart disease that significantly impair their daily lives by the restrictions in the development of daily living activities.

Another aspect associated with diuretic treatment refers to the nuisance caused by their use, while providing relief of symptoms, can cause restrictions in the lives of these patients as it increases the urinary volume, which can interfere with or impede the patient to frequent places where there is no easy access to the bathroom. Often, we heard the difficulty of reconciling taking the drug for the maintenance of work activities and/or leisure.

It constitutes a limitation of this study, including the sample of medical and surgical patients, whose perception of the impact of the disease on daily activities can differ by the kind of applied treatment, although the average length of treatment (14.1 years) and the median (10 years) point to the coexistence for a long time with the disease and its clinical outcomes.

Thus, the results regarding the influence of sociodemographic and clinical variables in the perception of the impact of the disease are essential for the planning of care/nursing actions for these clients. This knowledge allows nurses to develop strategies aimed at controlling or reducing predictors of a worse impact of the disease and/or how to direct specific actions for those most vulnerable to a worse impact, such as those with low schooling.

CONCLUSION

Our findings show that the studied group is characterized by low socioeconomic status represented by low schooling and low income. The impact perceived by the disease was influenced by sociodemographic variables such as age and schooling and clinical variables such as the presence or absence of symptoms and diuretics treatment. It is considered therefore that knowledge about the sociodemographic and clinical characteristics and their influence on the impact disease perception is an important strategy for the quality of care provided to outpatients with valvular heart disease.

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