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STROKE AWARENESS AMONG CARDIOVASCULAR DISEASE PATIENTS

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Abstract – Background: The early recognition of stroke signs and symptoms is of great relevance concerning the outcome, since it enhances the chances of thrombolytic therapy use. **Purpose:** To compare the knowledge of stroke among a community-based sample and patients treated in a cardiologic clinic. **Method:** We applied a questionnaire during one morning to people who were walking in a park (Pa) and spontaneously stopped at a health tent and during one week to patients of a cardiologic clinic (Ca). The survey assessed demographic details, awareness of stroke symptoms and signs, risk factors and general concepts of stroke. **Results:** A total of 222 questionnaires were answered, 109 by the cardiologic clinic group and 113 by the park group. The park group recognized better three associated symptoms: headache (Ca: 39%; Pa: 61%; p: 0.001), loss of vision (Ca: 15.8%; Pa: 30.9%; p: 0.007) and unilateral paralysis/weakness (Ca: 26%; Pa: 41%; p: 0.026). The park group recognized better 3 risk factors: diabetes (Ca: 22.9%; Pa: 37.2%; p: 0.021), smoking (Ca: 51.4%; Pa: 67.2%; p: 0.011) and high cholesterol (Ca: 54.1%; Pa: 69.9%; p: 0.015). **Conclusion:** Our results suggest that patients treated in a cardiologic clinic do not show a better knowledge of stroke when compared to a community-based sample. Campaigns to increase stroke knowledge can have a great impact on public health, especially among enhanced risk groups, such as cardiovascular patients.

KEY WORDS: stroke awareness, public perception, lay knowledge.

Nível de conhecimento sobre acidente vascular cerebral entre pacientes de uma clínica cardiológica.

Resumo – Fundamento: O reconhecimento precoce dos sinais e sintomas de um acidente vascular cerebral (AVC) é relevante no prognóstico do paciente, pois aumenta a chance do uso da terapia trombolítica. **Objetivo:** Avaliar o conhecimento sobre AVC entre uma amostra de pacientes tratados em uma clínica cardiológica, comparando-o com o de uma amostra da população freqüentadora de um parque recreativo. **Método:** Aplicamos um questionário estruturado acerca de conhecimentos gerais sobre AVC a pacientes de uma clínica cardiológica durante uma semana. Aplicamos o mesmo questionário numa única manhã a freqüentadores de um parque recreativo que paravam espontaneamente em um *stand* de informações sobre saúde. Além de dados demográficos, o questionário avaliava conhecimento sobre sintomas e sinais de AVC, fatores de risco e conceitos gerais sobre a doença. **Resultados:** Foram respondidos 222 questionários, 109 pelo grupo da clínica de cardiologia (Ca) e 113 pelo grupo do parque (Pa). O grupo do parque reconheceu melhor três sintomas: cefaléia (Ca: 39%; Pa: 61%; p: 0,001), déficit visual (Ca: 15,8%; Pa: 30,9%; p: 0,007) e hemiparesia (Ca: 26%; Pa: 41%; p: 0,026). O grupo do parque associou melhor três fatores de risco ao AVC: diabetes (Ca: 22,9%; Pa: 37,2%; p: 0,021), tabagismo (Ca: 51,4%; Pa: 67,2%; p: 0,011) e colesterol alto (Ca: 54,1%; Pa: 69,9%; p: 0,015). **Conclusão:** Nossos resultados sugerem que pacientes tratados em uma clínica cardiológica não têm melhor conhecimento sobre AVC quando comparados a uma amostra da população. Campanhas visando aumentar o conhecimento sobre o AVC podem ter grande impacto na saúde pública, especialmente entre grupos de alto risco para essa condição, como pacientes com doenças cardiovasculares.

PALAVRAS-CHAVE: acidente vascular cerebral, conhecimento público, conhecimento leigo.

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Stroke is one of the leading causes of mortality and adult disability[1,2]. Thrombolytic therapy has been validated as a cost-effective therapy to ischemic stroke, but the short therapeutic window is one of its main limitations[3,4]. It is assumed that patient eligibility can be increased with a better public knowledge of stroke signs and symptoms[5].

Previous studies have addressed the issue related to public awareness of stroke symptoms, signs and risk factors[5-8]. Most of them showed a poor public knowledge of stroke. Among selected populations, such as cardiovascular patients, the awareness would be even more important since they represent a group with enhanced stroke risk[9-11]. General public need to be educated about stroke and mass education to teach healthy lifestyles to groups at risk for stroke could be the most cost-effective preventive action[12].

The aim of this study is to compare the knowledge about stroke among patients treated in a cardiologic clinic and a community-based sample.

METHOD

We conducted an observational study that was performed in a park and in a cardiologic clinic. We applied the same questionnaire during one morning to people who were walking in a park and spontaneously stopped at a health tent for blood pressure measurement (Pa group) and during one week to patients of a cardiologic clinic (Ca group). Patients in this clinic are treated for cardiopathies or atherosclerosis risk factors. The study was approved by the Santa Luzia Hospital committee on human research and informed consent was obtained from each individual.

First, the nature of the interview was explained to the voluntary. After that, the voluntary was asked to respond a structured questionnaire designed to assess public knowledge of stroke risk factors, stroke symptoms and signs, and perception of the severity of the illness. Only two patients from Pa group and one from Ca group rejected to answer the questionnaire.

The survey consisted of 15 questions, divided into 3 sections. The first section gathered demographic details (age, sex, educational level, socioeconomic level). The second section contained a series of questions to assess awareness of stroke symptoms and signs as well as associated risk factors. Section 3 was aimed to find out general concepts of stroke, like prevention, severity, potential of cure, course of action that should be chosen if someone has an event and opinion about government actions.

χ^2 test was applied for statistical comparison between the two groups. The significance level was 0.05.

Table 1. Demographic profile of the groups.

	Cardiologic group	Park group
Participants	109	113
Mean age (years)	53	49
Range (years)	16–85	15–83
Sex		
Men	44 (40%)	61 (54%)
Women	65 (59.6%)	50 (44.3%)
Not answered	2 (1.7%)	0
Educational level		
Less than 11 years of formal schooling	32 (29.35%)	49 (43.3%)
More than 11 years of formal schooling	77 (70.65%)	61 (56.7%)
Socioeconomic level (Brazilian minimal wage)		
<10	47 (44%)	65 (63%)
>10	57 (52.4%)	40 (35.2%)
Not answered	5 (4.6%)	2 (1.8%)
Tobacco consumers	12 (11%)	10 (8.8%)

RESULTS

A total of 222 questionnaires were answered, 109 by the cardiologic clinic group (mean age: 53 years; range: 16–85; men: 40%) and 113 by the park group (Pa) (mean age: 49 years; range: 15–83; men: 54%). The Ca group exhibited a higher educational level than the Pa group (more than 11 years of formal schooling : Ca 71%, Pa 56.7%) and also a higher salary (more than 10 Brazilian minimal wage: Ca 52.4%, Pa 35.2%). The demographic details are shown in Table 1.

The majority of respondents (98.2% of both groups) knew the terms *derrame cerebral* or *acidente vascular ce-*

Table 2. Respondents' knowledge of stroke signs and symptoms.

	Cardiologic group	Park group	p
Sudden unilateral paresthesia	51%	68%	0.111
Sudden and severe headache	39%	61%	0.001
Sudden difficulty in speaking	41%	38%	0.623
Sudden unilateral weakness	26%	41%	0.026
Sudden dizziness, loss of balance or coordination	26.6%	34.5%	0.201
Sudden loss of vision	15.6%	30.9%	0.007

Table 3. Respondents' knowledge of stroke risk factors.

	Cardiologic group	Park group	p
Hypertension	96.3%	92.3%	0.261
High cholesterol	54.1%	69.9%	0.015
Smoking	51.4%	67.2%	0.011
Heart diseases	47.7%	45.2%	0.701
Alcohol	23.9%	48.6%	<0.001
Diabetes	22.9%	37.2%	0.021
Advanced age	24.8%	24.7%	0.999

rebral (words that mean stroke in Portuguese), and the media (television, radio and newspapers) was the main source of information (Ca: 62.4%; Pa: 59.3%). Medical consultation was the fourth source of information in both groups (Ca: 26.6%; Pa: 20.4%; p: 0.53). Unilateral paresthesia was the most commonly recognized symptom in both groups (Ca: 51%; Pa: 68%). The Pa group recognized better three symptoms: headache (Ca: 39%; Pa: 61%; p: 0.001), sudden loss of vision (Ca: 15,8%; Pa: 30,9%; p: 0.007) and unilateral paralysis/weakness (Ca: 26%; Pa: 41%; p: 0.026). None of the symptoms and signs were better recognized by the Ca group (Table 2).

The Ca group did not recognize better any of the seven stroke risk factors (diabetes, smoking, high cholesterol, arterial hypertension, heart diseases, advanced age). The Pa group recognized better three risk factors: diabetes (Ca: 22.9%; Pa: 37.2%; p: 0.021), smoking (Ca: 51.4%; Pa: 67.2%; p: 0.011) and high cholesterol (Ca: 54.1%; Pa: 69.9%; p: 0.015). Alcohol consume was separately analyzed and was more frequently associated to stroke among the Pa group (Ca: 23.9%; Pa: 48.6%; p< 0.001) (Table 3).

The groups similarly considered stroke to be a severe illness (Ca: 99.1%; Pa: 98.2%) that can be prevented (Ca: 91.7%; Pa: 95.5%). Most thought that stroke demands an early treatment (Ca: 99.1%; Pa: 96.4%). The majority considered that the population is few or not informed about stroke by the government (Ca: 96.3%; Pa: 91.10%).

Educational and economic status were not associated with signs, symptoms and risk factors recognition.

DISCUSSION

Our study suggests that patients treated in a cardiologic clinic, theoretically a population with an enhanced risk for stroke, do not have better awareness of this disease when compared to a population-based sample. Futhermore, medical consultation was not a more common source of information among the cardiologic patients. This fact is interesting since it is known that individuals that recognize their increased risk for stroke are more likely to engage in stroke prevention practices than those who do not[13]. Samsa et al. showed that the majority of the patients with increased risk of stroke are unaware of their risk, which is in line with our results[14].

Previous studies have addressed the issue related to public awareness of stroke symptoms and signs, risk factors and severity[5-8]. However, we could not find any study that compared the perception of stroke among a community-based sample and risk populations, especially cardiovascular disease patients. Segura et al. [6] conducted a population-based telephone interview in Spain, with a total of 3000 respondents, and showed that a community-based sample is unfamiliar with stroke, specially people with home-based occupations. In this survey, 4.5% of the participants knew the term stroke (*ictus* in Spanish neurological language), 32.6% could mention at least one stroke sign and 59.6% were able to mention at least one stroke risk factors without prompting. Segura et al. demonstrated that only 10.5% of the participants achieved suitable stroke knowledge[6]. In addition, Kothari et al. interviewed 163 patients admitted from the emergency department with possible stroke and showed that these patients also have a poor awareness of stroke[7]. They also showed that older patients are less likely to know signs, symptoms and risk factors of stroke.

Pandian et al. conducted a hospital-based survey in India and showed that subjects without a past history of stroke also do not have a satisfactory awareness of stroke[5]. During eight months, they interviewed 942 individuals and found that 45% of them did not recognize the brain as the affected organ in stroke. They also showed that higher education and upper socioeconomic status are correlated with a better awareness of some stroke aspects. Our results are not in line with these findings, since the cardiologic patients had higher salaries and educational status but did not present a higher awareness of stroke.

Unilateral paresthesia was the most recognized symptom by both groups in our study, which does not agree with previous studies, in which unilateral weakness was the most frequently noted warning symptom[5-7]. In our survey, unilateral weakness was the third most common symptom recognized by the park group and the sixth by the cardiologic group.

The three risk factors more associated to stroke were hypertension, hypercholesterolemia and smoking in both groups. Alcohol was less related to stroke among the cardiologic group and we could speculate that they have been more informed (by their doctors?) about the benefits of low alcohol consume.

The finding of a better knowledge about stroke among our community sample (Pa group) is interesting and can

be explained in part by the nature of our community sample selection. The Pa group seemed to be a high selected group that cares about their health, that exercise themselves and look for health information.

In conclusion, our results suggest that patients treated in a cardiologic clinic, theoretically a risk population for stroke, does not have a better awareness of stroke when compared to a community-based sample. Further campaigns are necessary, especially among cardiovascular patients. This is a situation where the cardiologist and the general practioner could be an excellent source of information to these patients.

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