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Factors associated with the decision to seek health care in myocardial infarction: gender differences*

FATORES ASSOCIADOS À DECISÃO PARA PROCURA DE SERVIÇO DE SAÚDE NO INFARTO DO MIOCÁRDIO: DIFERENÇAS ENTRE GÊNEROS

FACTORES ASOCIADOS A LA DECISIÓN DE BÚSQUEDA DE SERVICIO DE SALUD ANTE INFARTO DE MIOCARDIO: DIFERENCIAS ENTRE GÉNEROS

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Carlos Antonio de Souza Teles Santos³, Fernanda Carneiro Mussi⁴

ABSTRACT

Analyze cognitive and emotional variables between genders in terms of the decision time (DT) to seek care when experiencing symptoms of myocardial infarction. One hundred adults were interviewed at two hospitals in Salvador-BA. The analysis used percentage means, the chi-square test, and a robust linear regression model. Most participants were male, with a mean age of 58.78 years and a low socioeconomic status. The geometrical mean of the sample was 1.1h (0.9h for men, and 1.4h for women). A shorter decision time was found for those who considered their symptoms to be severe, and a longer decision time for those who expected symptoms to improve and took something to feel better, with statistically significant associations. An interaction was observed between gender and the following variables: waiting for symptoms to improve ($p=0.014$), concealing symptoms ($p=0.016$) and asking for help ($p=0.050$), thus an association was observed between the variables of interest and DT. The decision times were long and were affected by cognitive, emotional and gender variables. Nursing care may promote early assistance.

DESCRIPTORS

Myocardial infarction
Gender identity
Nursing care

RESUMO

O objetivo deste estudo foi analisar, entre gêneros, a influência de variáveis cognitivas e emocionais no tempo de decisão (TD) para procura de atendimento face ao infarto do miocárdio. Cem adultos foram entrevistados em dois hospitais de Salvador-BA. Na análise empregaram-se médias percentuais, teste Q-quadrado e modelo de regressão linear robusto. Houve a predominância de homens, com idade média de 58,78 anos e baixa condição socioeconômica. A média geométrica da amostra foi 1,1h – 0,9h para homens; 1,4h para mulheres. Constatou-se menor tempo de decisão para quem considerou grave os sintomas, e maior para quem esperou melhora e tomou algo para recuperar-se, tais associações são estatisticamente significantes. Houve interação entre gênero e variáveis: esperar a melhora dos sintomas ($p=0,014$), ocultá-los ($p=0,016$) e pedir ajuda ($p=0,050$), quando verificou-se a associação das variáveis de interesse e TD. Os tempos de decisão foram elevados e sofreram influência de variáveis cognitivas, emocionais e de gênero. Cuidados de enfermagem podem promover o atendimento precoce.

DESCRIPTORES

Infarto do miocárdio
Identidade de gênero
Cuidados de enfermagem

RESUMEN

Analizar, entre géneros, la influencia de variables cognitivas y emocionales en Tiempo de Decisión (TD) para búsqueda de atención ante infarto de miocardio. Cien adultos fueron entrevistados en dos hospitales de Salvador-BA. Para análisis, se emplearon promedios porcentuales, test Chi-cuadrado y modelo de regresión lineal robusto. Predominaron hombres, edad promedio 58,78 años y baja condición socioeconómica. La media geométrica de la muestra fue 1,1h, para hombres 0,9h, para mujeres 1,4h. Se constató menor TD para quien consideró graves los síntomas y mayor para quien esperó evolución y tomó algo para mejorar, tales asociaciones estadísticamente significativas. Existió interacción entre género y variables: esperar la mejoría sintomática ($p=0,014$), ocultarlo ($p=0,016$) y pedir ayuda ($p=0,050$), cuando se verificó la asociación de variables de interés y TD. Los tiempos de decisión fueron elevados, e influidos por variables cognitivas, emocionales y de género. Los cuidados de enfermería pueden promover la atención precoz.

DESCRIPTORES

Infarto del miocardio
Identidad de género
Atención de enfermería

* Extracted from the research project "Retardo pré-hospitalar face ao infarto do miocárdio: diferenças entre gêneros", Federal University of Bahia, 2011.
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INTRODUCTION

Cardiovascular diseases (CVDs), including acute myocardial infarction (AMI), are among the leading causes of morbidity and mortality worldwide⁽¹⁾. Hospital and pre-hospital mortality from acute myocardial infarction is also significant, despite a reduction in mortality in the intra-hospital phase. In 2007 in Brazil, the number of deaths from AMI was 71.997, which corresponded to 6.9% of all deaths occurring in that year. Of the 71.997 deaths, 39.876 (55.4%) occurred in the hospital, 24.054 (33.4%) occurred at home, 3.551 (4.9%) occurred in another health facility, 2.490 (3.4%) in other locations, 1.949 (2.7%) on a public road and, for 167 deaths (0.2%), the location was not identified⁽²⁾. The high mortality from the disease in Brazilian cities represents a significant social and economic impact on the country.

Individuals treated within the first hour of symptom onset experience a significant reduction in hospital mortality. Fibrinolytic therapy can reduce mortality in the acute phase and maintain this benefit for up to ten years, but the benefit of myocardial reperfusion is time-dependent⁽⁴⁾. Therefore, the immediate availability of high quality health services is crucial to increase the chance of survival and reduce morbidity⁽³⁾.

In Brazil, literature is scarce regarding the decision-making process of individuals seeking health care for symptoms of AMI. In the international literature data are conflicting regarding the existence of gender differences in terms of delay in seeking assistance for a cardiovascular event. Some studies found no differences in the time delay between men and women⁽⁴⁻⁵⁾, while others found that women took longer than men to seek care⁽⁶⁻⁷⁾. If the existence of a time difference in seeking care between genders is considered important, it is even more relevant to know the reasons for the delay from both the male and female perspective⁽⁸⁾. Knowing how people feel, interpret, judge and respond to symptoms of AMI can guide the behavior of nurse educators regarding the specificities of different patient populations; that is, education may be guided toward specific genders and aimed at reducing the delay in seeking assistance⁽⁹⁾. It is worth highlighting that social constructions concerning men and women may be brought forth in people's attitudes regarding their health, influencing the course of the disease and changing behavior in face of the disease and the use of health services. Therefore, gender can be a behavior-changing factor for individuals who are deciding whether to seek care for symptoms of AMI⁽⁹⁾.

Among the reasons why individuals delay in seeking health services, the influence of cognitive and emotional

variables have been highlighted in terms of decision time (DT)⁽¹⁰⁻¹¹⁾. Cognitive and emotional variables refer to the perception of the individuals in view of the symptoms and social messages of the disease, including the evaluation of its causes, seriousness and consequences, as well as the behaviors and steps that must be taken so that the disease can be cured or controlled⁽¹²⁾.

It is known that at least 60% of the people suffering from AMI present prodromal symptoms and signs; however, not all recognize and/or accept the severity of their condition, thus delaying the search for medical help⁽¹³⁾ on average from 3 to 4 hours after the onset of the cardiovascular event⁽³⁾. That is, the way in which individuals perceive the disease's symptomatology impacts their decision as to what to do about their symptoms.

Based on the above, one of the challenges in efforts to reduce mortality from myocardial infarction (AMI) and minimize its physical, psychological and social consequences is to recognize the factors influencing the decisions of men and women in seeking medical care in light of the symptoms of the disease and then promote the early search for emergency medical care⁽¹³⁾.

Therefore, the study aimed at: estimating the decision time in seeking medical care for men and women who have suffered an acute myocardial infarction; analyzing the influence of cognitive and emotional variables on decision time; and verifying the interaction between gender and the variables of interest based on the association of the variables of interest and decision time outcome.

METHOD

This was a cross-sectional, exploratory study, conducted in two hospitals in Salvador, Bahia, one being a philanthropic institution which serves clients of the Unified Health System (SUS) and private health agencies, and the other being a public institution which admits patients through the Bahia State SUS regulating system. Both are referral centers to assisting people suffering from acute coronary syndromes.

To calculate the sample size (n), the estimated prevalence of AMI of 99/100.000 adults in Salvador / BA was used as a parameter⁽¹⁴⁾. The following parameters were also considered:

$$n = \frac{NP(1-P)}{(N-1)D + P(1-P)} \text{ where, } D = \frac{B^2}{Z_{\alpha/2}^2} \text{ e } P\left(\left|\hat{P} - P\right| \leq B\right) = 1 - \alpha$$

N - total number of the population assumed to be affected during the data collection period = 1.000⁽¹⁵⁾; P - ratio within the population under study = 0.099; n - sample

...one of the challenges in efforts to reduce mortality from myocardial infarction (AMI) and minimize its physical, psychological and social consequences is to recognize the factors influencing the decisions of men and women in seeking medical care in light of the symptoms of the disease and then promote the early search for emergency medical care.

size; α - significance level; $(1 - \alpha)100\%$ - level of trust (confidence level); B - estimated maximum error desired; $Z_{\alpha/2}=1.96$; $1 - \alpha = 0.95$; $B = 0.04$ or 4%.

According to the calculation, the minimum sample size would be 99, but the actual sample was composed of 100 individuals, whose inclusion criteria were: medical diagnosis of AMI with or without ST-segment elevation recorded in patient medical records; mentally able individuals, having no medical restrictions for the interview; individuals hospitalized for at least 24 hours or for a maximum time of 30 days after AMI, and who agreed to participate in the study through signing of the Term of Consent. A maximum period of 30 days after AMI was set to minimize recall bias.

To collect data, we created an instrument consisting of two parts, containing straightforward multiple choice and semi-structured questions. Part I consisted of data regarding socio-demographic information, such as age, sex, self-declared race/ethnicity, education, marital status, employment status, household income, household members, number of dependents, place of residence and admission and having a health insurance plan. Part II consisted of questions regarding the participant's judgment of the severity and nature of symptoms, reasons for delay and decision in seeking care, and the actions of individuals in relation to the cardiovascular events.

Data collection consisted of an interview performed during the period from April to November 2009. After identifying the individuals through the registration book and the medical records, those who met the inclusion criteria were selected, in addition to those who had free time between exams and/or procedures for one hour. Each participant was interviewed once.

The project was approved by the Ethics Committee of the two hospitals, under protocol number 11/09, and complied with the ethical principles of Resolution 196/96 of the National Health Council.

The data recorded and coded in the forms were entered into a database using SPSS software, version 17.0 for Windows, and were analyzed as percentages and averages. To analyze the association between cognitive and emotional variables according to gender, we used the Chi-square test or Fisher's exact test when there were expected values below 5 in 2x2 tables. In bivariate and multivariate analyses, through use of the robust linear regression model, the association between decision time and cognitive and emotional variables was determined, and the interaction between the gender variable and the interest variables was tested. For the analyses, we performed a logarithmic transformation on the decision time dependent variable to account for asymmetry of time. The significance adopted was 5% for all statistical tests.

RESULTS

Socio-demographics of study participants

Data relating to socio-demographic characteristics of the participants can be seen in Table 1. The sample consisted of 100 individuals, predominantly men. The average age with its standard deviation (sd) for men (M) was 58.70 (sd 11.08) years, and for women (W), 58.97 (sd 12.10) years.

The sample from Salvador, both for men and women, showed the following: a prevalence in self-declared race/color of black, marital status as married or steady union, low income (up to three minimum wages), up to three dependents, low level of education (most had completed up to three years of full school years) and professionally active individuals; that is, employed, freelance or retired. With relation to the number of people with whom they shared a residence, 11.0% lived alone, and the others (89.0%) lived with other family members or friends, namely their partners or children.

Eighty percent were admitted to Hospital I and 20% to Hospital II. It is noteworthy that the entire sample was covered under the SUS, although one participant mentioned having health insurance.

Cognitive and emotional response of the participants as a result of the AMI

With reference to the judgment of the nature of symptoms (Table 2), 41.0% of participants (M=36.6% x W=51.7%) did not associate their symptoms with a heart problem, attributing them to stomach problems (24.0%), back problems (9.0%), stroke or hypertensive disease (4.0%), stress/daily worries (3.0%) and effects of medication (1.0%).

Of the 44 participants who considered the symptoms to be of cardiovascular origin, 22.0% judged themselves to be suffering an AMI, 20.0% felt they had some problem related to the heart and 2.0% felt they were experiencing an episode of angina pectoris. Men were more likely to think they were experiencing an AMI or angina pectoris. An association between gender and judgment of the nature of the symptoms was not verified.

The symptoms were considered severe by 64.0% of the participants and the majority of men (63.3%) and women (65.5%). The severity attributed by them was justified by severe pain, worsening of the symptoms and the association of clinical cardiac problems. Non-severity was justified by the location of symptoms within the boundaries known and controllable with personal resources.

Table 1 - Socio-demographics according to sample and genders - Salvador, BA, 2010

Socio-demographic factors	Sample		Men		Women	
	n=100	%	n=71	%	n=29	%
Age						
Less than 60	56	56.0	37	52.1	19	65.5
Above/equal to 60	44	44.0	34	47.9	10	34.5
Race/color (self-declared)						
Caucasian	29	29.0	19	26.8	10	34.5
Black	71	71.0	52	73.2	19	65.5
Marital status						
Married	58	58.0	46	64.8	12	41.4
Living with someone	17	17.0	12	16.9	5	17.2
Separated/divorced	9	9.0	4	5.6	5	17.2
Single	9	9.0	6	8.5	3	10.3
Widower	7	7.0	3	4.2	4	13.8
Education						
Illiterate	6	6.0	5	7.0	1	3.4
Signs name	7	7.0	5	7.0	2	6.9
Up to Basic	56	56.0	40	56.3	16	55.2
Up to High School	18	18.0	14	19.7	4	13.8
Up to College	13	13.0	7	9.9	6	20.7
Work condition						
Unemployed	7	7.0	4	5.6	3	10.3
Employed	14	14.0	10	14.1	4	13.8
Freelance	34	34.0	22	31.0	12	41.4
Retired with activity	19	19.0	17	23.9	2	6.9
Retired without activity	26	26.0	18	23.3	8	27.6
Family income						
Less than 3 min. wages*	63	63.0	44	62.0	19	65.5
More than 3 min. wages*	37	37.0	27	38.0	10	34.5
No. of dependents						
0-3	58	58.0	37	52.1	21	72.4
3 to 6	37	37.0	31	43.7	6	20.7
> 6	5	5.0	3	4.2	2	6.9
Lives with:						
Alone	11	11.0	8	11.3	3	10.3
With partner	69	69.0	54	76.1	15	51.7
Children	63	63.0	46	64.8	17	58.6
Grandchildren	23	23.0	13	18.3	10	34.5
In-laws	15	15.0	10	14.1	5	17.2
Brothers/sisters	4	4.0	4	5.6	-	-
Other relatives	3	3.0	2	2.8	1	3.4
Friends	2	2.0	2	2.8	-	-
Stepchildren	2	2.0	2	2.8	-	-
Health Plan						
Yes	1	1.0	-	-	1	3.4
No	99	99.0	71	100	28	96.6
Place of Residence						
Salvador	70	70.0	51	72.2	19	65.5
Metropolitan Region	2	2.0	1	1.4	1	3.4
Other cities in Bahia	28	28.0	18	25.4	10	31.1
Hospitalization Place						
Hospital I	80	80.0	57	80.2	23	32.3
Hospital II	20	20.0	14	19.8	6	67.6

*Minimum wage during data collection: R\$465.00

Table 2 - Judging the nature and severity of symptoms according to the sample and genders - Salvador, BA, 2010

Judgment of symptoms	Sample		Man		Women		Value of p
	n=100	%	n=71	%	n=29	%	
As to the nature							
Associated to cardiac problem	44	44.0	33	46.5	11	37.9	0.440
Not associated to cardiac problem	41	41.0	26	36.6	15	51.7	0.760
Did not know what it was	15	15.0	12	16.9	3	10.4	0.309
As to severity							
Severe	64	64.0	45	63.3	19	65.5	0.840
Non severe	36	36.0	26	36.7	10	34.5	

Of the 100 study participants, 15% reported having sought care soon after the onset of the symptoms, including thirteen men and two women. Two men lost consciousness and were taken to the hospital by family members. However, 83 participants reported hesitating to seek care in the early stages of the event. These 83 individuals have provided 150 responses to the list of reasons justifying the delay in the decision to seek care.

Table 3 shows that the most frequent justification for the delay in deciding to seek care was believing that the symptoms were not serious and would improve (87.9%). Although there was no association between gender and reason for the delay in deciding to seek health care, women reported to a greater extent than men the following reasons: not wanting to worry anyone, being afraid to be away from family, fear of being hospitalized, fear of what might happen and being afraid that it might be something serious. Men, more often than women, believed that their symptoms were not serious and they would get better; in addition, they believed they could endure the pain. Only men stated that they were afraid they would be unable to work.

The 83 participants who hesitated at the onset of symptoms to seek health care saw no choice but to seek care at a certain point in the course of the coronary event.

The 100 participants provided 138 responses as to the different reasons for why they eventually made the decision to seek health services (Table 3), either immediately after the onset of symptoms or at a certain time during the event. The main reasons for this decision included: intolerance to pain (66.0%), the sense of impending death (33.0%) and the thought that they might be a victim of AMI (20.0%). In addition, 19.0% went to an emergency ward due to the influence of relatives and/or friends, including the two individuals who lost consciousness and were assisted by the people around them.

Although there was no association between genders and reasons that led to the search for medical care, women reported being afraid of dying more often and thinking they were having an AMI; men reported intolerance of pain.

Table 3 - Reasons mentioned for the delay in deciding to seek medical care according to sample and genders - Salvador, BA, 2010

Variables	Sample		Man		Women		Value of p
	n=83	%	n=56	%	n=27	%	
Reasons for the delay							
Think it was nothing serious & would get better	73	87.9	50	89.3	23	85.2	0.417
Fear of being hospitalized	15	18.0	10	17.9	5	18.5	0.582
Fear of being away from family	14	16.9	7	12.5	7	25.9	0.113
Being able to endure the pain	13	15.7	11	19.6	2	7.4	0.131
Fear of what might happen	8	9.6	5	8.9	3	11.1	0.516
Fear it might be something serious	8	9.6	4	7.1	4	14.8	0.233
Not wanting to worry anyone	7	8.4	3	5.4	4	14.8	0.151
Fear of being away from work	5	6.0	5	8.9	-	-	0.132
Total answers*	150		99		51		
Reasons for the decision							
	n=100	%	n=71	%	n=29	%	Valor de p
Could not endure the pain	66	66.0	48	67.6	18	62.1	1.000
Thought they might die	33	33.0	21	29.6	12	41.4	0.596
Thought they might be having a heart attach	20	20.0	14	19.7	6	20.7	0.912
Request/decision of relative	19	19.0	14	19.7	5	17.2	0.967
Total answers*	138		97		41		

*Each participant provided more than one answer.

The 100 participants provided 205 responses related to their actions at the onset of symptoms of the AMI. Only 15% reported seeking medical care as their only action. All others reported other actions expressed by the following categories: waiting for symptoms to improve (69.0%); taking a home remedy to improve symptoms (tea, water, milk, coffee and/or medication) (54.0%); asking someone for help (42.0%); hiding symptoms, and continuing to perform usual activities (12.0%).

Although there was no statistically significant association between gender and actions in relation to symptoms, men tended to wait to see if they would get better (70.4% vs. 65.5%) and immediately sought for medical services (18.3% vs. 6.9%), while women took something to feel better (62.1% vs. 50.7%); asked someone to help (44.8% vs. 40.8%); hid symptoms (13.8% vs. 12.7%) and continued to perform their usual activities (20.7% vs. 8.5%).

Comparison of decision times according to cognitive, emotional and gender factors

The geometric mean (GM) and the median of decision times to seek health care in the sample were, respectively, 1.1 h and 1.0 h. For women, the geometric mean for decision time was 1.4h and the median was 1.5h; for men, the geometric mean for decision time was 0.9h with a median of 1.0h. Women presented higher median decision times than men; however, there was no statistically significant difference.

Table 4 shows the judgment of the nature of the symptoms and their severity associated with decision time and gender. There was no significant association between time of decision and association of symptoms with a cardiovascular problem. However, it is emphasized that people who judged their symptoms to be related to a cardiac issue, compared to those who interpreted them as being related to other causes, had a lower decision time. We

found a significant association between decision time and attribution of severity of the symptoms ($p=0.007$), noting that those who considered their symptoms to be severe presented a shorter decision time. There was no relationship between gender and attribution of severity of the symptoms, as well as between gender and interpretation of the nature of the symptoms regarding the outcome of the decision time.

Table 4 Judgment of the nature of the AMI symptoms and severity associated with decision time and gender – Salvador, BA, 2010.

Judgment of symptoms	GM DT*	Value of p**	GM DT*		Value of p†
	Sample		H n =71	M n=29	
Nature – Association with cardiac issues problems					
Yes (44)	0.8	0.289	0.7	1.2	0.764
No (56)	1.3		1.2	1.5	
Severity					
Serious (64)	0.8	0.007	0.6	1.1	0.470
Non serious (36)	2.0		1.9	2.1	

* GM – Geometric Mean, in hours, of DT; p** - shows the difference between the categories of the specific variables; p† - shows the heterogeneity between men and women (the interaction). All p values were obtained by the robust linear regression model.

Table 5 shows the actions of the participants at the beginning and upon worsening of symptoms associated with decision time and gender. There was a significant association between decision time and immediately seeking health care ($p=0.000$), waiting for improvement of symptoms ($p=0.000$) and taking something to feel better ($p=0.001$), with a shorter decision time noted before the first action and a longer decision time before instituting other actions. Men waited longer for improvement of symptoms than women ($p=0.014$), while women presented longer decision times to hide the symptoms compared to men ($p=0.016$).

There was a significant association between decision time and actions taken in the face of worsening symp-

toms, such as taking something to feel better ($p=0.020$) and waiting for improvement of symptoms ($p=0.000$), with a higher decision time for participants who took these actions. It was observed that men who asked for help, in relation to women who also sought help, presented longer decision times ($p=0.050$).

Table 5 Actions of the participants at the beginning and upon worsening of symptoms associated with decision time and gender – Salvador, BA, 2010.

Variables	GM DT*	Value of p**	GM DT		Value of p†
	Sample		H n=71	M n=29	
Actions at the onset of symptoms					
Immediately seek health care					
Yes (17)	0.1	0.000	0.1	0.1	0.981
No (83)	1.9		2.0	1.8	
Wait to see if symptoms go away					
Yes (69)	2.2	0.000	2.3	1.9	0.014
No (31)	0.2		0.1	0.8	
Take something to feel better					
Yes (54)	1.9	0.001	2.1	1.7	0.192
No (46)	0.5		0.4	1.0	
Ask for someone's help					
Yes (42)	0.6	0.060	0.5	0.8	0.966
No (58)	1.7		1.5	2.3	
Hide symptoms					
Yes (13)	2.7	0.145	2.0	7.8	0.016
No (87)	0.9		0.8	1.2	
Action upon worsening of symptoms	GM DT*	Value of p**	H n=56	M n=27	Value of p†
Ask for someone's help					
Yes (48)	1.9	0.733	2.4	1.0	0.050
No (35)	2.1		1.5	3.8	
Wait to see if symptoms go away					
Yes (4)	13.8	0.020	29.3	6.5	0.190
No (79)	1.8		1.9	1.6	
Take something to feel better					
Yes (1)	17.0	0.000	17.0	0.0	0.799
No (82)	1.9		1.9	1.8	

* GM – Geometric Mean, in hours, of DT; p** - shows the difference between the categories of the specific variables; p† - shows the heterogeneity between men and women (the interaction). All p values were obtained through the robust linear regression model.

DISCUSSION

This study sample consisted of 100 individuals, most of whom were married, with a mean age of 58.78 ($S=11.32$) years. Most were from Salvador, Bahia, suffering from AMI and referred by the SUS to one of two referral hospitals for the treatment of cardiovascular disease in the State of Bahia. With regard to age, it is known that men are more susceptible to cardiovascular events after the age of 55 years, and women from 65 years of age onward⁽¹⁶⁾. However, there was almost no difference between the average ages of the male and female participants, showing that women may be developing AMI at a younger age. Study subjects declared themselves, mostly, as belonging to the

black race and lived in underprivileged social conditions, as confirmed by the socioeconomic data. According to the literature, these features have been associated with a high risk of cardiovascular disease⁽¹⁷⁾.

The geometric mean regarding decision time in seeking health care in terms of the sample and gender was considered as being high, since we estimate that about 50% of individuals suffering from AMI die within the first hour of the evolution of the event, and mortality can reach as high as 80% during the first 24 hours⁽¹⁸⁾. In this regard, the study participants were exposed to this risk. One has to consider that, after making the decision to seek care, the individuals spent more time commuting to the hospital.

Most participants did not recognize their symptoms as originating from a cardiac condition, or did not know what they were, attributing them to other health problems, which has also been observed in other studies^(11,19). This fact may be associated with a low socioeconomic level, since the recognition of the symptoms requires critical knowledge that may not be present in the group having less education, and low income may prove to be an issue for this group in terms of access to health services. Although there was no significant association, the participants recognized that the cardiovascular event required a lower decision time. Authors confirmed that individuals with greater knowledge about AMI and who recognize the symptoms seek health services faster⁽¹¹⁾. This demonstrates the importance of health education programs where the nurse addresses, along with various community groups, people who are at high risk for AMI. It is important that those around them have knowledge of the signs and symptoms of a cardiovascular event, as well as basic measures to preserve life.

Although no significant association was found between gender and judgment of the nature of the symptoms, a greater proportion of women interpreted them as being of non-cardiac origin. The correct judgment of the symptoms as being cardiac may be more frequent among men because of the belief that AMI is a disorder which is more common in men, and women tend to underestimate their risk of developing heart disease or myocardial infarction⁽¹⁶⁾.

It was also highlighted in this study that women, regardless of whether or not the symptoms were attributed to a heart problem, took longer to decide to seek care than men. To corroborate this finding, a study in Salvador, Bahia, with 43 women experiencing AMI also showed that most did not associate their symptoms with a heart problem and resisted seeking medical care until they felt frightened and overwhelmed by pain. Overall, while being able to withstand the pain, and even associating it with a cardiovascular problem, they made an attempt to ease their pain before seeking care⁽¹³⁾. Increasing women's knowledge as to their risk might reduce their response time.

Considering that 56% did not consider their symptoms as being of cardiac origin or did not know what they were (Table 2), and 87.9% identified as a reason for the delay in the decision to seek assistance their belief that *it was nothing serious and that it would get better* (Table 3), it is possible to surmise that knowing the potential seriousness of the clinical picture only occurred for 64% of the participants during the course of the event; that is, when they were unable to tolerate the pain and/or nothing relieved their symptoms using personal resources. It is also important to consider that the participants who judged their symptoms as severe had shorter decision times, so that the perception of seriousness can be seen to optimize the early search for health care, even if they do not know the origin of the symptoms. The seriousness of their situation, according to the participants' reports, may have been related to the feeling of being overcome by their symptoms, believing that their life was endangered^(13,20).

Although there was no association between gender and reason for the delay in deciding to seek care, men showed a tendency to believe that it was nothing serious and that they would get better and be able to withstand the pain. Women tended not to want to worry anyone, were afraid to be away from their family and were afraid of being hospitalized. Only men reported the fear of being away from work. The possibility of being away from home due to illness may cause women to fear family disruption and economic or physical dependence⁽¹³⁾. Because of this vulnerable situation, there may be a fear of family abandonment, of leaving family members without anyone to care for them. The fact that only men reported being afraid to be away from work seems to reflect the dis-course of fatherhood as a social burden, which legitimizes men as the material providers of the family⁽⁹⁾.

There was also an association between gender and reasons leading to the decision to seek health care. Women reported intolerance to pain to a lesser extent than men, which may be related to the ideal of femininity, constructed from stereotypes of women as fragile, sweet and sensible beings, infinitely capable of patience and able to withstand pain caused by illness and loss⁽¹³⁾.

In addition to extreme situations such as intolerance to pain and feelings of imminent death indicated as reasons for the decision to seek health care, one-fifth of the sample group (19%) went to a local hospital due to the influence of family members and/or other people. The greater decision time for men who asked for help ($p=0.050$) indicates that people around them should not reinforce ideals of virility and strength in men.

In the literature, at times the presence of family members caused longer⁽¹²⁾ delays in seeking care. In other cases, decision times were shorter when family members were involved in the decision to seek care⁽¹⁰⁾. Therefore, people present in the environmental context can influence the decision-making process of individuals in deciding to

seek care, encouraging both early care and resistance to seeking care. In this sense, the social support network of individuals at risk for AMI should be included in health education strategies developed by nurses. People around individuals at risk need to be mobilized to recognize the symptoms and encourage individuals to seek immediate care.

Although there was no association found between gender and type of action at the onset of symptoms, behaviors of both men and women showed that they engaged in actions that prevented them from immediately seeking care. This fact seems to express the attempt to maintain daily activities, doing whatever they can to avoiding having to change their day-to-day life^(13,20).

Resistance to immediately seeking care identified by 83 participants led to longer decision times ($p=0.000$). Waiting for improvement of the symptoms and ingesting liquids and/or medications occurred both at the beginning and upon worsening of the symptoms, significantly increasing the decision time, showing lack of knowledge of the risk caused by cardiovascular events and a difficulty in admitting that something out of the ordinary was happening. Other authors have also found self-medication and waiting for improvement of symptoms leading to longer decision times⁽¹¹⁾. Therefore, the consequence of attempts to relieve symptoms is an increase in decision time, since individuals keep waiting for the result of the action taken to relieve their pain.

With regard to gender, men waited longer to make a decision regarding improvement of symptoms ($p=0.014$); on the other hand, women tried to hide them ($p=0.016$). These two types of behavior, expressing resistance to pain, can be explained by social gender constructions. Commitments and social roles are factors that can override the impulse to decide immediately to seek care, even in grave situations⁽²¹⁾. Often, women do not want to bother other people with their health problems, so they try to tolerate their pain and take longer to seek help⁽¹³⁾. For men, we observe ideals of invulnerability and risky behavior. Difficulties in verbalizing their health needs are strengthened, as doing so may mean demonstrating weakness or femininity⁽²²⁾.

It appears from the results of this investigation that the decrease in decision time in seeking care for AMI permeates efforts and planned actions to promote the health of the community in general for nurses and the interdisciplinary team. Among the nursing functions, education emerges as a major strategy for health promotion, in which the focus should be oriented to both the patient and family⁽¹¹⁾. The nurse must expand his/her practice beyond the simple transfer of information and consider the feelings attributed by the individual to the situations in which he/she lives, arousing in him/her the potential for actions that favor the preservation of his/her own life.

The nurse can act by approaching gender differences, considering the expected behaviors such as waiting for improvement of symptoms, hiding them, making attempts to improve them and not wanting to bother anyone, among others identified in the study, aiming at developing the knowledge that ignoring the symptoms to avoid being absent from their everyday life may mean risking losing their life or limiting it permanently⁽⁹⁾.

The field of analysis based on gender category remains incipient and requires further study by means of investigations that could prevent morbidity and mortality from the disease⁽⁹⁾. Educational interventions in public or individualized campaigns with focus on the specific differences of gender identified in the present study must be tested in communities and with people who are at risk of AMI. Future research is needed to replicate these findings and to determine the effect of educational interventions and counseling to reduce the delay in seeking health care.

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It should also be noted that the present work studied the interaction between decision time and the cognitive and emotional variables according to gender. Other variables, such as the socioeconomic and cultural ones, must be evaluated in other studies.

CONCLUSION

For both men and women, prolonged decision times in seeking care for symptoms of AMI were observed, as well as cognitive and emotional variables that influenced this time. It was noted, as well, that there were differences in behaviors in seeking treatment by men and women, especially for the variables of interest: waiting for improvement, asking for help from someone and hiding symptoms. Such knowledge provides the impetus for practices in nursing care that promote the early search for emergency care by individuals suffering from a cardiovascular event.

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