Public Knowledge about Risk Factors, Symptoms, and First Decision-making in Response to Symptoms of Heart Attack among Lay People

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Abstract: Lack of knowledge of acute myocardial infarction symptoms and coronary artery disease risk factors is associated with delayed treatments and significant comorbidities. Calling an emergency medical service (i.e., in the USA calling 9-1-1) is the most appropriate first decision to survive this critical situation. This study explored public knowledge and determined socio-demographic variables related to knowledge of coronary artery disease risk factors, acute myocardial infarction symptoms, and first decision-making in acute myocardial infarction situation. This cross-sectional study involved collecting data from 345 lay people from the Midwestern United States. The research team used t-tests to compare cardiovascular disease knowledge in relation to socio-demographic variables. Associations between first decision-making and demographic characteristics were tested using Chi-squared testing.

We found that participants recognized classic acute myocardial infarction symptoms more readily than atypical symptoms. Participants who were younger, college educated, had higher household income and health insurance had greater knowledge of symptoms. Older adults were less informed about acute myocardial infarction symptoms. Approximately half of the participants misidentified specific typical coronary artery disease risk factors, especially diabetes mellitus. Over 90% of respondents indicated "Calling 9-1-1" for their first decision in an acute myocardial infarction situation. Older adults and people with lower income and education displayed the greatest lack of knowledge. Nurses should provide health education programs about atypical cardiovascular symptomology and promote calling emergency medical services when experiencing acute myocardial infarction to address the concerning lack of knowledge and awareness in this population.

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Introduction

Coronary artery disease (CAD) remains the leading cause of death in the United States (U.S.) with approximately 370,000 people experiencing an acute myocardial infarction (AMI) annually.[1] Every 90 seconds, a person dies from an AMI, and over

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half of these die because of delaying treatment.[1] Advanced treatments for AMI, such as thrombolytic drugs and reperfusion methods, are very effective when initiated within a specified timeframe, two hours.[2] Fast recognition of AMI and the receipt of early interventions reduces death rates.[3] Unfortunately, many patients wait too long before seeking critical initial treatment.[4] Delaying treatment robs the victims of accessing advanced technology and available treatment options for AMI, causing severe complication and high mortality.[5,6]

Over 80% of AMI victims delay during the recognition action-phase, a time period from the initial onset of symptoms until a decision is made to seek medical help.[2,7] Knowledge of AMI symptoms is associated with appropriate and fast decision making.[7] People who cannot recognize their symptoms often delay the decision to seek treatment.[8] Hours may pass after symptoms present because individuals with AMI are often confused.[9] With greater knowledge of AMI symptomology, people respond faster to related emergency situations.[9]

The symptom most commonly recognized with AMI is chest pain. Yet more than 50% of people with AMI do not experience chest pain, especially older adults and females.[8] Greenlund et al. found that over 75% of their study participants failed to recognize atypical symptoms of AMI, such as shortness of breath, chest discomfort, faintness, and fatigue.[10] Swanoski reaffirmed this study by demonstrating that over half of older participants had poor understanding of AMI symptomology.[11] Researchers found that older adults, females, and diabetic persons who experience atypical symptoms of AMI often fail to recognize these symptoms, resulting in delayed treatment, correlating with worse health outcomes.[8,12,13] Insufficient knowledge and confusion about AMI symptoms can cause delayed treatment that results in poor outcomes.[8]

Poor knowledge of CAD risk factors can also negatively impact outcomes, disease progression, and delay decision-making, among those with low education level, of minority race, and living alone.[1] Ten common risk factors for CAD are advanced age, high blood pressure, high blood cholesterol or other lipids, obesity, diabetes mellitus, smoking, stress, physical inactivity, poor nutrition/fatty foods, and a family/genetic tendency for CAD.[1,14] However, the knowledge of CAD risk factors is often limited, especially among people who utilize emergency medical services.[15] Sometimes, people's perception of their own risk is not synonymous with their true risk of MI, and they do not recognize that personal behaviors and characteristics are true risk factors for CAD.[15] Females perceive CAD and AMI as a predominantly male health concern.[16] People who think they have no CAD risk factors are less likely to recognize AMI symptoms, and consequentially delay seeking treatment.[1,17,18] In contrast, those who have a history of CAD and understand related risk factors, know more about AMI symptoms.[17,18] Moreover, they can make a connection between their symptoms and heart problem. Thus, they quickly make decision to visit the emergency department.[17,18] Improving knowledge of CAD risks and AMI symptoms can reduce the time to treatment and thus reduce negative health outcomes.

Two studies have examined the general public's knowledge of AMI symptoms.[10,11] Individuals who have CAD risk factors and understand their relevance to cardiovascular disease more readily understand the connection between AMI symptoms and heart disease.[18] There is considerable room for improving knowledge of CAD risk factors, AMI symptoms, and first decision-making in response to an AMI situation. We found evidence that knowledge of typical AMI symptoms (i.e. chest pain) is clearly described and understood; however, knowledge of atypical AMI symptoms is less evident in the literature. Moreover, many people are unaware of their CAD risk factors. Although the American Heart Association recommends quickly calling 9-1-1 as most important to surviving an AMI, many people still delay before seeking medical attention. To address this gap in the literature, this

study aimed to characterize the general public's knowledge of CAD risk factors, AMI symptoms, and the first decision-making in response to an AMI situation.

Study Aims

The specific aims of this study were to (1) describe knowledge of CAD risk factors, AMI symptoms, and first decision-making in AMI situation based on socio-demographic variables; 2) compare socio-demographic differences in relation to knowledge of CAD risk factors, AMI symptoms, and first decision-making in AMI situations; and 3) explore characteristics related to poor understanding of CAD risk factors, AMI symptoms, and appropriate initial decision-making in AMI situations.

Methods

Research Design

We used a cross-sectional survey design for this study.

Sample and Setting

The study population consisted of lay people residing in the St. Louis metropolitan statistical area (MSA) in Midwestern United States with an estimated population of 2.8 million for the population (calculated from the most generalizable U.S. data), the calculated sample size was 289 with a margin of error of 0.05, and Z score of 1.96 for a 95% confidence interval. An approximate 20% margin was incorporated in the calculation for potentially missing data among participants, so the anticipated pool would be 345 people. Data were collected at two Catholic parishes in the St. Louis MSA. The percentage of participants from the first and second churches was approximately 60% and 40%, respectively, and these amounts were based on their willingness to participate in this study. To be eligible for the study, potential adult participants needed to be (1) ≥18 years old, (2) able to speak or read English, and (3) willing to participate in this study by giving verbal consent.

Ethical Considerations

The Saint Louis University's Institutional Review Board approved the research in October, 2014. The approval number was 25081. Moreover, the research team obtained permission from the two respective pastors to conduct the surveys at their parishes. Participants could refuse to participate in this study and their decision did not affect their participation in churches' activities. However, those who wished to participate completed the survey independently and anonymously.

Instruments

A socio-demographic form (SD-F) was designed to determine what factors may influence knowledge and decision among lay people. There were eight items in total with seven multiple-choice items and one open-ended item. The seven items were gender, marital status, ethnicity, education attained, annual household income, geographic location, and health insurance. The one item was age that was reported as continuing variable.

The Knowledge of CAD Risk Factors (K-CADRF) instrument was developed by the research team based on a quiz from the American Heart Association[1]. There were 12 items that included 10 positively worded items and two negatively worded items about CAD risk factors that used a *yes*, *no*, and *not sure* scoring method. For positive questions, a *yes* is scored as 1 point; for *no*, the score is 0 points. However, the score is always 0 for *not sure* for both positively and negatively worded items. The summed score ranges from 0-12. The higher the score demonstrates higher knowledge of CAD risk factors.

The *Knowledge of AMI Symptoms* (K-AMIS) was developed by the research team from the 13-item Behavioral Risk Factor Surveillance Survey (BRFSS), heart attack and stroke module questionnaire. This questionnaire was used in several

studies that collects data concerning knowledge of cardiovascular (CV) symptoms (12 items) and initial decision-making in response to an emergent cardiovascular event (1 item).[20] We modified the survey to focus only on AMI symptoms through simple modifications of the language used in the metric. The 12-item section on knowledge of AMI symptoms includes 6 positively worded and 6 negatively worded questions, both with 3 options: *yes*, *no*, and *not sure*. The negatively worded items were added to examine integrity of responses.[11] The scoring method is the same as the K-CADRF. The summed score ranges from 0-12.[11] The higher the score demonstrates higher knowledge of AMI symptoms.

First Decision Making in AMI Situation (FDAMI) was one question. This question asked about first decision-making when someone is experiencing a heart attack and this one question has 7 choices. These are 1) taking him/her to the hospital, 2) telling him/her to call their doctor, 3) calling 9-1-1, 4) calling his/her spouse, 5) having him/her smell cologne or drink water, 6) pouring cold water over his/her face, and 7) giving him/her medication. Participants who select *calling 9-1-1* receive 1 point; all other choices have 0 points.

The validity and reliability of the orginal questionnaires was not reported. However, for this study, a cardiologist and two expert coronary care registered nurses provided face content validity for both instruments. We changed the word "Acute Myocardial Infarction" to "Heart Attack" based on the expert's recommendation. Moreover, after a two-week interval, test-retest reliability was checked using 30 pre-identified participants. The intra-class correlation coefficients were 0.90 and 0.89 for the K-CADRF and K-AMIS. Reliabilities (Kuder-Richardson-20: KR-20) for the actual study were 0.89 and 0.84 for the K-CADRF and K-AMIS, respectively.

Data Collection Procedure

The first two authors briefly introduced the study and inclusion criteria before the church members started the events, after which, participants who met the criteria voluntarily completed the questionnaire distributed in the church pews. Participants deposited the questionnaires in a designated box while exiting the church.

Data Analysis

Data were analyzed using SPSS® statistical analysis software package (IBM, Inc.), version 20. The descriptive statistics were used to analyze the socio-demographic variables, knowledge of CAD risk factors, knowledge of AMI symptoms, and first decision-making in an emergent AMI situation. Bivariate analysis examined various relationships between variables by using *t*-test and Chi-square based on the appropriate level of data. A series of binary logistic regression analyses was conducted to explore who is likely to miss CAD risk factors, AMI symptoms, and appropriate first decision-making in AMI situation. An alpha level of .05 was set a priori to determine statistical significance. For the final statistical analysis, 16 participant surveys were excluded because of incomplete or unclearly marked answers.

Results

Participants' ages ranged from 18-92 years with a mean of 55.4 years (*SD*=15.8). The majority was female (*n*=211, 61.3%), between 18-64 years old (*n*=240, 69.6%), and college educated (*n*=236, 68.4%). They were mostly White/Caucasian (*n*=326, 94.5%), married (*n*=270, 78.3%), lived in an urban/non-rural area (*n*=303, 87.8%), had health insurance (*n*=328, 95.0%), and had annual household incomes equal to or over US $50,000 (*n*=266, 78.2%) (**Table 1**).

Table 1 Differences in knowledge of acute myocardial infarction symptoms and coronary artery disease risk factors by socio-demographic variables and first decision response

Factors			AMI Symptoms					CAD Risk Factors					First Decision Making				
		n (%)	M	*SD*	*t*	*df*	*p*	*M*	*SD*	*t*	*df*	*P*	Calling 9-1-1	Not	X^2	*df*	*Sig.*
Gender	Male	133 (38.7)	7.7	2.5	.93	326	.35	10.1	1.6	.67	334	.51	115	11	1.16	1	.30
	Female	211 (61.3)	7.9	2.5				10.2	1.8				181	11			
Age	Range from 18-92 years, M (SD) = 55.4 (15.8)																
	18-64 years	240 (69.6)	8.1	2.4	2.40	327	.02*	10.3	1.6	1.87	335	.06	211	15	.13	1	.72
	>=65 years and older	105 (30.4)	7.4	2.6				9.8	1.9				83	7			
Marital Status	Married	270 (78.3)	7.9	2.5	.45	327	.65	10.1	1.7	.48	335	.63	62	4	.09	1	.76
	Other	75 (21.7)	7.7	2.4				10.2	1.6				235	18			
Ethnicity	White/ Caucasian	326 (94.5)	7.9	2.5	1.14	327	.25	10.2	1.6	.89	335	.39	272	20	.01	1	.91
	Non-White	19 (5.5)	7.2	2.8				9.6	2.6				25	2			
Education	College or above	236 (68.4)	8.1	2.5	2.25	327	.03*	10.2	1.7	.85	335	.40	264	19	.13	1	.72
	No College	109 (31.6)	7.4	2.5				10.0	1.8				33	3			
Income	<$50,000	74 (21.8)	7.0	2.2	3.53	322	.01**	9.9	1.9	.91	330	.37	58	3			
	>=$50,000	266 (78.2)	8.1	2.5				10.2	1.7				235	19			
Local	Non-rural	303 (87.8)	7.9	2.5	.53	327	.60	10.2	1.6	.80	335	.42	262	19	.07	1	.80
	Rural	42 (12.2)	7.7	2.6				9.9	2.1				35	3			
Health Insurance	Have	328 (95.0)	7.9	2.5	2.33	326	.02*	10.2	1.7	.78	334	.44	282	21	.30	1	.58
	Do not have	17 (5.0)	5.0	1.8				9.5	1.9				14	1			
First Decision Making	Call 9-1-1	297 (93.1)	8.0	2.5	1.47	304	.14	10.2	1.7	1.28	311	.20	-	-	-	-	-
	Not	22 (6.9)	7.1	2.2				9.7	1.9								

*. Mean score different is significant at the 0.05 level.

**. Mean score different is significant at the 0.01 level.

Research aim 1, a large majority of participants (**Table 2**) correctly answered that chest pain or discomfort (97.1%), sudden sweating (91.7%), and pain/discomfort in the arms/shoulders (91.2%) are symptoms of AMI. Most responded correctly that shortness of breath (81.5%), pain/discomfort in the jaw/neck/back (67.6%), and lightheadedness/ faintness (65.8%), are symptoms of AMI, but that severe headache (58.1%) and trouble hearing (51.8%) are not symptoms of AMI. Moreover, half of the participants, or fewer, correctly identified that sudden confusion or trouble speaking (50.0%), body numbness (45.5%), sudden trouble seeing (42.0%), and loss of balance (38.2%) as not indicative of AMI.

Over 90% of participants correctly identified 7 of the 10 CAD risk factors. Between 70% and 88% responded correctly to three risk factors. Approximately half the participants correctly identified diabetes mellitus as a risk factor for CAD (57.7%) but also incorrectly thought that eating raw food was a risk factor (57.3%). Lastly, 297 respondents (93.1%) correctly identified "Calling 9-1-1" as the first decision-making when someone is experiencing a heart attack (Table 2).

Table 2 Knowledge of acute myocardial infarction symptomology, coronary artery disease risk factors, and first response to an acute myocardial infarction among lay people

Items	Questions	Response	Correct Answer	%
1	Do you think pain or discomfort in the jaw, neck, or back are symptoms of a heart attack?	340	230	67.6
2	Do you think feeling weak, lightheaded, or faint is symptoms of a heart attack?	342	225	65.8
3	Do you think chest pain or discomfort is symptoms of a heart attack?	341	331	97.1
4*	Do you think sudden trouble seeing in one or both eyes is a symptom of a heart attack?	338	142	42.0
5	Do you think pain or discomfort in the arms or shoulder is symptoms of a heart attack?	341	311	91.2
6	Do you think shortness of breath is a symptom of a heart attack?	341	278	81.5
7*	Do you think sudden confusion or trouble speaking are symptoms of a heart attack?	340	170	50.0
8*	Do you think sudden numbness or weakness of face, arm, or leg, especially on one side are symptoms of a heart attack?	341	155	45.5
9*	Do you think sudden trouble hearing in one or both ears is a symptom of a heart attack?	338	175	51.8
10	Do you think sudden heavy sweating is symptom of a heart attack?	339	311	91.7
11*	Do you think sudden trouble walking, dizziness, or loss of balance is symptoms of a heart attack?	340	130	38.2
12*	Do you think severe headache with unknown cause is a symptom of a heart attack?	341	198	58.1
13	Do you think stress is a risk factor of coronary artery disease?	343	302	88.0
14	Do you think smoking is a risk factor of coronary artery disease?	341	326	95.6
15	Do you think poor nutrition/eating fatty food is a risk factor of coronary artery disease?	343	334	97.4
16	Do you think obesity is a risk factor of coronary artery disease?	342	334	97.7
17	Do you think hypertension is a risk factor of coronary artery disease?	343	313	91.3
18*	Do you think alcohol use is a risk factor of coronary artery disease?	342	240	70.2
19*	Do you think uncooked food is a risk factor of coronary artery disease?	342	196	57.3
20	Do you think high cholesterol is a risk factor of coronary artery disease?	343	329	95.9
21	Do you think genetic tendency is a risk factor of coronary artery disease?	341	329	96.5
22	Do you think physical inactivity is a risk factor of coronary artery disease?	343	319	93.0
23	Do you think diabetic mellitus is a risk factor of coronary artery disease?	343	198	57.7
24	Do you think older age is a risk factor of coronary artery disease?	342	241	70.5
25	What is an appropriate first plan-of-action when in the presence of someone having a heart attack	319	297	93.1

* Refer to negatively worded questions. All negatively worded questions were reverse-coded questions

Research aim 2, a series of *t*-tests (**Table 1**) showed no statistical differences in knowledge scores of CAD risk factors based on socio-demographic variables. Furthermore, no significant differences of AMI symptom knowledge were found based on gender, marital status, ethnicity, urban/rural location, or first decision-making. However, higher knowledge scores of AMI symptoms were found among participants with younger, college educated, an annual household income over US $50,000, and with having health insurance. There was no correlation between socio-demographic variables and appropriate first decision-making, *calling 9-1-1*, in AMI situation. Finally, higher scores on knowledge of AMI symptoms and CAD risk factors were not significantly related to the first decision of calling 9-1-1 when compared to other first decision options. The processes of exploring predictive factors including knowledge of CAD risk factors and AMI symptoms on first decision-making in AMI situation could not proceed based on these results.

Research aim 3, two separate cluster analyses were conducted for each of the AMI symptom scores, CAD risk factors score, and first decision-making in AMI situation to create a profile of those less likely to answer correctly. The 12 items of CAD risk factors and 12 items of AMI symptoms were put into this analysis. Unfortunately, one item of first decision-making in AMI situation was excluded because the t-test demonstrated no association between this variable and the included socio-demographic variables. The dendrograms showed that the participants tended to incorrectly identify the same items as indicated in the descriptive statistics. Then, a series of binary logistic regression analyses with Wald backward deletion method was conducted, using these incorrectly identified items as dependent variables with several demographic variables to explore which groups were likely to answer items incorrectly.

Participants with an income less than US $50,000 (**Table 3**) had an increased probability of incorrectly identifying the following symptoms: trouble seeing in one or both eyes, sudden confusion or trouble speaking, sudden trouble hearing in one or both ears, and sudden trouble walking or loss of balance (*OR*s ranging between 1.7 and 2.6, $p<.05$). Females were more likely to misidentify a severe headache of unknown cause as a symptom of AMI (*OR*=1.7, $p<.05$). Those with no college education were more likely to incorrectly identify uncooked food as a CAD risk factor (*OR*=1.9, $p<.05$). Finally, participants who were widowed or separated were more likely to incorrectly identify diabetes mellitus as a CAD risk factor (*OR*=1.3, $p<.05$).

Table 3 The predictor of knowledge of acute myocardial infarction symptoms and coronary artery risk factors (analyzed by item) varying with socio-demographic variables

Outcomes	Predictors	B	SE	Wald	OR	p-values
Sudden trouble seeing in one or both eyes	Income	.9	.31	1.7	2.6	.002
Sudden confusion or trouble speaking	Income	.8	.28	7.4	2.2	.007
Sudden trouble hearing in one or both ears	Income	.6	.28	4.0	1.7	.045
Sudden trouble walking or loss of balance	Income	.6	.30	3.9	1.8	.049
Severe headache with unknown cause	Gender	-.4	.23	3.3	1.7	.048
Uncooked food	Education	.7	.28	5.3	1.9	.022
Diabetes mellitus	Marital status	-1.4	.65	4.3	1.3	.037

Discussion

Our results show the public generally recognizes classic AMI symptoms more readily than the atypical symptoms. Although a large majority of participants knew that chest pain or discomfort and arm/shoulder pain were AMI symptoms, approximately two-thirds of respondents recognized pain or discomfort in the jaw/neck/back area as a symptom. Fortunately, a majority understood that atypical symptoms of heavy sweating and shortness of breath could be indicative of an AMI, but fewer participants understood that feeling weak, lightheaded or faint could be an AMI symptom. Many participants confused AMI and stroke symptoms. These findings are consistent with other previous studies.[10,21,22,23] This is important because lack of knowledge of atypical AMI symptoms resulted in delayed treatment and higher morbidity and mortality.[22]

Many participants falsely thought consuming uncooked food was a CAD risk factor and did not identify diabetes mellitus as a risk factor. People with diabetes unconcerned about their AMI risk factors could not associate their cardiovascular risk factors and AMI symptoms, which resulted in delayed treatment.[24,25] Diabetes mellitus is a significant public health problem considering the growing prevalence of diabetes mellitus in the U.S. and globally.[1] In general, adults with diabetes have increased risk of cardiovascular disease and subsequent morbidity and morality.[26] As stated earlier, CAD risk factors, such as diabetes mellitus, are manageable. Our survey participants, with more favorable sociodemographic characteristics than the general population, were less informed about the risks of cardiovascular disease. This is a concern and bears further attention.

The data show that most participants would call 9-1-1 in an emergent AMI situation. Other studies have reported similar results.[10,11] This is an important finding that correlates with the American Heart Association's recommendation, *the way to survive when experiencing heart attack*.[1] However, only understanding the appropriate response when experiencing heart attack is necessary but not sufficient to prevent delayed treatment. Individuals who cannot recognize AMI symptoms may be slower to respond. This means the major problem still resides in knowledge and recognition of AMI symptoms.

Regarding knowledge differences in relation to socio-demographic variables, although Greenlund et al. reported that White/Caucasians have greater knowledge of AMI symptoms than minorities, we found no racial/ethnic difference.[10] A low minority representation in our sample likely influenced these findings. We also found that participants who have no college education, lower household income and no health insurance scored lower on the AMI section. Swanoski et al. and Bird et al. reported similar findings.[11,17] Households with low income and no health insurance have serious limitations to health care access and knowledge.[27]

This study found that older adults demonstrated lower knowledge of AMI symptoms. In the same way, females misidentified two symptoms which were shortness of breathing and heavy sweating as symptoms of AMI. This is very important because older adults and females often experience atypical symptoms and fail to understand the symptomology's relationship to AMI, ultimately resulting in delayed treatment.[8,28,29] More attention to AMI symptomology is recommended and targeted health education for these groups is needed to decrease this knowledge gap.

We found no association between socio-demographic variables and first decision-making in AMI situation. Moreover, knowledge of CAD risk factors and knowledge of AMI symptoms were not associated with first decision-making in AMI situation. These findings were contrast with previous studies.[7,8,9] It is possible that knowledge of cardiovascular disease and risk factors is correlated with religious affiliation, since we used Catholic Church members specifically for this study. Another explanation is that first

decision-making in AMI situation may not depend on only cardiovascular knowledge. Katz at al. explained that personal beliefs are an important factor one's decision making when expereince AMI.[30] Nguyen et al. found that females delayed treatment longer than males based on the belief that AMI is a male disease.[16] This variable is important for future studies.

Limitations

The convenience sampling method, funding support, and time limitation did not capture a representative sample of the St. Louis metropolitan area, particularly race/ethnicity, geographical location, and health insurance status. Nevertheless, the findings suggest older adults and people with low income and educational levels still lack important knowledge about their cardiovascular health.

Conclusions and Implications

Knowledge of CAD risk factors and AMI symptoms of participants for this study were acceptable; however, this sample population had greater knowledge of CAD risk factors. We found that participants recognized classic AMI symptoms more readily than atypical symptoms. Younger, college educated, higher household income, and had health insurance reported better knowledge of AMI symptoms. Older adults were less informed about AMI symptoms. Approximately half the participants failed to identify diabetes mellitus as a CAD risk factor. Over 90% of respondents would call 9-1-1 when experiencing AMI.

Awareness of atypical AMI symptoms is still a significant factor for AMI treatment delay, especially among older adults and women. When experiencing AMI, knowing CAD risk factors helps people link their symptoms to a heart problem, especially for those who have diabetes mellitus. Lack of knowledge among the older adult and women would suggest that these two groups might benefit from health education programs.

Although knowledge alone cannot effectively influence action, targeted education is the first logical step towards improving outcomes. Nurses play an important role in health promotion and prevention, especially a global critical health problem such as AMI. Nurses should provide specific health education programs for older adults, women, and people with low household income and lower education. These programs would benefit this population by promoting knowledge and preventing delaying treatment, ultimately decreasing morbidity and mortality. Educational programs should focus on both risk factors and cardiac symptoms, since lack of knowledge in both areas contributes to poor cardiovascular health and delayed treatment. Critical gaps in knowledge remain regarding how to optimize targeted educational interventions. Future research that mitigates these knowledge gaps and explores beliefs about AMI is needed to prevent the significant morbidity and mortality associated with cardiovascular events.

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ความรู้ทั่วไปเกี่ยวกับปัจจัยเสี่ยง อาการ และการตัดสินใจแรกเพื่อตอบสนองต่ออาการกล้ามเนื้อหัวใจตายเฉียบพลันของประชาชนทั่วไป

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บทคัดย่อ: การขาดความรู้เกี่ยวกับอาการของภาวะกล้ามเนื้อหัวใจตายเฉียบพลันและปัจจัยเสี่ยงของโรคหลอดเลือดหัวใจโคโรนารีมีความสัมพันธ์กับการตัดสินใจล่าช้าในการค้นหาการดูแลรักษาและส่งผลให้เกิดภาวะแทรกซ้อนที่สำคัญหลายอย่าง การตัดสินใจแรกที่เหมาะสมซึ่งได้แก่การโทร 9-1-1 เพื่อเรียกบริการฉุกเฉินของโรงพยาบาลคือทางรอดเมื่อประสบภาวะวิกฤตินี้ การศึกษาครั้งนี้มีวัตถุประสงค์เพื่อศึกษาความรู้ทั่วไปและปัจจัยที่เกี่ยวข้องกับความรู้เกี่ยวกับอาการของภาวะกล้ามเนื้อหัวใจตายเฉียบพลัน ปัจจัยเสี่ยงของโรคหลอดเลือดหัวใจโคโรนารีรวมทั้งการตัดสินใจแรกเมื่อมีอาการของภาวะกล้ามเนื้อหัวใจตายเฉียบพลัน ผู้วิจัยใช้การศึกษาแบบภาคตัดขวาง เก็บรวบรวมข้อมูลจากประชาชนทั่วไปจำนวน 345 ราย ณ รัฐฝั่งตะวันตกของสหรัฐอเมริกา โดยการใช้แบบสอบถามความรู้เกี่ยวกับอาการกล้ามเนื้อหัวใจตายเฉียบพลัน ปัจจัยเสี่ยงของโรคหลอดเลือดหัวใจโคโรนารีและการตัดสินใจแรกเมื่อมีอาการของกล้ามเนื้อหัวใจตายเฉียบพลัน เปรียบเทียบคะแนนความรู้และจำนวนของผู้ตัดสินใจแรกต่อภาวะกล้ามเนื้อหัวใจตายเฉียบพลันด้วยการโทร 9-1-1 ตามคุณลักษณะพื้นฐานทางสังคมและเศรษฐานะด้วยสถิติ t-test และ Chi square เพื่อค้นหาปัจจัยที่มีความสัมพันธ์กับตัวแปรในการศึกษา จากการศึกษาพบว่าผู้ร่วมวิจัยมีการรับรู้อาการเฉพาะ (classic AMI symptoms) ของภาวะกล้ามเนื้อหัวใจตายเฉียบพลันมากกว่าอาการที่แปลก (atypical symptoms) โดยผู้ที่มีอายุน้อย มีการศึกษาระดับปริญญาตีขึ้นไป มีรายได้สูงและมีประกันสุขภาพจะมีความรู้เกี่ยวกับอาการของภาวะกล้ามเนื้อหัวใจตายเฉียบพลันมากกว่ากลุ่มอื่น ขณะเดียวกันผู้สูงอายุเป็นกลุ่มที่มีความรู้เกี่ยวกับอาการของภาวะกล้ามเนื้อหัวใจตายเฉียบพลันค่อนข้างน้อย นอกจากนี้ ประมาณครึ่งหนึ่งของผู้เข้าร่วมการวิจัยไม่สามารถบอกปัจจัยเสี่ยงที่มีความเฉพาะเจาะจงต่อโรคหลอดเลือดหัวใจโคโรนารีได้โดยเฉพาะอย่างยิ่ง โรคเบาหวาน อย่างไรก็ มากกว่า 90% ของผู้ร่วมวิจัยจะโทรเรียกบริการฉุกเฉินของโรงพยาบาล (โทร 9-1-1) ซึ่งเป็นการตัดสินใจแรกเมื่อมีอาการของภาวะกล้ามเนื้อหัวใจตายเฉียบพลัน การศึกษาครั้งนี้สะท้อนให้เห็นว่าผู้สูงอายุ ผู้มีรายได้น้อย และผู้มีการศึกษาต่ำกว่าระดับปริญญาตรียังขาดความรู้เกี่ยวกับอาการของภาวะกล้ามเนื้อหัวใจตายเฉียบพลัน พยาบาลจึงควรให้สุขศึกษาเกี่ยวกับอาการแสดงที่แปลกของภาวะกล้ามเนื้อหัวใจเฉียบพลันและการโทร 9-1-1 เพื่อส่งเสริมความรู้และเพิ่มความตระหนักในประชาชนกลุ่มดังกล่าว

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คำสำคัญ: ประชาชนทั่วไป การตัดสินใจตอบสนองต่อการรักษา กล้ามเนื้อหัวใจตายเฉียบพลัน โรคหัวใจและหลอดเลือด อาการ ปัจจัยเสี่ยง

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