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Research Article

Awareness of Myocardial Infarction in Nangarhar Residents: A Community Based Study

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Abstract

Myocardial infarction is the leading cause of morbidity and mortality worldwide. The overall aim of the study was to evaluate community awareness about myocardial infarction.

It was a community-based cross-sectional study conducted during one month including both male and female participants aged 18 years and over in Nangarhar province of Afghanistan.

The percentage of awareness for risk factors was as follows: Diabetes (56.4%), Hypertension (43.4%), Elderly (42.1%), Obesity (39.8%), Physical inactivity (38.5%), Hyperlipidemia (37.6%), and Family history (33.8%). Furthermore, knowledge about symptoms and signs was as the following: chest pain (67.4%), pain in neck and jaw (57.8%), Dyspnea (50.7%), pain in arms (46.1%), weakness/fainting (40.1%), cold sweats (38.2%), nausea and vomiting (34.5%), anxiety (29.6%), fever (22.7%), hypotension/shock (20.1%), and silent myocardial infarction (11.3%). Moreover, 24% of participants did not know about the prevention strategies for myocardial infarction. Regarding treatment, 80.3% of participants exactly knew to go to the emergency room, 11.9% of participants would intend to go to a general practitioner (GP), 5.6% of participants would ask others for advice on what to do, and 2.2% of participants would wait to see if the symptoms go away spontaneously or if the symptoms were due to other diseases.

The current awareness level about myocardial infarction especially atypical symptoms, risk factors, prevention, and treatment strategies in Nangarhar residents was insufficient, especially in females and healthy individuals, and warrants designing and implementing immediate awareness programs in order to avoid delay of treatment-seeking, misbeliefs about the disease and subsequent morbidity and mortality.

More Information

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Keywords: Awareness; Myocardial infarction; Knowledge; Afghanistan

Introduction

Ischemic heart diseases are perceived as well-known causes of morbidity and deaths worldwide. Fortunately, deaths from terrorism, road injuries, and ischemic heart disease have been progressively decreasing due to political establishment and improvement in healthcare facilities most specifically for cardiovascular disease [1].

Literacy level is associated with awareness and early recognition of the disease profiles; in addition, low literacy level is demonstrated as a leading factor in delayed diagnosis of diseases and seeking medical care [2]. For example, a study in Pakistan demonstrated that one out of three people did not know about myocardial infarction symptoms, which caused a prehospital delay in seeking care [3]. In fact, the clinical profile in association with myocardial infarction is shown to be retrosternal chest pain often radiating to the left should and jaw with characteristics of burning, squeezing, bursting, tightening, dyspnea, anxiety, cold sweats, nausea, vomiting, etc. [4].

A street survey in Birmingham, England finding out about the awareness of all seven symptoms of myocardial infarction accepted in the literature showed comparatively great awareness of chest pain, pain in the arm, and dyspnea respectively [5]. In fact, several factors affect awareness of myocardial infarction symptoms or knowledge about myocardial infarction including age, gender, education level, history of the disease, or being in close contact with such patients [6,7].

Despite a large number of research and surveys about awareness and knowledge of myocardial infarction in

different countries, we still lack such a study to know about the knowledge of our community about the fatal disease; therefore, we aimed to conduct this study to reveal the existing knowledge of our community about myocardial infarction so that it could be used in efficient preventive social awareness raising programs.

Methodology

It was a community-based cross-sectional study conducted during one month including both male and female participants aged 18 years and over living in Nangarhar province of Afghanistan (Jalalabad city and districts).

Data was collected using a pre-structured questionnaire including a written consent form before participants could start with the questions, sociodemographic data of the participants (age, gender, residence, education, profession, and income), causes and risk factors of myocardial infarction, clinical profile of the disease (signs and symptoms), treatment and prevention of the disease, and source of information the participants got. For the ethical purpose, the identity of the participants was hidden and approval was taken from the ethical committee of Afghan Momand Medical Complex and Research Center referencing ETH97 dated 29/05/2024. The questionnaire was prepared in the local language, Pashto.

Scientific novelty

Immediate invasive strategies for the treatment of myocardial infarction save lives, so this study aimed to investigate the level of awareness of myocardial infarction and in turn would give substrates to the policymakers and generate hypothesis for further research in the area which will help find causes of unawareness and prompt a response accordingly.

The sample size calculator proposed a sample size of 385 participants but we increased participants to 550 so that we could improve data reliability and further exclude participants with no consents, medical personnel/students, and incomplete questionnaires, as a result, we had 512 participants.

Data was analyzed using Statistical Package for Social Sciences (SPSS version 26) using mean ± standard deviation for continuous variables and frequencies and charts for categorical variables.

Results

The study included 512 participants whose mean age was 49.7 ± 9.8 years. 13 people refused to participate and 15 questionnaires were incomplete and unreliable. 60.7% of the participants were male and 39.3% were female. Moreover, most participants were from the city (51%) as a large number of people are getting urbanized giving the city a comparatively great population followed by participants from the nearby districts of the city including Chaparhar, Kama, Behsud, and Sorkhroad (28.5%). Further, the sociodemographic characteristics of the study participants are shown in Table 1.

Regarding the etiology and risk factors, most of the participants had insufficient knowledge about the cause (36.3%). In addition, most participants had some knowledge about the leading risk factors of myocardial infarction as the following Hypertension (43.2%), Diabetes (56.4%), Obesity (39.8%), increasing age (42.1%), and so on, as shown in Figure 1.

Figure 1, in addition, shows that participants were approximately equally aware of obesity (39.8%), physical inactivity (38.5%), hyperlipidemia (37.6%), and family history (33.8%) as being the risk factors of myocardial infarction.

Recognition of the whole clinical profile was troublesome among the study participants but most could recognize chest pain as the leading symptom of myocardial infarction (67.4%). Pain or discomfort in the jaw and neck was recognized by 57.8% of participants which is shown in Table 2 along with the recognition percentage of other symptoms and signs. In addition, Table 2 shows awareness of the clinical profile in targeted populations such as diabetic patients and so on.

Table 1: Sociodemographic Description of the Participants.

Parameter		Frequency (%)
Gender	Male	311 (60.7%)
	Female	201 (39.3%)
Marital status	Single	127 (24.8%)
	Married	385 (75.2%)
Residence	Jalalabad city	261 (51%)
	Surrounding districts	146 (28.5%)
	Farther districts	105 (20.5%)
Education	Illiterate	118 (23%)
	High school	280 (54.7%)
	Bachelor and over	114 (22.3%)
Age groups	Under 40	286 (55.9%)
	≥ 40	226 (44.1%)
Blood pressure	Hypertensive	67 (13.1%)
	Normotensive	445 (86.7%)
Diabetes	Yes	103 (20.1%)
	No	409 (79.9%)
Smoking	Yes	132 (25.8%)
	No	380 (74.2%)

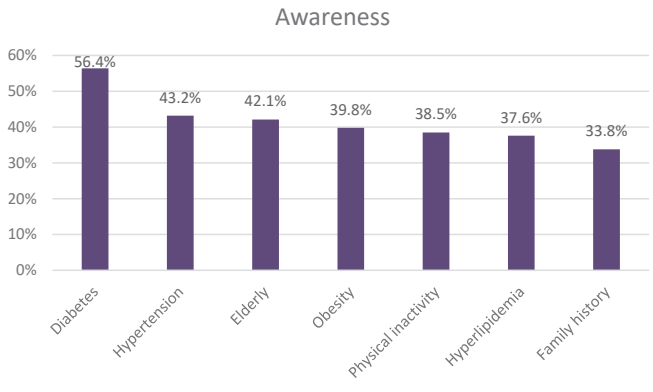

Figure 1: Awareness of risk factors.

Table 2: Awareness of the clinical profile.

Parameter	Percentage					
	Healthy individuals	DM	HTN	Obese	Physically inactive	Hyperlipidemia
Retrosternal chest pain	67.4%	92%	90.3%	88%	83.7%	89.4%
Pain in the jaw and neck	59.2%	91.1%	87.4%	87.1%	80.9%	87.7%
Dyspnea	50.7%	90.4%	84.9%	74.8%	73%	81%
Pain/numbness in arms	46.1%	89.1%	80.6%	79.8%	69.2%	88.4%
Weakness/dizziness/fainting	40.1%	82.1%	79.9%	70.3%	66.1%	76.5%
Cold sweat	38.2%	76%	74.5%	76.3%	54.4%	79.3%
Nausea and vomiting	34.5%	71.8%	57.3%	81.2%	49.5%	72.4%
Anxiety	29.6%	68.1%	68.8%	67.2%	37.8%	54.6%
Fever	22.7%	56.2%	62.7%	44.6%	29.2%	39.7%
Hypotension/shock	20.1%	67.2%	32.6%	38.7%	40.1%	33.4%
Silent infarction	11.3%	70.4%	20.5%	21.4%	19.2%	41.1%

DM: Diabetes Mellitus; HTN: Hypertension

In fact, 14% of participants were not able to recognize any symptoms of myocardial infarction.

Literacy in Afghanistan varies across gender and age: the young generation and males are more educated while the illiteracy level is high in the elderly and females thus we found symptom awareness across gender and age as participants younger than 40 years and males were more aware of MI symptoms (Table 3).

Regarding the prevention of myocardial infarction, most participants did not clearly know what to do; however, 41% of participants advised losing extra weight, 44.3% participants advised controlling diabetes mellitus, 39.8% of the participants advised regularly controlling hypertension, 46.2% participants recommended blood lipids reduction in general, and 38.5% participants recommended daily exercise. Moreover, 24% of participants did not know about the prevention strategies for myocardial infarction.

However, behavior towards prevention strategies was a bit different in participants. Most participants were not controlling their diet for sugar, oil and fats, and salt at 37.4%, 35.8%, and 33.9% respectively. Moreover, 61% of participants were not regularly checking their blood pressure and sugar.

Knowledge about the immediate treatment of myocardial infarction among participants was sought with a few parameters as to what they would do if they had suffered from myocardial infarction (Figure 2).

Figure 2 shows that 80.3% of participants exactly knew to go to the emergency room in case of myocardial infarction followed by 11.9% of participants who would intend to go to a general practitioner (GP), 5.6% of participants would ask others for advice on what to do, and 2.2% participants would wait to see if the symptoms go away spontaneously or if the symptoms were due to other disease.

However, the majority of the participants did not know about the golden time and appropriate treatment strategy and they would go to the wrong healthcare centers since hospitals are different in Jalalabad and not all the hospitals provide angiography and invasive revascularization procedures.

Table 3: Awareness of symptoms across gender and age.

Parameter	Percentage				
	Healthy individuals	Under 40	≥ 40	Male	Female
Retrosternal chest pain	67.4%	70.8%	64.0%	72.0%	62.8%
Pain in the jaw and neck	59.2%	60.0%	58.4%	61.6%	56.7%
Dyspnea	50.7%	52.0%	49.4%	53.4%	48.0%
Pain/numbness in arms	46.1%	47.2%	45.0%	48.1%	44.1%
Weakness/dizziness/fainting	40.1%	41.1%	39.0%	43.4%	36.8%
Cold sweat	38.2%	41.7%	34.6%	40.5%	35.8%
Nausea and vomiting	34.5%	35.9%	33.0%	36.4%	32.6%
Anxiety	29.6%	32.1%	27.1%	33.0%	26.1%
Fever	22.7%	25.6%	19.8%	24.1%	21.2%
Hypotension/shock	20.1%	21.8%	18.4%	21.4%	18.8%
Silent infarction	11.3%	13.0%	9.6%	12.1%	10.4%

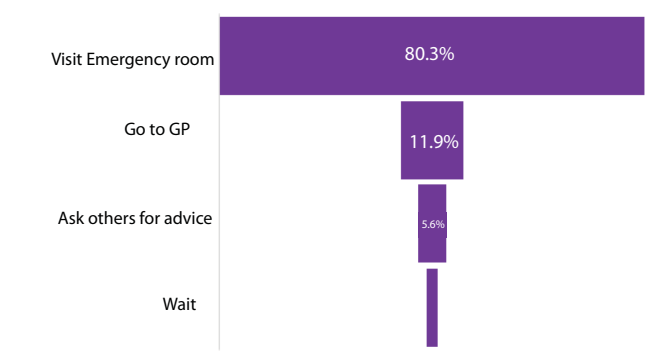

Figure 2: Awareness of treatment.

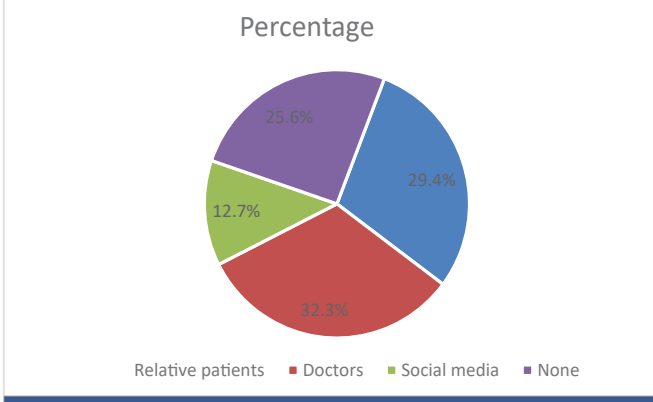

Figure 3: Sources of information.

Sources of information about myocardial infarction were different among the participants: Most participants received their information from healthcare facilities i.e. personal clinics of general practitioners (32.3%) followed by information from patients of relatives (29.4%) as shown in Figure 3.

Figure 2 further shows that 12.7% of participants received information from different types of social media followed by 25.6% of participants who revealed no source of information.

Discussion

There is a golden time for the treatment of myocardial infarction after the symptoms are recognized and the patients should soon visit the emergency department so that revascularization procedures be initiated on time. For this purpose, awareness of the symptoms and immediate revascularization strategies of myocardial infarction is necessary; therefore, we conducted the study whose major finding demonstrated insufficient knowledge of symptoms (though relatively higher for chest pain, pain in the jaw and neck, and dyspnea), risk factors, and treatment of myocardial infarction which relies on a few reasons including higher level of illiteracy, lack of social awareness programs, misbeliefs about MI symptoms due to cultural trends and wrongly relating them to religion, deprivation of females from education, no health insurance and subsequent lack of visits for screening. In addition, a study by Tran and Mittleman in the United States revealed that rurality and urbanization do not affect awareness of MI symptoms [8]. Moreover, a systematic review by Berkman, et al. demonstrated that low literacy level is associated with low intentions of seeking healthcare [2].

Knowledge of the three key symptoms in our study was comparatively higher than a study by Khabti, et al. in Saudi Arabia i.e. 67.4% *vs.* 66.6%, 57.8% *vs.* 21.4%, 46.1% *vs.* 41.2% for chest pain, pain in the neck and jaw, and pain in the arm respectively [6]. In fact, Khabti included back pain with jaw and neck pain so their percentage of knowledge was lower for the parameter. The reason for the difference is the religious and cultural duty of Afghan residents i.e. they would visit when one suffers from a disease and there, they discuss the disease which adds to their knowledge. On the contrary, participants with underlying diseases specifically diabetes, hypertension, dyslipidemia, obesity, and family history of the disease were more aware of MI symptoms in comparison to healthy individuals which denotes another source of information for them, the doctors. In fact, around 90% of the participants with the aforementioned underlying diseases were aware of the chest pain which is comparable to a study by Karki and Pandey in Nepal [9]. Furthermore, 80.3% of participants replied they would go to the emergency room if they suffered from myocardial infarction while the rest of the participants were unable to respond and choose the right option. This finding is comparable with a study by Alsaab, et al. in Saudi Arabia which demonstrated 90% correct responses of its participants [10].

Awareness of MI symptoms in males was higher in comparison to females which is different from the findings of a study by Hertz, et al. in Tanzania which demonstrated that females were more aware of the MI symptoms [11]. In fact, the reason behind this is the deprivation of females from education due to political and cultural (male-dominant society) aspects.

The study despite many crucial and timely results had a few limitations such as the sample size being relatively small, and the setting being only one province of Afghanistan, which would affect results, especially in the case of generalizability.

Based on the findings of our study, we would recommend that health policymakers design special awareness programs (through social media, mosque priests, numerous sports idols, magazines, etc.) in the whole country which would help avoid risk factors and the subsequent disease in the primordial level, and, in addition, avail certain drugs free for the treatment of hypertension, diabetes, and dyslipidemias, and avail sport tools and spaces for public utilization.

Conclusion

The current awareness level about myocardial infarction especially atypical symptoms, risk factors, and prevention and treatment strategies in Nangarhar residents was insufficient, especially in females and healthy individuals, and warrants designing and implementing immediate awareness programs in order to avoid delay of treatment-seeking, misbeliefs about the disease and subsequent morbidity and mortality.

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