Barriers and strategies for identifying and managing risk factors of cardiovascular diseases in levels of preventing, screening, and treating

Saber Azami-Aghdash[1], Morteza Ghojazadeh[2], Samad Shams-Vahdati[3], Reza Piri[4], Khalil Klvany[5], Ruhollah Yaghoubi[5], Zahra Asli[5], Mohammad Naghavi-Behzad*[5]

[1] PhD Student, Hospital Management Research Center, Iran University of Medical Sciences, Tehran, Iran

[2] Associate Professor, Liver and Gastrointestinal Disease Research Center, Tabriz University of Medical Sciences, Tabriz, Iran

[3] Associate Professor, Cardiovascular Disease Research Center, Tabriz University of Medical Sciences, Tabriz, Iran

[4] Student of Medicine, Medical Philosophy and History Research Center, Tabriz University of Medical Sciences, Tabriz, Iran

[5] Student of Medicine, Students' Research Committee, Tabriz University of Medical Sciences, Tabriz, Iran

Abstract

Introduction: Cardiovascular diseases (CVD) are of the main causes of mortality in the world and impose a heavy economic, social, and health burden on society. Therefore, the objective of this study was to determine the barriers and strategies for identifying and managing risk factors of CVD in levels of preventing, screening, and treating.

Methods: During present qualitative study with phenomenological approach, 60 subjects of cardiologists, nurses, patients, and their relatives were selected based on purposive sampling from educational-medical cardiothoracic subspecialty centers. Data were collected using an open-ended questionnaire and was extracted and analyzed with content analysis method.

Results: Barriers were divided into three groups of individual barriers (low awareness, delay in referring for treatment and screening, incorrect beliefs, and not caring about health), socio-economic barriers (high costs, lack of resources, mental and psychological pressures), and health care barriers (non-alignment of doctors, being therapy-oriented, managerial and planning weaknesses, and lack of health care facilities). The most important presenting strategies are: providing public educations, improving family physician program, reduction of costs, cooperation of patients, and using functional indices to evaluate and improve the quality of services.

Conclusion: Low awareness of people, high costs of services, lack of health care facilities, socio-cultural problems of people, and delay in referring of people, for treatment and screening are of the most important barriers of proper identifying and managing risk factors of CVD. Strategies provided in this study to overcome these barriers could be used.

Introduction

Nowadays cardiovascular diseases (CVD) are of the main reasons of mortality in most of the high-income countries and low and middle-income countries, and mortality rate of these diseases is so high in spite of new modern therapies and also using complex interventional and surgical techniques.[1] According to the statistics of the World Health Organization (WHO) death and disability resulted by CVD and brain stroke annually kills 12 million people all around the world.

This organization also estimates that if no effort is made to improve cardiovascular health and if the current trend continues, up until 2020, 25% of healthy living years of life will be lost due to CVD and a high volume of this number would be related to developing countries.[2] In Iran CVD are also considered as the most prevalent cause of mortality.[3] Studies conducted in Iran show that without considering loss resulted from Bam earthquake, 320204 people died and the first reason in terms of number, is death resulted by CVD. In the same year, the number of deaths as a consequence of CVD was 72628 for men and 62068 for women, a total of 134750 cases.[4]

Therefore, according to the lack of resources in health care sector and increase in costs of health care system,[5,6] we need providing strategies and conducting cost-effective interventions and, of course, this is more important and obvious in CVD considering high mortality rate, high costs of cardiovascular cares, and low quality of life for cardiovascular patients.[7-10] To do so, nowadays almost in all around the world primary cares such as prevention, screening, and proper management of potential patients is accepted strategy of all health and medical system not only in cardiac cares but also in all cases and lot of studies have been conducted in this field especially on cardiac diseases.[11-13] Iran also is not an exception in this case and fortunately during recent years primary cares have been properly set up and designed in our country and has had significant achievements in reducing load of diseases.[14,15]

Results of reviewing texts show that there have been deficiencies in field of proper identifying and managing of risk factors of CVD.[12,16] Therefore, the objective of current study is to determine barriers and strategies for identifying and managing risk factors in CVD in levels of prevention, screening, and therapy using qualitative study method by beneficiaries' points of view.

Methods

During present qualitative study which was designed and conducted in Educational-Medical Cardiothoracic Subspecialty centers of Tabriz University of Medical Sciences, Iran, between June 2012 and December 2013, 60 subjects of cardiologists, nurses, patients, and their relatives were entered into the study. The reason for choosing qualitative study method is the ability of this type of study in achieving inside story of participants and extracting their experience, knowledge, and silent information.[2,17] Among different approaches of qualitative studies phenomenological approach was selected to investigate experiences of people and believe in this issue that there are essences of phenomena and experiences of life which could be understood and studied.[18,19] Participants of this study are cardiologists, nurses of cardiovascular wards, cardiovascular patients, and families of patients. Some of patients and doctors could not participate in the study the former due to physical problems and the later due to lack of free time. These people were selected because of their high amount of experience and knowledge. Including criteria were: having at least 1 year of work experience in health and medical system for providers, having at least bachelor degree for managers and nurses and general practitioner degree for physicians, referring to receive cardiovascular cares for patients and passing at least 6 months from diagnosis of CVD. Excluding criteria were: lack of having free time, ability, and tendency to participate in the study.

To select participants, a purposive sampling method was used. In this method, those people are selected as participants who have the highest and richest information and are able to properly share their knowledge with researchers.[17,20] This was continued up to reach information saturation, which is when researchers feel that new information could not be acquired with continuing sampling.[21] Finally, information saturation was gained in this study after the participation of 60 people.

To collect data, an open-ended questionnaire was used which had been designed in this field using review of texts and ideas of expert people. To identify problems of questions and proper recognition by participants, first 5 of them

were completed by participants as pilot, and a questionnaire was finalized after troubleshooting. For patients and their accompaniers who had not ability or literacy to write, questionnaires were completed through an interview with them and writing down their speeches by trained questioner. To analyze data content analysis was used which is a method to identify, analyze, and report themes available inside the text and is very useful in analyzing qualitative data.[22] Data encoding were done by two researchers.

Analyzing and encoding steps were as below:

1. Multiple reading of questionnaire texts-Data immersion (getting familiar with context of data-Immersed)

2. Identifying and extracting primary codes

3. Identifying themes (putting extracted primary codes in related themes)

4. Reviewing and completing identified themes

5. Naming and defining themes

6. Assuring about reliability of extracted codes and themes (agreement between two encoders by discussion and removing disputed cases).

For rigor of data peer check was used in a way that text of questionnaires and extracted codes were given to other colleagues, and their ideas were investigated and applied in results and also data immersion was also used which is a method to create rigor[23] in a way that collected and summarized texts of questionnaires were reviewed for many times by researchers to get a full familiarity and complete comprehension.

To consider ethical issues informed consent was received from participants of this study and people were free to leave the study at any point they wanted. Moreover, the objectives of the study were explained to participants at first. To conduct current study ethical approval was gained from the Regional Ethics Committee for Research located in Tabriz University of Medical Sciences.

Results

Participants of the study include 26 patients (with mean age of 48.3 ± 12.4), 7 accompaniers of patients, 23 nurses (with work experience of 11.6 ± 4.6), and 4 cardiac specialists and subspecialists (with work experience of 14.2 ± 7.3).

Barriers and problems of proper identifying and managing risk factors of CVD in triple levels (prevention, screening, and proper treatment) from participants' points of view have been provided in table 1.

As it is seen in table 1 generally in all triple levels low information and knowledge, lack of facilities, high costs, and shortage of time are of the most important problems and barriers for proper identifying and managing risk factors of CVD.

Strategies to improve and remove barriers and problems available in proper identifying and managing risk factors of CVD in triple levels (prevention, screening, proper treatment) from participants points of view have been provided in table 2.

As it is seen in table 2 generally in all triple levels increasing awareness of people, reducing the costs, increasing facilities, and removing social and economic problems of people are of the most important strategies to improve and remove barriers and problems available in proper identifying and managing risk factors of CVD from participant's points of view.

By summarizing mentioned barriers from points of view of participants of the study, it is possible to divide all of them in three general groups of personal barriers, socio-economic barriers, and health barriers. This categorization has been shown in figure 1.

Discussion

Based on the results of this study, barriers and problems of proper identifying and managing risk factors of CVD in triple levels (prevention, screening, and proper treatment) were divided into three general groups of personal barriers, socio-economic barriers, and barriers related to health medical services.

In personal barriers' field, low awareness of people about CVD and its symptoms was mentioned as one of the most important barriers and problems on

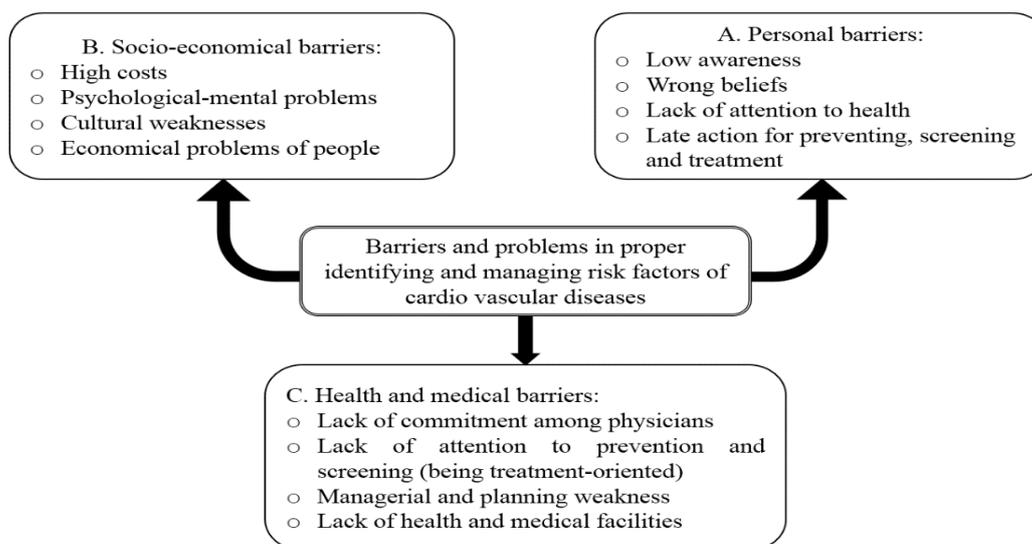proper preventing, screening and treatment of these diseases. Results of studies previously conducted in this field showed that low awareness of people is of the most important barriers of proper managing risk factors of CVD.[16,24-26]

Table 1. Barriers and problems of proper identifying and managing risk factors of CVD (cardiovascular diseases) in triple levels from participants' points of view (n = 60)

Participants	Triple levels	Solutions
Cardiology specialists (n = 4)	First level: prevention	Low awareness and information of people
		Socio-economic problems of people
		Lack of facilities
	Second level: screening	High costs
		Lack of facilities
		Lack of cooperation of people with health care providers
		Lack of time of physicians
	Third level: treatment	Lack of human resources and facilities
		Excess demand
		High costs
		Lack of cooperation of insurance companies
		Weak management of hospitals
Nurses (n = 23)	First level: prevention	Low awareness and information of people
		Socio-economic problems of people
		Lack of facilities
		Managerial weaknesses
		Lack of self-care skill among people
	Second level: screening	Shortage of studies and exact statistics
		Lack of attention to people's health
		Lack of appropriate culture of screening among people
		Shortage of needed human resources to conduct screening
		High costs of screening
		Lack of proper planning
		Low abilities and information of physicians and health care service providers
		Low motivations of health care service providers
		Nonconformity to instructions and standards from health care service providers
	Third level: treatment	Late referring of people for treatment
		Shortage in hospital beds
		Financial problems
		Physicians' non-alignment
		Physicians' low level of skills and abilities
Patients and accompaniers (n = 33)	First level: prevention	Ignorance of people
		Psychological and mental pressures
		Economic problems
		Lack of attention to health and disease prevention by people
		Lack of attention of authorities of health care centers
		Treatment-oriented nature of Iranian health system
		Giving weak and incomplete information to people
		Wrong beliefs of people
	Second level: screening	Living in deprived areas
		Shortage of physicians
		Lack of attention to problems of patients
		Lack of emphasize on screening issue by people and authorities
	Third level: treatment	High costs
		Lack of enough time
		Useless medical system
		Late referring for treatment
		Low information
		Imbalanced distribution of health and medical facilities among hospitals

Table 2. Solutions to improve and remove barriers and problems available in proper identifying and managing risk factors of cardiovascular diseases in triple levels from participants points of view (n = 60)

Participants	Triple levels	Solutions
Cardiology specialists (n = 4)	First level: prevention	Increasing awareness of people
		Providing proper facilities
	Second level: screening	Providing proper facilities
		Reducing costs
	Third level: treatment	Increasing the number of man power
		Improving management of hospitals
Nurses (n = 23)	First level: prevention	Increasing awareness of people by mass media like TV
		Decreasing psychological and mental problems of people
		Improving economic status of people
		Providing psychological consultation
		Planning for routine and regular check-ups
	Second level: screening	Developing research in this field and providing exact statistics
		Forming mobile screening centers
		Providing free screening services
	Third level: treatment	Reducing costs
		Participating patients in medical procedures
		Proper training of providers of health services
Patients and accompaniers (n = 33)	First level: Prevention	Informing people through mass media
		Developing Family physician program
		Enculturation prevention
		Reducing economic and social problems of people
	Second level: screening	Increasing the number of patients
		Conducting regular and free check ups
		Developing cooperation and improving relationships of physicians and people
		Making benefits from committed and interested physicians
	Third level: treatment	Reducing the costs
		Commitment of physicians
		Proper training on drugs and their side effects
		Increasing facilities
		Using proper indexes and standards

Figure 1. Barriers and problems of proper identifying and managing risk factors of CVD (cardiovascular diseases) in triple levels from participants' points of view

Therefore, effective planning and interfering seems necessary to increase awareness of people about CVD and proper ways of their prevention, screening, and treatment. As it was mentioned by most of the participants of this study, giving information through public media such as TV and Radio Organization and widely circulated newspapers could be of effective interferences and strategies. Besides information through public media, private information programs should be also considered in agenda. Since comprehension and knowledge level of all people is not same and maybe some of them would not be able to understand and analyze these messages and also some cardiovascular patients need informational requirements specific to themselves based on their special situations, which shows the importance of information and especial programs to increase awareness and information of specific groups. To do so it is possible to use pamphlets and educational CDs prepared in simple language proper for needs and ability level of specific groups. Furthermore, it is possible to make benefits of informed local people to train these persons.

Late referring for screening and proper treatment of CVD was also another personal barrier mentioned by participants. Review of references shows that delay in referring for treatment and screening have been observed among males and females with cardiovascular problems.[27] It seems that delay in referring for screening and effective treatment is a consequence of low awareness and information. Because it seems that in the case of being aware of benefits and results of on time referring, people will try to refer on time for screening and proper treatment. As some participants of this study mentioned to wrong beliefs as one of the barriers of proper prevention, screening, and treatment, it seems that another factor of late referring is the consequence of wrong beliefs. Therefore, to remove this problem, interfering in these two issues to increase awareness and correct wrong beliefs of people could have significant results.

Almost all participants of this study mentioned to financial problems or high costs of screening and treatment of CVD, which was classified in group of socio-economic problems. Study of Moise[7] aiming at investigating treatment, costs, and consequences of cardiac ischemic diseases in Organization for Economic Co-operation and Development (OECD) countries showed that generally costs of cardiac diseases are much more higher than that of other diseases. The main reason of these costs could be due to highly complex nature of cares and treatments of these studies. In this study, some of participants mentioned to lack of proper cooperation and insurance coverage. Therefore, according to the effect of high costs on prevention, screening, and proper treatment of CVD,[28] it seems inevitable to interfere and plan in order to reduce the costs or cover them. To do so proper development and insurance coverage, conducting econometric studies and economic evaluations to provide low-cost interventions and services, proper management of costs to reduce costs and loss of resources, assigning more resources for these diseases, cooperation with non-governmental organization (NGOs) and charities and other interventions could be considered.

From physicians' and some nurses' points of view shortage of time was a barrier stopping physicians and nurses, and in primary care providers of health services from proper involvement in prevention, screening, and proper treatment. Study of Ferrante et al.[29] in Argentina also showed that shortage of time of health service providers is one of the important barriers in preventing CVD. Results of other studies also mentioned to shortage of time as an important barrier in this field.[30-32] It seems that one of the reasons for shortage of time of health service providers to dedicate proper time to prevent and screen of patients is high demand for therapy services in hospitals which consumes a great deal of time of providers. The other reason for the shortage of time could be due to people's time management. In this case holding courses or

workshops for effective time management could have an effective role in resolving this problem.

Shortage of health care facilities is one of the barriers related to heath care systems mentioned by participants of this study. By facilities, we mean human resources, equipped center, proper tools, and other health care facilities. Studies conducted in this field also mentioned to the role of shortage of facilities as one of the main barriers of prevention, screening, and proper treatment of CVD.[11,16,30,33-35] Therefore dedicating more resources to this sector of health system seems a necessary issue. But considering the limitation of resources in the health sector, first it should be tried to increase efficiency and performance of available facilities using proper managerial methods.

Two interesting and important suggestions advised by patients and their accompaniers in this study were highlighting and developing the role of family physicians in prevention and screening programs of CVD and using performance indicators in hospitals. After reviewing literature we will notice that these two suggestions were successfully conducted in other countries and had significant results, in a way that in most of the countries of the world especial programs and activities are conducted in this field by family physicians.[36-39] Also, it is long time that using indicators are benefited to evaluate and improve the quality of provided services for cardiovascular patients in health care systems.[40-45]

Results of this study, like results of other qualitative studies have low generalizability to other environments and conditions.[46] Another weak point of this study was the lower participation of specialist physicians in this study.

Conclusion

Low awareness of people, high screening, and hospital costs, lack of health care facilities, socio-economic problems of people, and delay in referring to treat and screen are of the most important barriers and problems in proper identifying and managing risk factors of CVD. Increasing awareness of people through public media, reducing the costs, supporting family physicians, and using performance indicators to evaluate and develop the quality of provided services, are also of the most important strategies suggested by participants to improve and remove available problems in proper identifying and managing risk factors of CVD.

Conflict of Interests

Authors have no conflict of interest.

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