ORIGINAL ARTICLE

Designing a community participation management model to control the epidemic of heart coronary artery diseases for Tehran province

Vida Sadeghzadeh[1], Katayoun Jahangiri[2], Mahmood Mahmoodi Majdabadi Farahani[1], Mahmonir Mohammadi[3]

[1]Department of Health Services Administration, Science and Research Branch, Islamic Azad University, Tehran, Iran, [2]Department of Health in Disasters and Emergencies, School of Public Health and Safety, Shahid Beheshti University of Medical Sciences, Tehran, Iran, [3]Department of Cardiology, Faculty of Medicine, Tehran Medical Sciences, Islamic Azad University, Tehran, Iran

Background: Coronary artery disease (CAD) is the most important disease in the cardiovascular diseases and is the most important cause of death in developed and developing countries. Today, the participation of communities in government programs is considered as an important indicator of the success rate and development process of societies. This study was conducted with the aim of designing a community participation management model for control of CAD. **Materials and Methods:** This study was carried out practically, quantitatively, and qualitatively in seven steps. The sample consisted of 400 people. The instrument for measuring this research is a questionnaire of 35 questions that is gathered through referring to the centers and observing and interviewing and reviewing the findings of previous research. The data were analyzed using "exploratory and confirmatory factor analysis" and "Amos 24" and "SPSS 20" software. **Results:** A total of five factors have been identified as effective in managing people's participation in controlling the epidemic of CAD, including policy, planning, organizing, coordinating, and financing. Of these factors, policy-making and coordination have the most (0.96) and least (0.43) impact, respectively, on managing people's participation in controlling the epidemic of CADs. **Conclusion:** Results suggest that community-based CAD programs should be implemented and evaluated in accordance with clear rules and principles. All of the community should participate and establish close relationships with the national authorities.

Key words: Community participation, coronary artery disease, disease control and prevention

How to cite this article: Sadeghzadeh V, Jahangiri K, Farahani MM, Mohammadi M. Designing a community participation management model to control the epidemic of heart coronary artery diseases for Tehran province. J Res Med Sci 2019;24:98.

INTRODUCTION

Cardiovascular diseases are the most common cause of death, the most important cause of disability and half of deaths from cardiovascular disease are due to coronary artery atherosclerosis. Moreover, cardiovascular disease is the most preventable disease in humans.[1]

The World Health Organization has considered the solution to the global epidemic of coronary artery disease (CAD), a primary prevention based on comprehensive and inclusive populations, which the overall objectives of this initiative are to provide guidelines, infrastructures for the global caring of coronary heart disease risk factors, evidence-based decision-making, and monitoring interventions. These programs have been successful in developed industrialized countries, but no coherent and long-term plans for improving lifestyle in developing countries have been reported so far. In Iran, planning for the prevention and control of coronary heart disease has begun since the beginning of the 1990s in the management of disease control of the Ministry of Health and Medical Education.[2,3]

The point of view that has been raised in several countries in recent years to enhance the effectiveness of interventions is based on the participatory nature of interventions that have successfully implemented programs in identifying indigenous conditions,

Access this article online

Quick Response Code:

Website: www.jmsjournal.net

DOI: 10.4103/jrms.JRMS_555_18

Address for correspondence: Dr. Katayoun Jahangiri, Department of Health in Disasters and Emergencies, School of Public Health and Safety, Shahid Beheshti University of Medical Sciences, Tehran, Iran. E-mail: k.jahangiri@sbmu.ac.ir

Received: 01-09-2018; **Revised:** 21-05-2019; **Accepted:** 22-06-2019

extracting the best possible interventions by using the views of stakeholders, and implementing these interventions with use of the people themselves. Having a systematic look and protectionism is essential for the participatory approach to health promotion.[4]

Today, the participation of communities in government programs is considered as an important indicator of the success rate and development process of societies. Governments are trying to involve people in the planning and implementation, trying to familiarize the people with their plans, and get help from them.[5]

Participation is an active process in which different strata of people as well-informed and determined stakeholders are affected by the outcome of a health plan and reach individual, group, and collective growth.[6]

Community participation is a set of planning, organization, control, and coordination processes in which members of the community, individually or in groups, are responsible for identifying, assessing, and meeting their needs and proposing solutions and possible strategies try to meet the needs and solve the problems.[7,8]

Following important advances in the control of communicable diseases, in our country, good efforts have been made to control noncommunicable diseases, including CAD, from many years ago. However, despite many efforts, as in other countries, we have seen an ever-increasing trend for these diseases in our country. Therefore, it was necessary to make good efforts in this direction in line with our national and international commitments. For this reason, in order to control cardiovascular diseases, this study was conducted with the aim of designing a community participation management model for controlling the epidemic of CAD in Tehran Province.

MATERIALS AND METHODS

This study was carried out practically, quantitatively, and qualitatively in seven steps: 6.(1) At first a situation analysis of community participation management for control of CADs epidemic in Iran and the world was carried on. The output of this phase was to identify the existing models and dimensions as well as to compare their components of these models; (2) second phase was designing study tools (a researcher-made questionnaire was designed that it consisted of three main sections: first, demographic characteristics and information about underlying diseases and lifestyle indicators [smoking, alcohol consumption, hypertension, hyperlipidemia, and diabetes]). The second part included ten questions about people's views on the contribution of organizations in controlling the epidemic of CAD, people's participation, participation levels, their perspectives about effective factors in the prevention of cardiovascular diseases, responsible organizations and the role of community education in prevention, the importance of self-care and the necessity and ways to empower people in self-care. The third section included 35 questions about people's views on the health system policy, planning, organization, coordination and financing dimensions of controlling CAD]; (3) a quantitative study for data collection; (4) a qualitative study for completion of quantitative data (awareness of the experts' and executive authorities' opinions about the extracted components in previous phases); (5) summarizing data obtained from previous phases and designing a primary model; (6) doing exploratory factor analysis for model validation; and (7) confirmatory factor analysis to finalize the model. The aim of the research is to determine effective factors on community participation management in controlling the epidemic of CAD.

Study population

The population of the study was the population of Tehran Province in the first stage, and in the next stage, managers and experts of the center of community participation in epidemic control of CAD in Tehran. The sample consisted of 400 people that all gave their informed consent before inclusion and were calculated according to the formula:

$$n = \frac{Z_1^2 - \frac{\infty}{2} P(1-P)}{d^2} = \frac{4\,x\,0.1\,x\,0.95}{0.03^2} = 100$$

Inclusion criteria were individuals aged 18–70 years; reading and writing literacy; having the ability to participate in various educational, cultural, financial, managerial activities; and at least 1 year of residence in Tehran. In the next stage, a sample of 15 experts was composed of managers and experts from the Center for Public Participation in controlling the epidemic of CAD. Selection criteria for experts included at least 5 years of management experience in centers related to the Center for Public Participation in controlling the epidemic of CAD in Tehran Province and having a willingness to cooperate. The data collection tool in this research is a researcher-made questionnaire of 35 questions and interviews made by reviewing the literature and documentation available at the Ministry of Health and Medical Education and the Department of Cardiology of the Center for Disease Control.

Data

The information was collected through referrals to the centers for the provision of cardiac care, nongovernmental organizations, charities, and ordinary people in the province of Tehran, conducting observations and interviews and by

reviewing the findings of previous research. The results were sent to specialists and experts of the Center for Public Participation and CADs in two stages. Its continuum is between 1 and 5, 1 representing the minimum and 5 indicating the maximum acceptability of each indicator for the participants. The conceptual model for the present study is a combination of the World Health Organization models, the Korten model, and the Beukelman and Mirenda model in relation to the participation of people in the prevention and control of noncommunicable diseases. The reliability of the tool was calculated by Cronbach's alpha, with a credit value of 0.857. The validity of the tool was calculated by factor analysis, which has a relatively high load factor. To ensure the reliability of the questionnaire, at the pretest stage, 20 questionnaires were distributed among the statistical community of the study with previous coordination with the managers of the organizations. A total of 17 questionnaires were compiled for the implementation of the pretest. Three methods including face validity, content validity, and construct validity were used for measuring validity. To determine the face validity, two qualitative and quantitative methods were used. To determine content validity, two qualitative and quantitative methods were used. In the qualitative study, the researcher asked 15 specialists to check the quality of the questionnaire based on grammar observation criteria, use of proper words, necessity, importance, placing the phrases in their proper place, and appropriate scoring. To evaluate the content validity, content validity ratio and content validity index were used quantitatively. To evaluate the construct validity, factor analysis was used. Exploratory factor analysis using the Kaiser–Meyer–Olkin sampling test (KMO) and Bartlett's test (BT), the analysis of the main components and the varimax rotated have been used. Sampling adequacy index (KMO) for the variables and dimensions was >0.70 and showed that correlations between the data were suitable for factor analysis. After extracting the factors and phrases in each factor, the degree of consistency of these factors was examined with the concept and main dimensions of the concept of managing the participation of the people.

Limitations

The limitation in this study was the lack of access to the full text of some articles as well as some of the information banks. Furthermore, previous studies have been used to prevent the potential bias in data collection process.[9,10]

Statistical methods

To analyze the data, the "exploratory and confirmatory factor analysis" by "Amos 24" and "SPSS 20" was used. In the field study, the collected data were transferred through a questionnaire to SPSS 20 and analyzed using exploratory factor analysis of dimensions and components of the research pattern. Then, the components and dimensions were named.

RESULTS

Demographic and illness history

The results showed that the majority of samples were in the age range of 31–45 (33.5%), 71% were married, 37% had undergraduate degrees, 24% were nongovernmental workers, 50.5% had children 4–6, 14.5% of patients had a cardiovascular disease, 8% with diabetes, 14% with high cholesterol, and 4% with hypertension. 14.5% of the samples were taking drugs because of their disease, 0.5% had alcohol, and 12% had tobacco use.

Comparisons study

The results indicate that cardiovascular risk factors (smoking, alcohol abuse, hypertension, and obesity) in Iran and selected countries have similarities and differences that were shown in Table 1. The results showed that in policy-making, Iran and the selected countries have similarities and differences in terms of the management of the health system, type of the health system, the entity in charge of the health insurance system, health insurance type, and government role and general policy. In terms of the type of health system, countries are classified into three categories. Either they have fully governmental health systems, Countries such as Australia, Turkey, Japan, Sweden, and Canada have a fully governmental health systems. The United States of America has a private health system. Countries in the last category, such as Germany, Singapore, Finland, and South Korea have both private and public health systems. Iran is one of the countries in which the health system is based on a governmental-private sector. In the planning dimension, the results show similarities and differences in the program for monitoring CAD. Countries such as Australia, Germany, the United States, Sweden, and Canada have an organization responsible for CAD monitoring. Japan, Singapore, and Finland and the World Health Organization are jointly recognized as the responsible organizations for monitoring of CAD. Finally, the organization responsible for monitoring CAD in South Korea, Turkey, and Iran is the World Health Organization [Table 2]. The results also show that the structure and organization of most of the selected countries (Australia, Germany, the United States, Sweden, and Canada) were totally decentralized, that were used from contributions of organizations, institutions, nongovernmental, and popular associations in planning and control of epidemic of CAD. Japan, Singapore, Finland, and South Korea have a semi-centralized structure (public sector with private sector), while Turkey and Iran use centralized structures to combat CAD. According to the results of the study, most of the studied countries with minor differences in their short-term and long-term plans to combat CAD have prioritized coordination and collaboration between, within, and outside of the organizations, ministries, and institutions. Furthermore, the results, in terms of

Table 1: The comparative table of cardiovascular risk factors in adults in Iran and selected countries

Country	Risk factors											
	Smoking (%)			Alcohol abuse (%)			Hypertension (%)			Obesity (%)		
	Man	Woman	Total	Man	Woman	Total	Man	Woman	Total	Man	Woman	Total
Iran	26	>1	14	1.7	0.3	1.0	26.1	22.4	24.3	12.4	26.5	19.4
Australia	21	19	20	17.3	7.2	12.2	25.5	17.5	21.4	26.4	27.1	26.8
German	35	25	30	16.8	7.0	11.8	34.9	28.4	31.5	25.9	24.4	25.1
America	-	-	-	13.6	4.9	9.2	18.2	17.8	18.0	31.1	34.8	33.0
Turkey	42	13	27	4.4	0.5	2.0	21.2	22.8	22	21.7	34.0	27.8
Japan	34	11	22	10.4	4.2	7.2	30.5	23.2	26.7	5.8	4.4	5.0
Singapore	-	-	-	2.8	1.2	2.0	25.0	20.1	22.6	7.0	7.1	7.1
Sweden	25	24	24	12.9	5.5	9.2	34.9	26.8	30.8	19.9	17.3	18.6
Finland	27	20	24	17.5	7.3	12.3	38.9	30.3	34.5	23.3	22.8	23.0
Canada	20	15	18	15.1	5.5	10.2	18.8	16.2	17.4	26	26.4	26.2
South Korea	49	8	28	21.0	3.9	12.3	17.8	14.3	16.0	7.2	8.3	7.7

Table 2: The comparative table of Iran and selected countries in term of policy and planning factors

Countries	Factor	
	Policies	Planning
Iran	The huge share of funds outside government control and in direct contact with buyers and providers, the transfer of public health to the private sector	International Classification of Cardiovascular diseases: ICD-10 Corresponding Organization: WHO
Australia	Formulating social policies and providing support when needed by people, helping society by promoting strong community participation, providing social support systems with prospective vision, providing basic social and social policies	International Classification of Cardiovascular diseases: ICD-10 AM Corresponding Organization: NCCH
Germany	The Law on the prevention of risk factors for CAD, the provision of advice related to risk factors by insurance companies, the extension and implementation of the ban on tobacco use	International Classification of Cardiovascular diseases: ICD-10 GM Corresponding Organization: DIMDI
United States of America	Health and welfare services and income generation programs, the lowest level of government participation in health-care payments, the highest levels of participation through private insurance, the high profile of the private sector in the United States in the form of private insurance, maintenance, and health promotion	International Classification of Cardiovascular diseases: ICD-10-Cm Corresponding Organization: NCHS
Turkey	Regulatory system, Overall Health Policies, Extreme Bureaucracy and Decisions in the Ministry, General Health Analysis, by Senior Advisers of the Ministry of Health	International Classification of Cardiovascular diseases: ICD-10 CM Diagnosis Code W6143XD Corresponding Organization: WHO
Japan	Social health system, community-based prevention program, community-based screening of CAD	International Classification of Cardiovascular diseases: ICD-10-CM Corresponding Organization: Health and Welfare Ministry
Singapore	Planning, development, and continuation of the national health care system, regulation of public and private insurance, Healthy community development program through prevention and promotion programs for health	International Classification of Cardiovascular diseases: ICD-10 Corresponding Organization: WHO and Health Ministry
Sweden	Legislation, policy, financing, and care for the elderly and the elderly at the national and regional levels	International Classification of Cardiovascular diseases: ICD-10-SM Corresponding Organization: NBHW
Finland	Management, provision, and implementation of social welfare policies and health care, gender equality policies, occupational safety and health policies, setting up care units, partnerships and health	International Classification of Cardiovascular diseases: ICD-10-FIC Corresponding Organization: WHO-FIC
Canada	Policy planning and planning of the health sector, donations to the provinces, improving the health and treatment of the community and controlling medical expenses, the National Health Plan, improving health, and reducing health gap	International Classification of Cardiovascular diseases: ICD-10 CA Corresponding Organization: CIHI
South Korea	Policy mechanism, government policies to improve the level of national health care, promote national participation in the health industry	International Classification of Cardiovascular diseases: ICD-10 – KM Corresponding Organization: WHO

WHO=World health organization; CAD=Coronary artery disease

financing (type of financing system, participation rate, characteristics of the financing system, and its advantages and disadvantages) showed differences and similarities [Table 3].

Exploratory factor analysis

The exploratory factor analysis was performed using the principal components method on 35 phrases. The value of

Table 3: The comparative table of Iran and selected countries in terms of organization, coordination, and financing factors

Countries	Factors		
	Organization	Coordination	Financing
Iran	Centrealized	Predict actions for strengthening multisectoral collaborations	Mixed (multiple financing)
Australia	Decentrealized	Multisectoral coordination of the Ministry of Family, Social and Indigenous Affairs, Family Support Center, Community Assistance Center	Mixed (basic and social policy system)
Germany	Decentrealized	Multisectoral cooperation at the Finance Ministry of Federal, Federal Health Ministry, Provincial and Local Authorities	Mixed (mostly governmental, a little private)
United States of America	Decentrealized	Coordination between the National Institutes of Health, Office of Control and Prevention of Diseases, Department of CAD	Compilation system (private and free)
Turkey	Centrealized	Types of service providers (municipal, city council .), ministries of health, universities, ministries of defense, doctors, dentists and pharmacists, government, parliament, and decision-makers convergence	Mixed (public, private, and OOP)
Japan	Centrealized	Multisectoral coordination at the Health and Welfare Ministry, General Health Policy Center for the Elderly, coordination between the three executive, judicial and legislative branches	Mixed (private and social insurance)
Singapore	Semi-centrealized	Cooperation between the public and the private sector, the Ministry of Commerce and the Economic Development Board of Industry and Health Ministry, the support of insurance companies from health tourists	Mixed (public and private)
Sweden	Decentrealized	Coordination between the Health Care Organization, the Public Health Organization, the Social Insurance Agency, the Minister of Social Welfare, the Minister of Public Health and Social Services	National Health (state and local taxes)
Finland	Semi-centrealized	Coordination between the three parts of the urban health care, collaboration with regional, transregional, and international treaties	Mixed (Tax and Private Insurance)
Canada	Decentrealized	Collaboration between government organs, medical staff, universities, provincial, and local authorities	National Health (governmental and nonprofit)
South Korea	Semi-centrealized	Multisectoral cooperation with the Ministry of Health and Welfare. Includes: Public Utilities, Office of Health Coordination Policy, Welfare Policy Policies	Mixed (government and private market)

CAD=Coronary artery disease

KMO was 0.785. Furthermore, the BT with a mean of 12.275 at the level of 0.30 was significant, which justified factor analysis based on the correlation matrix in the sample.

Extraction factors

To extract the factors in this research, the method of distribution of the main components and to determine the number of factors, the special value method was used. The results showed that the highest percentage of total variance (68.42%) was explained by the first nine factors and the remaining percentage of total variance (31.548%) was determined by the remaining 26 factors [Table 4]. Results show the special initial values and special values before and after the period of the factors. The number of special values is also given in the scree plot [Figure 1].

Factors and indicators

The minimum factor load accepted in this study was 0.4 [Table 4]. Based on the analysis, the five factors are named as follows: (1) policy-making consists of 7 indicators; (2) planning includes 11 indicators; (3) financing has 5 indicators; (4) organization consists of 5 indicators; and (5) coordination consists of 7 indicators.

The estimate results indicate the relative suitability of the indices. The low level of this indicator indicates a slight difference between the conceptual model and the observed data of the research. The results of the estimation indicate the relative suitability of the indices. Model Fix Indexes are presented in Table 5 which indicate a high fit. The results of factor loads and *t* values of some of the indicators are presented in Table 6. Finally, factors of the final model in standard estimation are shown in Figure 2.

DISCUSSION

Successful management of noncommunicable diseases with an emphasis on cardiovascular diseases through community participation programs in Estonia, Hungary, Republic of Moldova, Turkey, Belarus, Macedonia, Tajikistan, and Croatia through the control of risk factors for cardiovascular disease has been achieved.[11-16]

Based on the results of this study, managing and attracting public participation in five areas of policy, planning, organization, coordination, and financing can have a

Table 4: Rotated component matrix

	Component								
	1	2	3	4	5	6	7	8	9
q11	−0.200	0.092	−0.067	−0.734	−0.133	−0.186	−0.191	0.421	0.199
q12	0.132	0.122	0.148	0.859	0.136	0.083	−0.074	−0.066	−0.014
q13	0.166	0.047	0.184	0.877	0.112	0.100	0.035	−0.006	−0.027
q14	0.138	0.098	0.069	0.017	0.887	0.004	0.059	−0.041	0.120
q15	−0.181	−0.202	0.003	−0.116	0.560	−0.108	−0.288	−0.155	0.067
q16	0.070	0.145	0.035	0.157	0.721	0.060	−0.008	−0.050	0.179
q17	0.204	0.167	0.080	0.171	0.685	−0.074	0.220	−0.085	0.169
q18	−0.591	−0.013	−0.165	0.073	−0.110	−0.135	0.059	−0.179	−0.076
q19	0.658	0.186	0.093	0.273	0.060	0.095	0.073	0.011	0.251
q20	0.822	0.094	0.146	0.190	0.165	0.153	0.111	−0.014	0.054
q21	0.127	0.797	0.239	0.088	−0.070	0.146	0.165	−0.101	0.038
q22	0.103	0.703	0.124	0.095	0.122	0.290	0.159	−0.169	−0.017
q23	0.202	0.883	0.369	−0.142	0.128	−0.100	0.159	0.070	−0.246
q24	0.281	0.608	0.208	−0.065	0.216	−0.201	0.142	0.158	−0.231
q25	0.242	0.016	0.157	0.050	0.076	0.692	0.226	−0.076	0.047
q26	0.120	0.126	0.194	0.107	0.064	0.760	0.093	0.052	0.201
q27	0.184	0.035	0.229	0.123	0.279	0.597	0.302	−0.022	−0.015
q28	0.062	−0.082	−0.055	−0.026	−0.085	0.751	0.007	0.051	0.039
q29	0.086	0.131	0.806	0.195	−0.041	0.183	0.104	−0.189	0.185
q30	0.158	0.069	0.832	0.199	0.066	0.252	0.089	−0.088	0.149
q31	0.161	0.067	0.856	0.200	0.040	0.254	0.097	−0.088	0.141
q32	0.120	0.077	0.822	−0.060	0.070	0.211	0.174	−0.084	−0.010
q33	0.252	0.131	0.792	0.035	0.146	0.175	0.118	−0.057	−0.043
q34	0.205	0.148	0.080	0.123	0.182	−0.116	0.805	−0.188	0.098
q35	0.069	0.102	0.131	0.215	0.222	−0.135	0.760	−0.291	0.028
q36	0.090	0.054	0.085	0.112	0.132	0.064	0.942	−0.085	0.068
q37	0.121	−0.088	0.090	0.102	0.096	0.045	0.953	−0.087	0.062
q38	0.137	0.015	0.063	0.091	0.086	0.063	0.013	0.954	0.074
q39	−0.044	−0.072	0.082	0.148	−0.124	0.020	0.151	−0.640	−0.080
q40	0.128	0.178	0.035	0.221	0.059	0.152	0.115	−0.787	0.260
q41	0.077	0.264	0.050	0.147	0.012	0.168	0.029	−0.069	0.720
q42	0.110	0.042	0.181	0.115	0.036	0.071	−0.037	−0.007	0.785
q43	−0.187	−0.073	0.008	−0.086	0.193	−0.067	−0.069	0.268	0.576
q44	0.251	0.220	0.037	0.025	0.098	0.145	0.031	0.032	0.546
q45	0.156	0.103	−0.040	−0.107	0.475	0.088	−0.201	−0.213	−0.772

Table 5: Model fit indices

Fit index	Acceptable range	Result
χ^2/df	<3/00	2/45
GFI	>0/90	0/908
RMSE	<0/8	0/78
RMR	<0/5	0/42
NFI	>0/90	0/906
CFI	>0/90	0/912

GFI: Goodness of fit index, RMSE: Root mean squared error, RMR: Root mean squared residuals, NFI: Normed fit index, CFI: Comparative fit index

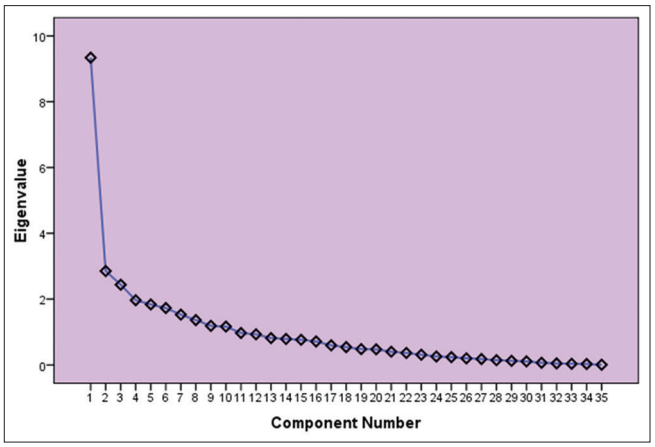

Figure 1: Scree plot to determine the number of factors

significant impact on the control of CAD. The role of people in policy-making can be measured through indicators such as rules, regulation, and decision-making in the field of management. Creating a coherent policy framework, including legislation, regulations, and public education, is crucial for the prevention and control of cardiovascular disease since in the absence of a conductive environmental change, it is very difficult to make changes in individual behavior. The gap between the need for prevention and

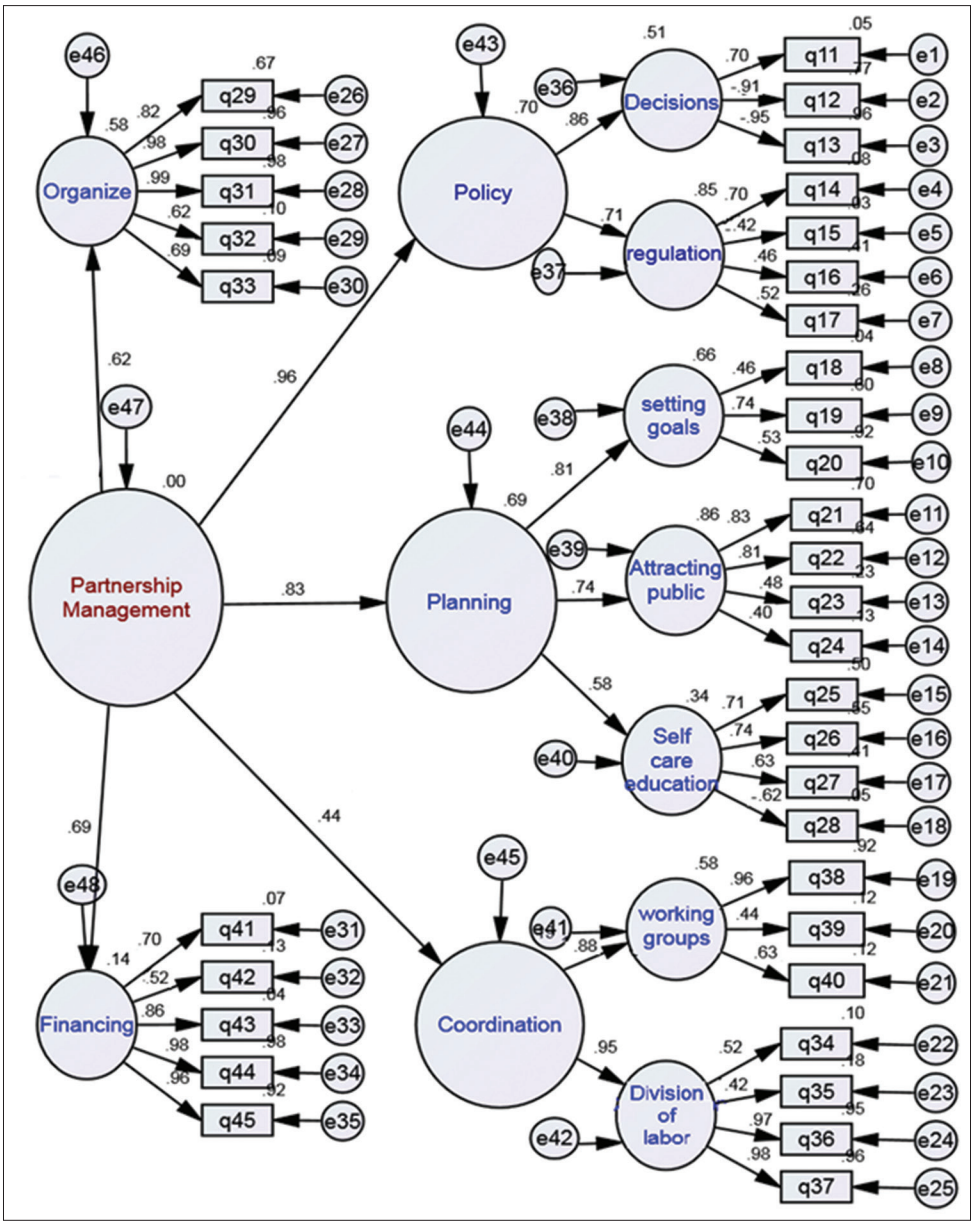

Figure 2: Components of final model. First factor = Policy; Second factor = Planning; Third factor = Financing; Forth factor = Organization; Fifth factor = Coordination

Table 6: Factors and *t*-test

	Estimate	*T*-test	Status
Coordination <public participation_management	0.437	3.562	Confirmed
Policy <public participation_management	0.936	5.021	Confirmed
Planning <public participation_management	0.831	5.084	Confirmed
Financing <public participation_management	0.692	3.052	Confirmed
Organization <public participation_management	0.602	3.741	Confirmed

control of cardiovascular disease, and the capacity to meet them is increasing day by day, unless urgent steps are taken.[17,18]

Mustapha *et al*. in a study concluded that through national strategic interventions, some of the key challenges associated with noncommunicable diseases can be controlled and managed (including coronary arteries).[19] Also in Canada since 2002, the "National Healthy Living Program" has begun. This program follows the following strategies: (1) leadership and policy development, (2) development and transfer of knowledge, (3) development of society and substructures, and (4) public information society.[20]

In this research, in the planning dimension, indicators such as setting goals and fixing priorities, strategies for attracting public participation, and self-care education through empowerment of individuals (increasing knowledge and awareness, enhancing skills and abilities, and changing

attitudes and beliefs) were very important. The importance of participation in empowerment is so much that it can be said that if society reaches a degree of development and consciousness that participation in different dimensions of that society becomes visible, then that society will be able to achieve the potential of growth and excellence in the light of such participation.[21]

Crucial community-based programs are an important part of the strategy for solving this global dilemma. There is a huge gap between the current knowledge and information about what is needed to be done and the daily routine of most people in developing countries which has been caused by various cultural, political, psychological, and economic that prevent safe and proper changes. Therefore, the purpose of community-based programs is to build a bridge to help individuals and communities overcome these obstacles.[22]

In Australia, public awareness campaigns, for the prevention or reduction of risk factors, target audiences who can be influenced. The purpose of these programs is to change the knowledge, attitude, and beliefs of particular population groups and to help local communities to support change in behavior.[23]

Based on the results of this research, it can be noted in the organization dimension that an important indicator, such as assignment of tasks and resources, involves the organization of activities of individuals and groups. Jahangiri and Pourheidari state that the only real entry into the age of participation is through strategies based on the belief that human systems can be organized in their nature.[11]

It can be concluded that given the limited resources of noncommunicable disease management in developing countries, prioritizing and deciding on the type of interventions and population-based preventive strategies are important, and the success depends on access to indigenous information and evidence and common risk factors for these diseases, which is not possible without the establishment of a "risk management system for noncommunicable diseases."[24]

Based on the results of the research, in the coordination dimension, it can be noted that the division of labor (agreed and preplanned activities), inter/intra/external collaboration (coordination of working groups), and different researches all derive the same conclusion. In this regard, Kasper *et al*. argue that countering the epidemic of CAD and its risk factors requires extensive, effective, and active interventions of all relevant organizations and ministries within and outside the health sector.[25] The World Health Organization and governments alone cannot cope with this challenge, but it is necessary to engage with national and international consumer groups and multinationals and NGOs.[3] Damari *et al*. in their study assessed the role and function of NGOs in maintaining and promoting community health in designing the pattern of interaction between nongovernmental organizations and the health sector in the government, while also highlighting the capabilities of the SAMANs. Educational and counseling services also warn the public sector decision-makers (the government) that the lack of use of hidden capacities of these systems slows down the development process of the country.[26]

Another important dimension in managing and engaging community participation in controlling the epidemic of CAD is financing which is actually manageable financial resources and popular donations, charities, community organizations (SAMANs), NGOs, and government funding.

The community-based approach to addressing CAD is considered to be one of the cost-effective methods. Community-based strategies include financial and administrative support for health, social mobilization, education and community health promotion, and the use of community health centers in identification, diagnosis, treatment, and management of patients.[27] Development and implementation of CAD management programs is time-consuming and challenging. Multidisciplinary patient-centered care requires many changes in common management. The more complex the care paths, the higher the costs. Better preparation and training can prevent unnecessary delays at run time and are very necessary to reduce costs.[28]

The methods of prevention and control of CAD are very complex and the role of the health system in their control is very limited. A participatory look, based on strong scientific documentation on the one hand, and efforts to integrate information and design long-term plans, on the other hand, should form the core of CAD management and be tried through a variety of legal instruments and diverse executive channels in different organizations and ministries to moderate the course of life with the direct participation of people.

CONCLUSION

Considering the demographic, economic, and social characteristics of the Iranian Society, managing coronary heart disease programs, based on the mobilization of resources and long-term training strategies in the community, it is considered essential to the need for accurate planning using the approach. The community focuses on five areas of policy, planning, organization, coordination, and financing. Hence, we conclude that

community potentials can be used to control the epidemic of CAD and reduce their risk factors, helping raise the health of people at risk.

Implications for practice

Most cardiovascular diseases can be prevented by changing lifestyle and adopting healthy behaviors.

People with cardiovascular disease or those at high risk for the disease need urgent diagnosis and control through medication counseling and treatment.

There are several strategies to prevent cardiovascular disease, one of which is community-based strategy.

Acknowledgments

This article is under review from Vida Sadeghzadeh, PhD candidate of Health Services, Management of Science and Research Branch, Islamic Azad University's PhD thesis, which has been carried out with the precise and valuable guidance of my great Professor Dr. Jahangiri. The researcher would also like to thank the managers and experts of the Ministry of Health and Medical Education in the field of cardiovascular diseases and public participation for their helpful and worthwhile comments and help, and Amiralmomenin Charity Hospital as well as the study sample. This study was approved by the Iran Committee for Biological Ethics and Biomedical Research at the Islamic Azad University Medical on November 7, 2017, No. 29847.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Engeseth K, Hodnesdal C, Grundvold I, Liestøl K, Gjesdal K, Erikssen G, *et al*. Heart rate reserve predicts cardiovascular death among physically unfit but otherwise healthy middle-aged men: A 35-year follow-up study. Eur J Prev Cardiol 2016;23:59-66.
2. Black JM, Matassarin-Jacobs E, Luckmann J. Medical-surgical nursing: Clinical management for continuity of care. Saunders University of Nebraska, Omaha, USA; 1997.
3. Yavari P. The Epidemiological Reference of Common Diseases in Iran (non-Communicable Diseases). Rasht: Shahid Beheshti University of Medical Sciences; 2014. p. 45-72.
4. Center of Health Policy Research; 2014. Available from: http://health-policy.sums.ac.ir/fa/research_group/non/cvu.html. [Last accessed on 2011 Jul 02].
5. The Ministry of Health and Medical Education Department of Health. Public Participation Development Program and Inter-Institutional Coordination in the form of "Specialist Volunteers", Country recipients of Specialist Volunteers. Iran, Tehran; 2013.
6. Abdoli A. Community Participation. Charity of Salehon Bidgol: Iran's Welfare Organization; 2011.
7. Jahangiri K, Pourheidari G. Principles of Crisis Management. 2nd ed. Tehran: Helal Ahmar; 2011.
8. Control INCfNPa. National Action Plan for Prevention and Control of Non-Communicable Diseases and the Related Risk Factors in the Islamic Republic of Iran. Tehran; 2015. p. 2015-25.
9. Moradzadeh R, Mansournia MA, Baghfalaki T, Nadrian H, Gustafson P, McCandless LC. The impact of maternal smoking during pregnancy on childhood asthma: Adjusted for exposure misclassification; results from the national health and nutrition examination survey, 2011-2012. Ann Epidemiol 2018;28:697-703.
10. Moradzadeh R, Mansournia MA, Ghiasvand R, Baghfalaki T, Nadrian H, Holakouie-Naieni K. Impact of age at menarche on breast cancer: The assessment of recall bias. Arch Iran Med 2019;22:65-70.
11. Tello J, Satylganova A, Stachenko S, Jurgutis A, Mulholland D, Habicht T. Better noncommunicable disease outcomes: Challenges and opportunities for health systems. Croatia country assessment: focus on cardiovascular diseases and diabetes. World Health Organization Regional Office for Europe. Paris, France, 2015. http://www.euro.who.int/pubrequest.
12. Akkazieva B, Tello J, Smith B, Jakab M, Krasovsky K, Sautenkova N, *et al*. Better noncommunicable disease outcomes: challenges and opportunities for health systems. TAJIKISTAN country assessment. World Health Organization Regional Office for Europe. Copenhagen, Denmark. 2016. https://apps.who.int/iris/handle/10665/153907.
13. Voko Z, Beran D, Pusztai Z. Better non-Communicable Diseases Outcomes: Challenges and Opportunities for Health Systems. Country Assessment. Hungary: World Health Organization, Regional Office for Europe; 2015.
14. Telai T, Stachenko S, Kostova N. Better non-Communicable Diseases Outcomes: Challenges and Opportunities for Health Systems. Country Assessment. Macedonia: World Health Organization, Regional Office for Europe; 2015.
15. Skarphedinsdottir M, Mantingh F, Jurgutis A. Better non-Communicable Diseases Outcomes: Challenges and Opportunities for Health Systems. Country Assessment. Belarus: World Health Organization, Regional Office for Europe; 2015.
16. Farrington J, Korotkova A, Stachenko S. Better Non-Communicable Diseases Outcomes: Challenges and Opportunities for Health Systems. Country Assessment. Armenia: World Health Organization, Regional Office for Europe; 2015.
17. Sadeghzadeh V, Jahangiri K, Mahmoodi M, Mohammadi M. A comparative study of the status of control on the epidemic of heart coronary artery diseases in selected countries and Iran. J Health Promot Manage 2018;7:17-25
18. Sarink D, Nedkoff L, Briffa T, Shaw JE, Magliano DJ, Stevenson C, *et al*. Projected age- and sex-specific prevalence of cardiovascular diseases in Western Australian adults from 2005-2045. Eur J Prev Cardiol 2016;23:23-32.
19. Mustapha F, Omar Z, Mihat O, Md Noh K, Hassan N, Abu Bakar R, *et al*. Addressing non-communicable diseases in Malaysia: An integrative process of systems and community. BMC Public Health 2014;14 Suppl 2:S4.
20. Department HKH. Global Perspective on Non-communicable Disease Prevention and Control; 2010. Available from: http://www.dh.gov.hk/english/pub_rec/pub_rec_ar/pdf/…/chap_3.pdf/. [Last accessed on 2016 Jul 02].
21. Zahediasl M, Basatian S. Problems of poverty in Iran. Allameh Tabatabaee University Publication. Welf Planning Soc Dev 2012;2:1-26.
22. Karimi S, Javadi M, Jafarzadeh F. Economic burden and costs of chronic diseases in Iran and the world. Director Gen 2012;8:996.

23. Health. AGDo. 3 population-level prevention initiatives and interventions, prevention of cardiovascular disease, diabetes and chronic kidney disease 2011; 21: 49-77.
24. Jones CA, Nanji A, Mawani S, Davachi S, Ross L, Vollman A, *et al*. Feasibility of community-based screening for cardiovascular disease risk in an ethnic community: The South Asian cardiovascular health assessment and management program (SA-CHAMP). BMC Public Health 2013;13:160.
25. Kasper D, Fauci A, Hauser S, Longo D, Jameson J, Loscalzo J. Harrison's principles of internal medicine, 19e. New York, NY: McGraw-Hill Center; 2015.
26. Damari B, Heidarnia MA, Rahbari BM. Role and performance of Iranian NGOS in community health promotion. PAYESH. 2014; 13: 541-550.
27. Xiao N, Long Q, Tang X, Tang S. A community-based approach to non-communicable chronic disease management within a context of advancing universal health coverage in China: Progress and challenges. BMC Public Health 2014;14 Suppl 2:S2.
28. Cramm JM, Tsiachristas A, Walters BH, Adams SA, Bal R, Huijsman R, *et al.* The management of cardiovascular disease in the Netherlands: Analysis of different programmes. Int J Integr Care 2013;13:e028.