

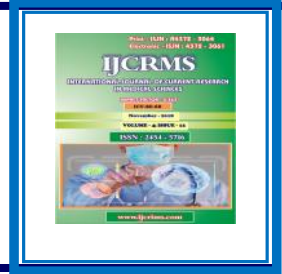


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Knowledge and attitude toward risk factors of cardiovascular disease in Iranian population: A systematic review

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Abstract

Introduction: According to the high prevalence of cardiovascular diseases (CVDs) in developing countries as well as high treatment expenses for patients and health-care systems, CVDs prevention in such societies has a great importance. One of the most effective strategies is improvement of knowledge and attitude towards the CVDs risk factors. This study aimed to evaluate the knowledge and attitude toward risk factors of cardiovascular disease in Iranian population.

Methods: The methods used for this systematic review were based on the "Cochrane Systematic Study Booklet" and "Appropriate Items for Systematic and Meta-Analysis Study (PRISMA)" tool. Observational studies conducted on general population have been added and studies conducted on specific population have been removed. Results are summarized as reported in the research. The minimum sample size was 25 patients in each study. To find references, the international Databases (MEDLINE PubMed interface), Google Scholar, and Web of Science) and domestic databases (SIDs and Magiran) and journals were searched; unlimited searching, in terms of both setting and language, was done until June 30, 2018.

Results: In the initial search on various databases, a total of 630 articles were reviewed, 602 of which turned out to be repetitive during screening process of title and abstract. 16 articles were removed due to unrelated title; out of the remaining 12 articles, 7 articles met the inclusion criteria. The final research was conducted on 5167 participants. The positive attitudes about risk factors for coronary artery disease was moderate. Most participants in the present study had a low to moderate knowledge about risk factors of cardiovascular disease.

Conclusion: Based on the results of this research that show lack of proper and sufficient knowledge in a part of Iranian subjects, it is recommended to conduct a national research to determine the attitude better, as well as establish educational centers in the country to inform people about ways to prevent cardiovascular disease.

Keywords: knowledge, attitude, cardiovascular disease, risk factors, Iran

Introduction

Cardiovascular disease (CVD) are progressive diseases that can begin during childhood and reveal their clinical symptoms mainly from the middle of an individual's life(1-3). Types of cardiovascular disease include a wide range of coronary artery disease, including reversible myocardial damage, stable or unstable angina, or chest pain, acute myocardial infarction, stroke, heart failure, peripheral vascular disease, rheumatic fever, and rheumatic heart disease(4). Cardiovascular disease is a pandemic that bothers the majority of countries in the world(5). Although many cardiovascular diseases can be cured, they are still the most important cause of death worldwide (6). With the advent of modern technology in all aspects of human life and changing the patterns of life and behavior of people, the context for many chronic diseases including cardiovascular diseases, is provided(7). Despite significant advances in the prevention and treatment of cardiovascular diseases, these diseases are still the leading causes of mortality in men and women in the world (8). The causes of this increase can be due to different signs and symptoms(9). The occurrence of heart attacks, which often leads to a late diagnosis or delay in referral to treatment centers and sudden death after stroke, is more common in women than in men(10). The mortality rate of cardiovascular disease is higher in developing countries than developed ones; thus, preventing non-communicable diseases such as cardiovascular disease is one of the health priorities of developing countries(11). Hypertension has a direct effect on cardiovascular diseases. High blood pressure can damage the vasculature of the endothelium and lead to disease by increasing the accumulation of the plaque(12). Controlling blood pressure is considered as a primary and secondary prevention(13-15). Nowadays, the main effort is to prevent rather than treat cardiovascular disease through primary and secondary prevention by integrating and combining national efforts and effective, cheap and simple individual actions(14). Attempts have reduced more than 50% of deaths and disabilities from diseases(16). Community should receive proper education and training in order to control these factors in order

to enhance the level of knowledge and awareness of the people about each of the factors (17 and 18). The present systematic and meta-analytic study was conducted to identify people's attitudes towards and knowledge about risk factors for coronary artery disease in Iran.

Methods

Eligibility criteria

The methods used for this systematic review were based on the "Cochrane Systematic Study Booklet" and "Appropriate Items for Systematic and Meta-Analysis Study (PRISMA)" tool. Observational studies conducted on general population have been added and studies conducted on specific population have been removed. Results are summarized as reported in the research. The minimum sample size was 25 patients in each study. The target population covers the total Iranian population who entered the study. Knowledge and attitude toward risk factors of cardiovascular disease in Iranian population was calculated in this study.

Searching strategies and databases

The review of references and resources was done using the Medical Subject Headings (MeSH) and keywords related to the source of information on Knowledge and attitude toward risk factors of cardiovascular disease in Iranian population. To find references, the international Databases (MEDLINE PubMed interface), Google Scholar, and Web of Science) and domestic databases (SIDs and Magiran) and journals were searched; unlimited searching, in terms of both setting and language, was done until June 30, 2018. PRESS standard and the Health Sciences Librarian were used for designing the strategy.

MEDLINE application was used to search other databases. In addition, PROSPERO was used to provide a systematic search that was completed recently. To search for headlines and abstracts, boolean (AND, OR, NOT), mesh, coordinate {truncation} * and related words were used; following keywords were used to provide a comprehensive context: knowledge; attitude; cardiovascular disease; CVD; risk factors; Iran .

Research selection and data extraction

According to the research protocol, two researchers observed the titles and abstracts separately according to the eligibility criteria; in the next step, after the removal of repeated studies, the full text of the paper was studied based on the eligibility criteria and the required information was extracted. Consensus method was used to solve the disagreements between two researchers. The extracted data included the general information (corresponding author, year and place), characteristics of the research (research design, sample size, location, study period, and risk of bias), and characteristics of participants.

Quality control


To assess the quality of the methodology and bias risk, each observation study was evaluated using a tool developed by Hoy et al; this 10-item scale evaluated the quality of the study in two dimensions, including external credentials (items 1 to 4 target populations, sampling frame,

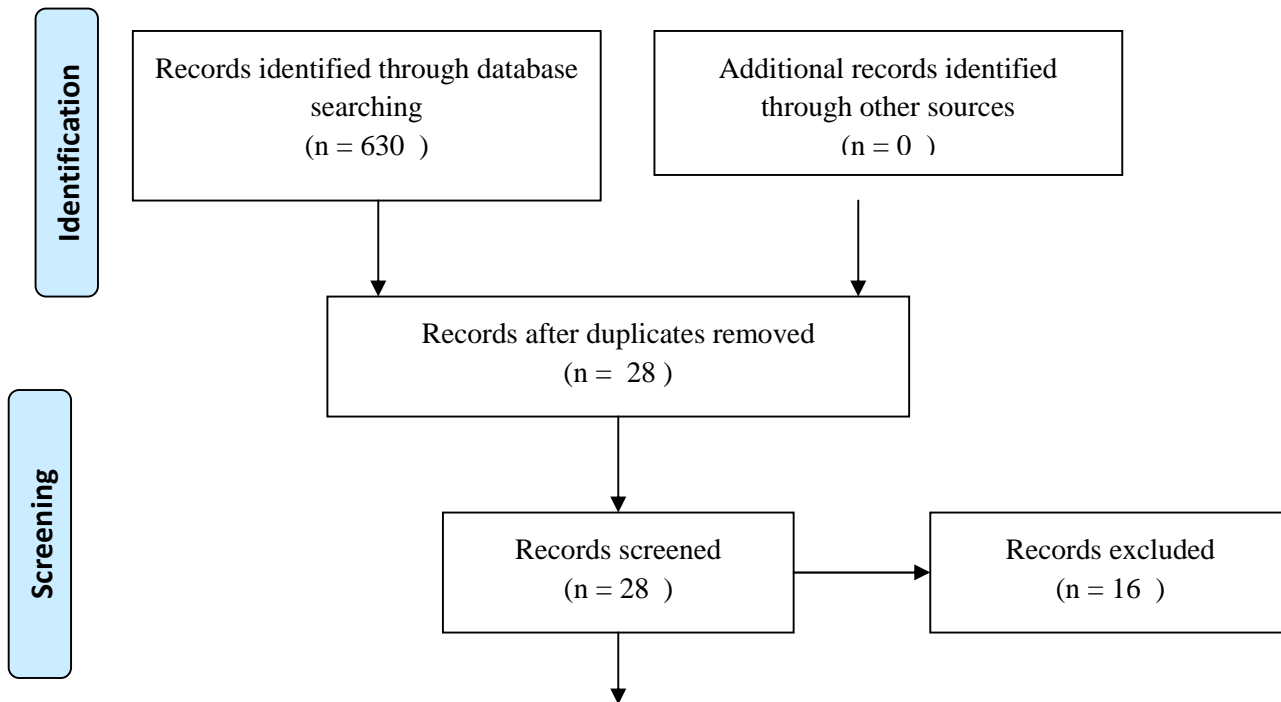
sampling method, and minimum indirect neglect) and internal validity (items 5 up to 9 covering methods for data collection, case definition, study tools, and data collection mode and item 10 covering assessing relevant assumptions or analyzes). The risk of abuse was assessed by two researchers separately and possible disparity of ideas was resolved by consensus.

Results

1. Selecting eligible papers and researches

In the initial search on various databases, a total of 630 articles were reviewed, 602 of which turned out to be repetitive during screening process of title and abstract. 16 articles were removed due to unrelated title; out of the remaining 12 articles, 7 articles met the inclusion criteria. Of the 5articles that were removed, 2 were reviews, 1was letter to editor, 1 had no complete text, and 1 had low quality and could not be considered in the research. (Figure 1)

 PRISMA 2009 Flow Diagram



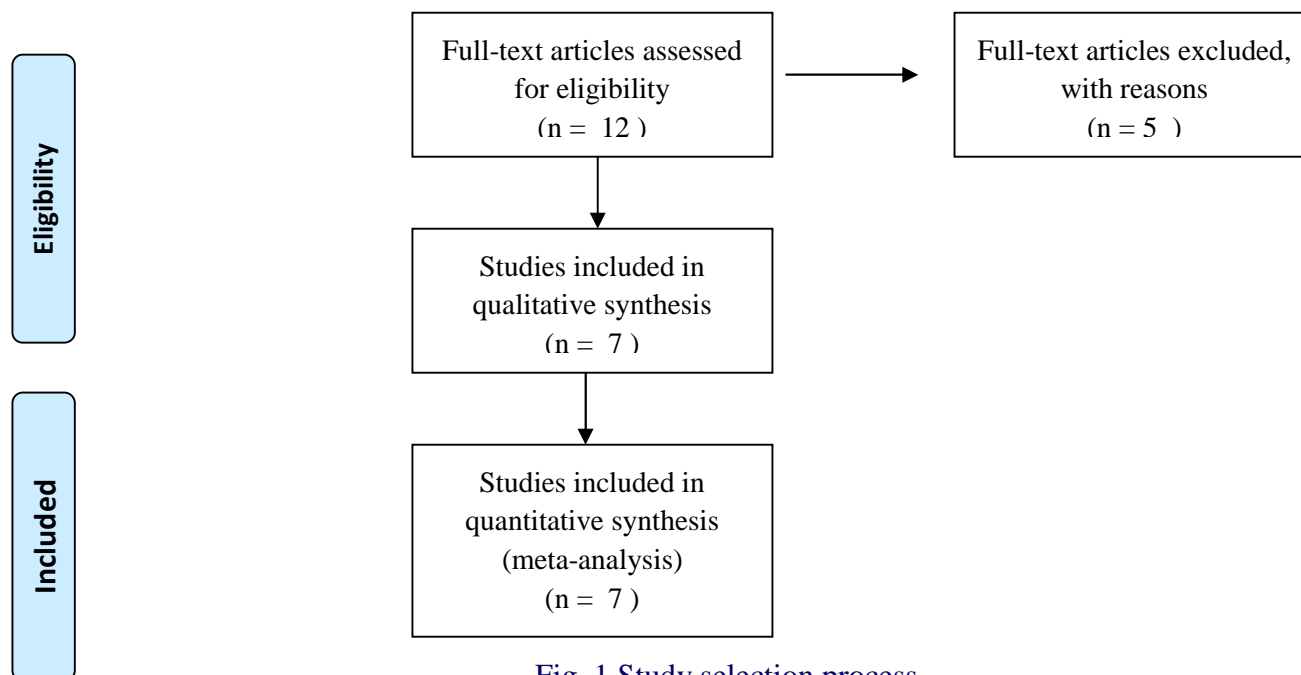


Fig. 1 Study selection process

2. Characteristics of the researches and papers

The final research was conducted on 5167 participants; with an age range of 11 to 85 years old; a cross-sectional design was used in all studies. Research was conducted in only 6 provinces out of 31 provinces of Iran. Of the 7

studies, Two were from Tehran , one from Yazd , One from Ardebil ,one from Isfahan, one from Zanjan and one from Babol. Required data was collected through interview (n = 7) and most of included studies had a low bias risk (n = 6) (Table 1).

Table 1. Studies included in the systematic review (N=7)

First Author	year	Province	Sample size	Target population	Age group(year)	Male-Female	Sampling Method	Methodology	Risk of bias
Sajadi ^[21]	2001	Isfahan	1421	Health worker	NR	446/975	convenience	Cross-sectional	Low
Shahbazi ^[22]	2011	Yazd	73	chefs	NR	NR	convenience	Case-control	low
Avaze ^[23]	2009	Zanjan	997	women	+20	All participants were women	convenience	Cross-sectional	low
Mohammadi ^[24]	2001	Ardebil	384	All Iranian population	+20	190/194	Simple random	Cross-sectional	low
Jalali ^[25]	2003	Babol	1500	All Iranian population	20-70	879/621	Simple random	Cross-sectional	low
Imanpour ^[26]	2007	Tehran	703	Teacher and health instructor	NR	NR	convenience	Cross-sectional	moderate
Toupchian ^[27]	2016	Tehran	89	women	11-67	All participants were women	convenience	Cross-sectional	low

Main results:

In general, all tools used in the research were made by the author and each was done through reviewing articles and consulting with experts in each field. The purpose of the questionnaire was to assess the general and approximate knowledge, attitude and practice about the risk factors of cardiovascular disease. The total number of items in the questionnaire was 10 to 60.

Attitude towards the risk factors of cardiovascular disease:

The positive and negative attitudes of the participants were met by answering the question that whether awareness of the risk factors of cardiovascular disease is beneficial or not. Positive and negative participants' attitudes were reported in all studies .Participants with a positive attitude in various researches varied from 36% positive to mostly positive .the average of knowledge about risk factors of cardiovascular disease according to included studies was weak to intermediate.

Table 2: Sources of information about risk factors of cardiovascular disease

study	Sources of Information					
	Book	Internet	TV	Journals	Family	Healthcare team
Sajadi		✓	✓	✓	✓	✓
shahbazi		✓	✓		✓	✓
Avaze	✓		✓		✓	
Mohammadi		✓	✓	✓		✓
Jalali	✓	✓	✓			✓
Imanpour					✓	✓
Toupchian		✓	✓	✓	✓	

Table 3. Knowledge and attitude toward risk factors of cardiovascular disease

First Author	Year	Outcome Measure	Instrumentation	Reliability, Validity	Overall Knowledge (%)	Attitude (%)	Main finding
Sajadi	2001	Knowledge/attitude	questionnaire	NR	43±17.7	59.3±31.2	Paying more attention to teaching the importance of nutrition in preventing cardiovascular disease

Shahbazi	2011	Knowledge/attitude	questionnaire	Cronbach alpha :0.75%	19.44±3.9	24.46±4.06	Regarding the role of chefs in the cardiovascular health of the people, increasing chefs' information through the curated educational programs in counseling centers
Avaze	2009	Knowledge/attitude	questionnaire	NR	66.7	62.4	Knowledge and attitude alone can not guarantee the act of individuals. Some interventions are essential to promote health behaviors.
Mohammadi	2001	Knowledge/attitude	questionnaire	NR	42.2% medium knowledge	51.3% positive	The need for regular planning to raise attitude and knowledge of individuals
Jalali	2003	Knowledge/attitude	questionnaire	NR	4.2% good knowledge	36% positive	Planning for improvement of knowledge and attitude about cardiovascular risk factors is essential

Imanpour	2007	Knowledge/attitude	questionnaire	NR	67% good knowledge	83.8% positive	it is suggested to provide effective educational programs for improving the nutrition and physical activity status for teachers and prevention and control of cardiovascular diseases.
Toupchian	2016	Knowledge/attitude	questionnaire	= 0.72	70% moderate to good knowledge	70% positive	knowledge and attitude enhancement is the main target and initial step in improving life quality and preventing cardiovascular diseases.

Discussion

The present systematic review was conducted to determine the attitude and knowledge about the risk factors for cardiovascular disease up to September 2018. 7 studies conducted on 5167 subjects were included in the final research. The tool used in all researches was developed by the author and according to experts, review articles and tools used by other researcher. In this study, the positive attitudes about risk factors for coronary artery disease was moderate. But in studies related to Cameroon and Nigeria, rates were 63.4% and 61.7%, respectively, indicating that there is a better attitude in these countries. This difference seems to be due to the difference in dominant culture in these countries. Another study shows that in India alone, this positive attitude toward raising awareness of the prevention of coronary artery disease is less than that in the present study. This difference may be due to the high population in India and the lack of access to appropriate training programs in generating a proper attitude. Most participants in the present study had a low to moderate knowledge about risk factors of cardiovascular disease. In a study in Srilanka the knowledge about cardiovascular risk factors was reported

moderate too(19) . but It was higher in Canadian population(20) .This difference may be due to different educational programs related to coronary artery disease in advanced countries and the existence of supportive services in these countries. The strengths of this research including the following points; as long as the researchers can claim, this is the first systematic review in this specific domain. These studies were conducted without time limit. Additionally, all the results were considered in a comprehensive way about attitude and practice. The most important limitation was the validity and reliability of the research tool used to determine attitude and knowledge; given the fact that the tools used were made by the researcher and no other studies had used these tools before, determining validity and reliability were quite difficult. Due to the lack of complete information in most studies, the authors were contacted for further information. Based on the results of this research that show lack of proper and sufficient knowledge on the part of Iranian subjects, it is recommended to conduct a national research to determine the attitude better, as well as establish educational centers in the country to inform people about ways to prevent cardiovascular disease.

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