

Gender Features of Attitude to Cardiovascular Prevention in the Open Population of a Medium Urbanized Siberian City

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Abstract

Relevance: According to the data of domestic and foreign epidemiological studies, the subjective-objective indicator of health, and in particular, the attitude of the population to the prevention and treatment of cardiovascular diseases, is the most important parameter characterizing the characteristics of the population's motivation to maintaining public health.

Purpose: To establish gender differences in the parameters of the subjective-objective indicator of health in the open urban population of 25-64 years old-attitudes towards the prevention of cardiovascular diseases.

Material and methods: A cross-sectional epidemiological study was carried out according to the algorithms of the WHO MONICA-psychosocial program on a representative sample of the population of the city of Tyumen among males and females in the amount of 2000 people. The response among men was 85.0%, among women – 70.3%. To assess the subjective-objective indicator of the health of the population, the WHO MONICA-psychosocial questionnaire "Knowledge and attitude to one's health" was used, which includes 33 questions; in this study, questions relating to attitudes to the prevention of cardiovascular diseases were used for analysis.

Results: Most of the open urban population believes in the possibility of cardiovascular prevention, especially favorable conditions for the formation of a preventive program in the region are formed among men in their third decade of life and women in their sixth decade of life. A significant part of the open urban population realistically assesses the possibilities of modern medicine in the prevention of cardiovascular diseases, men in their third decade of life are most critical compared to women, and men in their sixth decade of life are most uncritical. In the open urban population, less than 10% of the population is screened for preventive heart disease. Men, mostly older, have a more responsible attitude to their health compared to women. A greater confidence in the doctor among women was revealed, at the same time, adherence to additional diagnostic methods among men, regardless of age.

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Keywords: Epidemiological study; Open urban population; gender differences; Attitude to cardiovascular prevention.

Conclusion: The analysis of the obtained results suggests that the standardized methodology and the accumulated database should be used to continue objective monitoring of the epidemiological situation in relation to the subjective-objective indicator of the health of the population in the open urban population when planning and organizing regional preventive programs.

Introduction

According to the data of numerous epidemiological studies, the medical activity of the population, that is, the attitude to the treatment, prevention and diagnosis of non-communicable diseases, to preventive measures and medical care, is the most important parameter characterizing the characteristics of the population's motivation to maintain public health [1-8]. The need to study the attitude of the population to health is due, among other things, to the fact that the planning and development of most ineffective preventive programs was carried out only within the framework of the biomedical model of public health and healthcare [4,5]. According to most researchers, in modern socially oriented prevention programs there is an urgent need to move from the biomedical model of disease control to the biopsychosocial model of health [9-13]. Analysis of the results of studies on the attitude of the population to health and medical care obtained on a specific population will allow predicting the response of the population to various preventive programs, assessing the preliminary volumes of necessary preventive care, taking into account certain material costs that will be required by the implementation of preventive measures, and also realistically assessing the effectiveness of a possible intervention [2,14-16]. Many studies have shown the relationship between attitudes towards one's health and Coronary Heart Disease (CHD), conventional and non-conventional CVD risk factors, and life expectancy of the population [10,16]. Differences in attitudes towards one's health and medical care have been established depending on indicators of social and economic status, gender differences, demoeological factors, marital status [1,9,12,17,18]. Such studies were carried out, among other things, within the framework of the WHO international epidemiological project MONICA-psychosocial [8,11,15].

The purpose of this study was: To establish gender differences in the parameters of the subjective-objective indicator of health in the open urban population of 25-64 years old-attitudes towards the prevention of cardiovascular diseases.

Material and methods

A cross-sectional epidemiological study was conducted on a representative sample formed by the method of mechanical "random" selection from the electoral lists of citizens of the Central Administrative District of Tyumen among persons of both sexes. The population sample consisted of 2000 people, 250 people in each of the eight gender and age groups. The inclusion factors in the formation of the sample were: gender (men and women); age 25-64 years by decade of life 25-34, 35-44, 45-54, 55-64 years; registration and residence on the territory of the Central Administrative District of Tyumen. The exclusion factors were the following population groups: students, emigrants, military men, prisoners (it was established from the words of the subjects, these data were not included in the analytical array). In order to attract the population to participate in the examination (cardiological screening), 3 invitations were

sent step by step by Russian post (in the absence of a response to the first invitation, subsequent ones-with an interval of 7-9 days). Each participant in cardiac screening gave their written informed consent. The study protocol was approved by the ethical committee. The response among men was 85.0%, among women -70.3% (850 and 703 participants, respectively). The limitation of the study is the age category of not younger than 25 years and not older than 64 years, as well as the open population of a medium-sized Siberian city, which does not allow extrapolating the results obtained both to megacities and small cities of Russia.

To assess the attitude of the population to cardiovascular prevention and medical care, the WHO MONICA-psychosocial questionnaire "Knowledge and attitude to their health" was used [15]. A system of tests (fixed responses) was used, reflecting the parameters of the population's attitude to prevention and medical care.

The collection, correction, systematization of the initially obtained data, visualization of the results was carried out using Microsoft Office Excel spreadsheets. Statistical processing was carried out within the SPSS Statistics software version 23.0.0 SPSS Inc.

Research data for categorical variables are presented in shares (percentage) in eight sex-age groups in general for men and women, as well as by decades of life. To conduct a correct comparative analysis with the data of Russian and world epidemiological studies, standardization by age of the studied parameters was carried out using the direct method of standardization. To standardize indicators by age, the structure of the urban population of Russia from the third to the sixth decades of life in the age range of 25-64 years, according to the latest population census, was used. The statistical significance of differences between groups was determined by Pearson's chi-square test (χ^2) with a 95% confidence interval.

Results

Table shows the attitude to cardiovascular prevention in men and women of a medium-sized Siberian city, depending on age. To the question: "Can a healthy person of your age avoid some serious diseases if he takes preventive measures in advance?" a definite answer: "Yes, it certainly can" was received in 67.0% of men and 64.3% of women in the open population, and statistically significant gender differences in this parameter were obtained in the third (71.2% vs 58.2% $p = 0.020$) and sixth (57.0% vs 70.7%, $p = 0.003$) decades of life. An indefinite position in this question (the answer "Maybe yes") was taken by 32.2% of men and 34.8% of women, statistically significant differences in the same age categories, on the contrary, were determined more often in women than in men (25-34 years: 28.2% vs 41.8%, $p = 0.015$; 55-64 years: 42.1% vs 28.8%, $p = 0.004$). The extreme position (the answer is "incredible") was held by the minimum number of both men and women, regardless of age (Table 1).

As for the possibilities of modern medicine in the prevention of cardiovascular diseases, a significant part of the open population (45.4% of men and 44.1% of women), regardless of age, had a positive opinion, according to which most heart diseases can be prevented by modern medicine. The most categorical opinion- "yes, all heart diseases"- was made by the largest number of men in relation to women both in the general population (10.6% vs 5.9%, $p < 0.001$), and in the age category 55-64 years (17.8% vs 5.1%, $p < 0.001$). In general, in the open population, the most realistic attitude to the prevention of heart disease was found relatively equally in both men and women. So, to the question: "Do you believe that modern medicine can prevent heart disease?", the answer: "It depends on what kind of disease" among men was 37.1%, among women 42.4%, in age groups gender differences occurred at the age of 25-34 years (30.5% vs 43.4%, $p = 0.022$). The answer to the same question "No, only some" in the minimum number among men and women was met equally from 6.1% to 6.9% and also did not differ in age groups. According to another extreme position on the question asked about the possibilities of modern medicine in the prevention of heart disease (the answer is "no, not a single disease"), it was received in the range from 0.8% to 0.7% of cases among men and women, respectively (Table 1).

The next part of the questionnaire deals with possible options for the population to act when the first signs of disorders in the cardiovascular system appear. Thus, more than half of the population, both men (55.1%) and women (56.3%), answered that they would go to the doctor in case of severe pain or discomfort in the region of the heart, but would not go if this pain or discomfort was mild. Men are much more likely than women to go to the doctor if any pain or discomfort occurs in the region of the heart (32.0% vs 28.5%, $p = 0.045$). In addition, statistically significant differences were also found in the analysis of answers concerning men and women who were categorically negative about seeking medical help, that is, those who would not go to the doctor even if severe pain or discomfort appeared in the heart area. There were significantly fewer such men in the general population compared to women (3.3% vs 6.2%, $p = 0.006$), differences persisted in the older age category 55-64 years (1.9% vs 6.5%, $p = 0.016$). At the same time, less than 10% of people in the population who are regularly checked by a doctor, regardless of any pain or discomfort in the heart area (Table 1).

Further, the questions of the questionnaire were aimed at identifying the attitude of the population to the diagnosis of cardiovascular diseases. Statistically significant differences were obtained among the opinions of men and women of the open population in all three parameters indicated in the questionnaire. About a quarter of the population trusted their well-being and believed that they did not get sick if they felt well, and this opinion was much more often held by women, statistically significant gender differences occurred in the general population (21.6% vs 25.1%, $p = 0.024$) and in the age category 45-54 years (18.9% vs 28.6%, $p = 0.029$). At the same time, women also significantly more often trusted the opinion of a doctor without any additional research, statistically significant gender differences on this issue were noted in the general population indicator (30.1% vs 41.9%, $p < 0.001$), in the older age groups 45-54 ($p = 0.048$), 55-64 years ($p < 0.001$) and in the younger age category 25-34 years ($p = 0.006$). In contrast, about half of the men in the open population could not agree with the opinion of the doctor after a general examination until the specialists carried out thorough research, while such women were found

to be significantly less (48.3% vs 33.0%, $p < 0.001$), statistically significant differences persisted in all age categories (Table 1).

Discussion

So, the study of the subjective-objective indicator of the health of the population-the attitude to cardiovascular prevention-revealed the trends established for both sexes of the open population of a medium-sized Siberian city, which reflect the needs of a medium-sized Siberian city, which reflect the needs of the able-bodied urban population in the prevention of non-communicable diseases, and in particular, cardiovascular pathology. It is known that the studied parameters are a reliable indicator of public health, an established measure of the health of the population as a whole, which is also a predictive factor in relation to the risk of morbidity and mortality [5,7].

Scientific literature data support the hypothesis that the low level of cardiological health of the population is due to the high level and prevalence of non-conventional risk factors, including psychosocial risk factors and the population's attitude to health, prevention and medical care [2,8,13].

In preventive cardiology, a point of view has clearly formed, according to which the basis for planning any preventive intervention is the study of beliefs, ideas, and opinions of the population on health issues and the prevention of cardiovascular diseases [8,14,16,17]. In other words, we are talking about the concept of developing and implementing preventive programs created within the framework of the biopsychosocial model of health and healthcare [3,8,10].

The latest results of domestic studies state a significant excess of the proportion of people with a negative attitude towards their health and medical care among Russian populations in comparison with the population of Europe [3,8,11]. At the same time, a significant variation in indicators in Russian studies is probably due not so much to the true difference in indicators as to the use of different questionnaire tools in research protocols [6,8].

In the open population, a significant part of the population of a medium-sized Siberian city not only believes in the possibility of preventing serious diseases, but also realistically assesses the possibilities of modern medicine in preventing heart disease. For these positions, gender characteristics were identified in the age groups of respondents with an advantage for men in their third decade of life. In this regard, in the population there are significant potential opportunities for the male population regarding the effectiveness of preventive programs, starting from a young age. Nevertheless, the analysis of the data of this study showed an extremely negative attitude towards their health in the Tyumen population, especially among men, although in general, both men and women trusted the doctor more than their well-being. This positive fact probably opens a window of opportunity for planning preventive measures in the population of a moderately urbanized Siberian city. Among the men of the urban population, the situation is different. With a more responsible attitude to their health compared to women, men also showed a greater commitment to additional diagnostic tests during medical examinations.

The regularities revealed in this study should form the scientific basis for the main directions of preventive intervention in the open urban population in the gender aspect.

According to the basic concept underlying the study of atti-

Table 1: Attitude to the prevention of cardiovascular diseases in the open population aged 25-64 years in the gender aspect.

Question / Attitude	Age groups												age-standardized rate
	25 – 34 n = 177 (m)/ 122 (f)		35 – 44 n = 228 (m)/ 207 (f)		45 – 54 n = 231 (m)/ 159 (f)		55 – 64 n = 214 (m)/ 215 (f)		25 – 64 n = 850 (m)/ 703 (f)		p	%	
	%	p	%	p	%	p	%	p	%	p			
1. Do you think that a healthy person of your age can avoid some serious diseases if he takes preventive measures in advance?													
1.1. Yes, it certainly can	71.2/58.2	0.020	68.4/71.9	0.418	66.2/58.5	0.120	57.0/70.7	0.003	65.5/66.1	0.799			67.0/64.3
1.2. Maybe yes	28.2/41.8	0.015	31.1/27.1	0.349	32.5/39.0	0.185	42.1/28.8	0.004	33.6/32.9	0.743			32.2/34.8
1.3. Incredible	0.6/0	–	0.4/1.0	0.507	1.3/2.5	0.374	0.9/0.5	0.560	0.8/1.0	0.721			0.8/0.9
2. Do you believe that modern medicine can prevent heart disease?													
2.1. Yes, all heart diseases	9.6/4.9	0.135	7.5/5.8	0.489	10.4/8.2	0.464	17.8/5.1	<0.001	11.3/6.0	<0.001			10.6/5.9
2.2. Yes, most diseases	54.2/45.9	0.157	46.9/42.5	0.355	39.8/45.3	0.283	32.2/42.3	0.031	42.8/43.6	0.738			45.4/44.1
2.3. Depends what disease	30.5/43.4	0.022	41.2/43.0	0.709	40.7/37.7	0.557	39.7/44.7	0.301	38.5/42.4	0.117			37.1/42.4
2.4. No, just some	5.1/4.9	0.948	4.4/8.2	0.099	8.7/7.5	0.695	7.5/7.9	0.867	6.5/7.4	0.473			6.1/6.9
2.5. No, none	0.6/0.8	0.791	0/0.5	–	0.4/1.3	0.360	2.8/0	–	0.9/0.6	0.404			0.8/0.7
3. One of the health disorders in a middle-aged person is heart disease. There are different opinions about them. What is the most acceptable opinion for you?													
3.1. Regardless of whether I feel any pain or discomfort in the area of the heart, I am regularly checked by a doctor	10.7/9.0	0.643	6.6/9.7	0.238	6.9/8.2	0.644	15.0/9.3	0.073	9.3/9.4	0.949			8.9/9.1
3.2. I would go to the doctor if I have any pain or discomfort in the area of the heart	31.6/30.3	0.810	26.8/34.7	0.070	26.4/30.8	0.342	27.6/33.0	0.219	27.9/32.6	0.045			28.5/32.0
3.3. I would go to the doctor if there was severe pain or discomfort in the region of the heart, but I would not go if this pain or discomfort was mild	52.5/55.7	0.586	60.5/52.2	0.079	61.5/56.6	0.336	50.9/55.8	0.311	56.7/54.9	0.475			56.3/55.1
3.4. I would not go to the doctor even if there was severe pain or discomfort in the region of the heart	6.8/3.3	0.186	6.1/3.4	0.180	5.2/4.4	0.721	6.5/1.9	0.016	6.1/3.1	0.006			6.2/3.3
4. People's opinions about modern methods of diagnosing heart diseases are different. Which opinion do you agree with?													
4.1. I trust my well-being. If I feel good, it means that I am not sick	20.9/24.6	0.453	25.9/19.3	0.104	28.6/18.9	0.029	28.0/22.8	0.212	25.5/21.2	0.024			25.1/21.6
4.2. The doctor knows more than me. If he examined me and said that I was sick or well, I believe him	39.0/23.8	0.006	39.0/32.9	0.180	45.9/35.8	0.048	47.2/30.7	<0.001	42.2/31.3	<0.001			41.9/30.1
4.3. I will not necessarily agree with the opinion of the doctor after a general examination, until thorough research has been carried out by specialists	40.1/51.6	0.049	35.1/47.8	0.007	25.5/45.3	<0.001	24.8/46.5	<0.001	32.3/47.5	<0.001			33.0/48.3

Note: N: Number of Examined; M: Male Population; F: Female Population.

tudes towards one's own health and medical care, a successful understanding of the determinants of the subjective-objective indicator of the health of the population will make it possible to conceptually comprehend the objective indicators of public health, the study of which is a much more expensive and difficult process [5,8].

The study of attitudes towards cardiovascular prevention and medical care is important for planning and developing preventive strategies, and the establishment of gender differences in the parameters of a subjective-objective health indicator makes it possible to assess the needs and needs of a particular population in preventive care for the population.

The analysis of the obtained results suggests that the rigidly standardized methodology used in this study and the generated database should be used for further objective monitoring of the epidemiological situation in relation to the subjective-objective indicator of the health of the population in the open urban population when planning and organizing regional preventive programs.

Conclusions

1. Most of the open urban population believes in the possibility of cardiovascular prevention, especially favorable conditions for the formation of a preventive program in the region are formed among men in their third decade of life and women in their sixth decade of life.
2. A significant part of the open urban population realistically assesses the possibilities of modern medicine in the prevention of cardiovascular diseases, men in their third decade of life are most critical compared to women, and men in their sixth decade of life are most uncritical.
3. In the open population of a medium-sized Siberian city, less than 10% of the population is screened for heart disease. Men, mostly older, have a more responsible attitude to their health compared to women.
4. In the open urban population, a greater trust in the doctor among women was revealed, adherence to additional diagnostic methods among men, regardless of age.

Conflict of interest: the authors declare no conflict of interest.

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