

# A 15-year overview of changes in attitude towards disease prevention among men in an open urban population

**Akimov A.K.**

Tyumen Cardiovascular Research Center, Tomsk National Medical Research Center of the Russian Academy of Sciences, Tomsk, Russia.

## Author

**Alexander M. Akimov\***, PhD, doctor of sciences, researcher at the Cardiovascular Disease Epidemiology and Prevention Laboratory of Tyumen Cardiovascular Research Center, Tomsk National Medical Research Center of the Russian Academy of Sciences, Tomsk, Russia.

## Abstract

### Objective

*To evaluate the changes in the attitude towards disease prevention among men aged 25–64 years over a 15-year observation period.*

### Materials and methods

*We conducted cross-sectional epidemiological studies among working-age men (25–64 years) in 1996 and 2010. As a part of cardiovascular disease screening program, the participants completed the WHO questionnaires “Knowledge and Attitude towards Health” under the interviewer’s supervision.*

### Results

*During a 15-year observation period we identified an increase in positive attitude towards disease prevention in working-age men of the open population in a moderately urbanized Siberian city. Positive attitude trends were observed among young and middle-aged men. Over 15 years, young and middle-aged Tyumen men developed more positive attitudes towards the need of cardiovascular disease prevention, which creates favorable conditions for the work of preventive health care services.*

### Conclusion

*The results of our study indicate that strictly standardized methodology and database that we used should be utilized for further monitoring and research of urban population health in order to plan and organize regional prevention programs.*

**Keywords:** *epidemiological study, population monitoring, open population, attitude towards prevention.*

**Conflict of interests:** None declared.

**Received:** 21.03.2020

**Accepted:** 13.05.2020

## Introduction

The reduction in cardiovascular disease mortality can be successfully reached only if people are ready to take action in order to improve their health. It is well recognized that good medical knowledge, positive attitude towards disease prevention and readiness for behavioral changes are the major factors that support population health [1–3]. At the same time, poor social environment and culture can get in the way of disease prevention [4–6].

Motivation to change health behavior can be characterized by multiple parameters that include not only knowledge about cardiovascular disease (CVD) and its risk factors (RF), the ability to prevent and treat it and self-assessment of health status but also the attitude towards disease prevention. These parameters have been studied as the part of the WHO MONICA-psychosocial program [1]. It is extremely important to study these parameters as currently existing preventive measures are not effective enough as they were developed only as a part of a biomedical model of health and healthcare [7]. Studies have shown that the best results in changing health behaviors were reached when information provided was tailored for the needs of specific population groups depending on their education and social status, age, gender and etc. [1, 3, 8, 9].

As for today, both in Russia and worldwide the differences in parameters that characterize the attitude towards health and disease prevention are attributed to gender, ecological and demographic factors, family status and socioeconomic status [1.9–11]. Due to radical socioeconomic changes that took place in the Russian Federation since the "perestroika" period in the 1980s, a great need to study the epidemiology of non-infectious diseases and attitude towards its prevention among Russian population has emerged [12, 13]. The analysis of this information will provide the basis for prognosing the reaction to various preventive programs among population as well as the ability for preliminary evaluation of the amount of preventive measures that need to be taken, the financial costs and the potential effectiveness of preventive programs [7]. Therefore, we consider the analysis and

further exploration of the provided data to be much needed and relevant.

## Objective

To evaluate the changes in the attitude towards disease prevention among men aged 25–64 years over a 15-year population monitoring period.

## Materials and methods

This cross-sectional epidemiological study included working-age men from the Central district of Tyumen city and was carried out from 1996 to 2010. The representative samples were formed from the electoral lists that included men aged 25–64 years using the random number generation method. The samples consisted of 1000 individuals (250 for 25–34, 35–44, 45–54, 55–64 years). The response rate was 79.5% in 1996 and 85.0% in 2010.

We used the WHO questionnaires "Knowledge and Attitude towards Health" that were completed under the interviewer's supervision as a part of cardiovascular disease screening program. The study was conducted in accordance with the Good Clinical Practice

**Standards and Helsinki Declaration principles.** The study protocol was approved by the local Ethics committee. Written informed consent was obtained from all individual participants included in the study.

Statistical analysis was performed using the IBM SPSS Statistics 21.0 software. We performed age adjustment by direct standardization based on the age structure of Russian Federation urban population aged 25–64 years. We used Pearson's chi-squared test ( $\chi^2$ ) to determine if the groups were significantly different from each other. A p-value less than 0.05 was considered statistically significant.

## Results

Changes in attitude towards disease prevention among men aged 25–64 years in an open population are presented in Table 1.

The first question in the questionnaire explored general issues of attitude towards disease prevention. We asked if people found disease screening beneficial for their health. Data from the first and

Table 1. A 20-year overview of changes in attitude towards CVD prevention among men aged 25–64 in an open population

Question/attitude	Age groups											
	25–34		35–44		45–54		55–64		25–64		Age adjusted value	
	Absolute number	%	Absolute number	%	Absolute number	%	Absolute number	%	Absolute number	%	Absolute number	%
<b>1. Do you think that preventive health screenings are good for you?</b>												
1.1. Yes, it's good	147/104	67.4/85.2***	152/184	71.7/88.5***	166/136	74.8/85.5*	194/183	73.5/85.1**	659/607	71.9/86.2***		71.2/86.1
1.2. Probably, yes	68/18	31.2/14.8***	60/24	28.3/11.5***	53/23	23.9/14.5*	67/30	25.4/14.0**	248/95	27.1/13.8***		27.9/13.7
1.3. Probably, no	3/0	1.4/0	- /0	- /0	3/0	1.4/0	3/2	1.1/0.9	9/2	0.9/0		1.0/0.2
<b>2. "Can a healthy man of your age avoid some severe diseases by taking early preventive measures?"</b>												
2.1. Yes, of course	128/71	58.7/58.2	106/150	50.0/72.1***	108/93	48.6/58.5	129/152	48.9/70.7***	471/466	51.4/66.2***		52.5/64.3
2.2. Probably, yes	87/51	39.9/41.8	93/56	43.9/26.9***	93/62	41.9/39	124/62	47.0/28.8***	397/231	43.4/32.8***		42.6/34.8
2.3. Definitely, not	3/0	1.4/0	13/2	6.2/1.0**	21/4	9.5/2.5**	11/1	4.2/0.5**	48/7	5.2/1.0***		4.9/0.9

**Note:** \* statistically significant differences between the first and second screenings;

\* p<0.05;

\*\* p<0.01;

\*\*\* p<0.001.

second screening programs showed that the changes in attitude towards disease prevention were mostly positive (73.5% versus 85.1% respectively). The percentage of men with positive attitude towards disease prevention has steadily improved over the 20-year observation period and changed from 71.2 to 86.1% respectively,  $p < 0.001$  (age adjusted rate). This figure went up in all four age groups. We identified statistically significant differences in the number of positive responses in the surveys conducted before and after the 15-year observation period: "Yes, it is beneficial" in men aged 25–34 years (67.4–85.2%,  $p < 0.001$ ), 35–44 years (71.7–88.5%,  $p < 0.001$ ), 45–54 years (74.8–85.5%,  $p < 0.05$ ), 55–64 years (73.9–88.6%,  $p < 0.01$ ). The rate of ambiguous answers such as "Probably, yes" or "Probably, no" declined over the 15-year observation period (the decrease in the number of "Probably, yes" answers was statistically significant). The percentage of respondents who were uncertain if disease prevention measures were beneficial for their health dropped from 28.9% to 13.9% (age adjusted values). In the second screening less respondents from each age group answered "Probably, yes" (see Table 1).

The first screening showed that half of those surveyed answered positively to the question "Can a healthy man of your age avoid some severe diseases by taking early preventive measures?" (52.5%). At the second screening the number of respondents who answered positively increased to 64.3%. Such changes were noted not only in the younger age groups (35–44 years, 50–72.1%,  $p < 0.001$ ), but also in the older ones (55–64 years, 48.9–70.7%,  $p < 0.001$ ). The percentage of those who were unsure about the importance of the preventive measures decreased both in the younger and older age groups as well as in the general population over the 15-year observation period (42.6–34.8%,  $p < 0.001$ ). Moreover, the percentage of respondents who didn't believe that preventive measures were effective at all decreased from 4.9% to the minimal number of 0.9% over the 15-year observation period ( $p < 0.001$ ). Such a significant reduction occurred in all four described age groups and in the youngest age group this figure fell to zero (see Table 1).

## Discussion

We evaluated changes in the attitude towards cardiovascular disease prevention that occurred during a long-term observation period and identified specific tendencies that reflect a growing need for preventive

measures among urban working-age population. It is well known that the studied parameters are reliable indicators of population health and accepted general measure of population health that is also a prognostic factor of disease incidence and mortality [4, 7].

Previous research has established that the low level of cardiological health among Russian population is due to high prevalence of unconventional risk factors including psychosocial risk factors. Therefore, when forming the modern morbidity and mortality structure in Russia biopsychosocial model of disease control should take into account the changes that occurred at the second epidemiological transition [12].

According to the conception which was the basis of attitude towards health and disease prevention research, successful understanding of the main determinants of objective and subjective health indicators will allow to identify objective indicators of population health that are extremely costly and difficult to study [1].

When planning prevention programs, it is crucial to consider attitude towards disease prevention and health among population. The majority of men who were involved in our study agreed that preventive health screenings were good for them and the prevalence of such opinion significantly increased compared with the last decade of the twentieth century [3]. As such, our findings show that the majority of men in an open population not only have developed more positive attitude towards the idea of disease prevention but are also ready to implement these ideas. Such results seem optimistic enough and are probably due to changes in the political situation and introduction of social and political reforms since the 'perestroika' times during which the first screening was conducted in the Tyumen population. Both of these factors led to the major changes in Russian society. At the same time, according to the results of the previous study of Tyumen population, the tendency to care more about health was identified only after the coronary artery disease was already diagnosed [14]. This situation is, probably, the main reason of the existing problems in preventive cardiology as people are usually quite reluctant to change their opinion about the importance of preventive measures [2, 13]. Positive attitude trends towards the need of cardiovascular disease prevention were observed among young and middle-aged Tyumen men, which creates favorable conditions for the work of preventive health care services.

## Conclusion

The results of our study indicate that strictly standardized methodology and the formed database that we used should be utilized for further monitoring and research of urban population health in order to plan and organize regional prevention programs.

We can make several conclusions from our study:

1. During a 15-year observation period we identified a rise in the positive attitude towards disease

prevention in working-age men of the open population in a moderately urbanized Siberian city.

2. Positive attitude trends towards the need of cardiovascular disease prevention were observed among young and middle-aged Tyumen men.

**Conflict of interests:** None declared.

## References

1. Gafarov V.V., Gromova E.A., Gagulin I.V. et al. Gender differences in health awareness and attitudes as a subjective-objective health index in the population of Russia/Siberia (WHO MONICA-psychosocial program, HAPIEE project). *Therapeutic archive*. 2015;1:14–26. (Russian)
2. Briggs A., Wolstenholme J., Blakely T. et al. Choosing an epidemiological model structure for the economic evaluation of non-communicable disease public health interventions. *Popul Health Metr*. 2016;14:17.
3. Smaznov V.Yu., Kayumova M.M., Akimova E.V. et al. Awareness, attitude to one's health and prevention in the male Siberian population. *Preventative medicine*. 2011;4:24–27. (Russian)
4. McFadden E., Luben R., Bingham S. Social inequalities in self-rated health by age: cross-sectional study of 22,457 middle-aged men and women. *BMC Public Health*. 2008; 8: 46–52.
5. Akimov A.M., Kayumova M.M., Gafarov V.V., Kuznetsov V.A. Attitude to prevention of heart diseases and stress in the family in the open city population: prevalence, interrelations. *The Siberian medical journal*. 2018;33 (4): 148–153. (Russian)
6. Akimov A.M. Stress in family and social support in men population. *New journal Historical and Social Educational Idea*. 2013;6:103–105. (Russian)
7. Maslennikova G.Ya., Oganov R.G. Selection of optimal approaches to prevention of non-communicable diseases in international partnership circumstances. *Cardiovascular Therapy and Prevention*. 2018;17 (1): 4–9. (Russian)
8. Manfredini R., DeGiorgi A., Tiseo R. et al. Marital Status, Cardiovascular Diseases, and Cardiovascular Risk Factors: A Review of the Evidence. *J Womens Health*. 2017; 26 (6): 624–632.
9. Mitchenko E.I., Mamedov M.N., Kolesnik T.V. et al. Cardiovascular risk in an urban population in Ukraine. *International Journal of Heart and Vascular Diseases*. 2014;2:16–24.
10. Sorensen K., van den Broucke S., Fullam J. et al. Health literacy and public health: a systematic review and integration of definitions and models. *BMC Public Health*. 2012;12:80.
11. Akimova E.V., Akimov M.Yu., Gakova E.I. et al. Physical activity and social gradient in an open urban population: Gender differences. *Profilakticheskayameditsina*. 2017; 4 (20): 32–37. (Russian)
12. Boytsov S.A. Recent trends in and new data on the epidemiology and prevention of non-communicable diseases. *Terapevticheskii archiv*. 2016;1:4–10. (Russian).
13. Mamedov M.N. Dynamics of risk factors and cardiovascular diseases: analytical review of international and Russian data for 2017. *International Heart and Vascular Disease Journal*. 2018;6 (19): 32–37. (Russian)
14. Kayumova M.M., Akimov A.M., Gorbunova T.Yu., Gafarov V.V. Self-assessment of health in men and women of the open population of the medium-urbanized city of Western Siberia: gender peculiarities. *Siberian Scientific Medical Journal*. 2019; 39 (5): 149–155. (Russian)