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Research Article,

Gender Differences in the Dynamics of Attitudes towards the Prevention of Cardiovascular Diseases in Population Aged 25-64 Years from 1988 To 2017

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Abstract:

The aim: To determine gender differences in the dynamics of attitudes towards the cardiovascular prevention in an open population of 25-64 years over a long-term period - 29 years in Russia / Siberia (Novosibirsk).

Methods: Within the framework of the screening in 1988-89 under the WHO MONICA-psychosocial (MOPSY) program (n=1676, 49.5% males, mean age 44.1±0.4 years), MOPSY screening in 1994-95 (n=1527, 43% males, mean age 44.85 ± 0.4 years), in 2003-2005 under the international project HAPIEE (n=1650, 34,9% males, mean age 54,25±0,2 years), in 2013-2016 (n=975, 43,8% males, mean age 34,5±0,4 years) and 2016-2017 (n=663, 41,3% years 51,95±0,32 years) within the framework of the budgetary theme No. AAAA-A17-117112850280-2, random representative samples of men and women in one of districts in Novosibirsk were examined. Attitude towards preventive methods and health care utilization were assessed using the questionnaire "Knowledge and attitude towards own's health".

Results: About 100% male and female population aged of 25-64 years considered it probable "to develop a serious illness within the next 5-10 years" in 1988. This proportion has not changed significantly by 2017. In 1988, men more often than women certainly believed that they would avoid serious illness if they took action on their own health. In subsequent years of observation these sex differences in responses were erased. Belief in the power of medicine to prevent all or most of the heart disease was present among young men in 2013 and 2017. In comparison with them, women are more balanced about the preventive possibilities of medicine.

Despite the fact that 100% of men and women in the open population 25-64 years find "preventive health screening" useful, only 6.8% of males and 3% of females were regularly checked by a doctor in 1988. In 2016-2017, the frequency of regular health checks exceeded the 10% in middle-aged groups.

An equal proportion of men and women - 67% sought medical help only in case of chest pain, and 11-12% would not go to a doctor even with intense pain; by 2017, their share had decreased to 6.5%.

Conclusions: Among those who consider it likely to have a serious illness, only one of ten is regularly checked by a doctor. At the same time, men are more likely than women to shift responsibility for their health to the preventive capabilities of medicine.

Keywords: awareness, cardiovascular prevention, sex differences, population, healthcare utilization

Introduction:

Gender differences in prevention are due to many factors. For example, in the way men and women perceive and report their diseases and symptoms. There may be misperceptions of health risks and misperceptions about the benefits of certain medical procedures, unconscious and cultural biases. Gender bias in medicine also leads to

gender inequalities in access to and use of health services. A number of diseases, for example, depression, is considered as a diagnosis associated with the female sex [1]; thus, health care providers may not consider depression when assessing males. This can lead to differences in health care utilization by men and women. Differences in the use of preventive measures and the use of care can arise due to the fact that men neglect their health and do not seek medical help until their health condition worsens [2]. Because men seek medical attention at a later stage, their treatment is more expensive. But the study of self-rated health in a number of countries shows that health deteriorates more with age in women compared with men [3].

Gender differences in the use of health care can be explained by the fact that women tend to experience life-threatening diseases somewhat later than men [2]. And, probably, this is associated with an underestimation of their risk compared to men and a delay in seeking consultation at the clinic, for example, in the case of myocardial infarction [4]. However, most of studies indicate a 30% difference in the frequency of seeking medical help / consultation. The largest gender gap in primary care is observed among people of working age 18-60 years old. And among those who receive drug therapy gender differences in accessibility are minimal [5]. But we should not ignore the fact that men do not experience such dramatic changes as women do during menopause [2]. More frequent contacts of women with health services can contribute to the emergence of gender differences, as they are more informed and aware of the diagnoses and symptoms made by the doctor [3]. Our research complements these prior scientific reports. Evaluating a large number of people from the general population participating in screening over the years but with a common design, increases the generalizability and relevance required for epidemiological protocols based on research principles. Thus, the aim of our study was to study gender differences in the dynamics of attitudes towards cardiovascular prevention in population aged of 25-64 years over a long-term period - 29 years.

Methods:

The results of our study were obtained on the basis of a survey of the male and female population living in one of the districts of Novosibirsk. The examinations were carried out within the framework of screenings 1988-89, 1994-95, 2003-2005, 2013-2016 and 2016-2017.

Under the II screening of the WHO program «Multinational Monitoring of Trends and Determinants of Cardiovascular Disease - Optional Psychosocial Sybstudy» (MONICA-MOPSY) representative sample of residents aged 25–64 years was examined in 1988-1989 (n=1676, 49.5% males, mean age 44.1±0.4 years, response rate - 69.8%) [6]. in frame of MOPSY screening in 1994-1995 representative sample of residents aged 25–64 years was examined (n=1527, 43% males, mean age − 44.85±0.4 years, response rate – 77.3%).

In the course of another international project HAPIEE (Health, Alcohol and Psychosocial factors In Eastern Europe) persons aged 45-64 were examined in 2003-2005 (n=1650, 34.9% males, mean age 54.25±0.2 years, response rate – 66.5%) [7]. In the framework of the screening studies a random representative sample survey of the population aged 25-44 years conducted in 2013-2016 by the budget scientific research theme, Gov.Task № 01201282292 (n=975, 43.8% males, mean age 34.5±0.4 years, response rate – 71.5%). Within the framework of the budget theme No. AAAA-A17-117112850280-2 a survey of persons aged 35-64 was carried out in 2016-2017 (n=663, 41.3% males, mean age 51.95±0.32 years, response rate – 73.6%). The study included residents of the same district of Novosibirsk as in 1994-95, 2003-2005 and 2013-2016. All samples were formed on the basis of electoral lists of citizens using a table of random numbers. A random mechanical selection procedure was used. The general survey was carried out according to the standard methods accepted in epidemiology and included in the MONICA program [6]. The methods were strictly standardized and complied with the requirements of the MONICA project protocol. Validation and processing of material according to the WHO MONICA-psychosocial program was carried out at the Information Collection Center of the MEDIS Institute in Munich, Germany (Institut für Medizinische Informatik und Systemforschung). Quality control was carried out in MONICA quality control centers: Dundee (Scotland), Prague (Czech Republic), Budapest (Hungary). The presented results were considered satisfactory. The screening survey program included registration of socio-demographic data according to the standard epidemiological protocol of the WHO MONICA-

psychosocial program: identification number, place of residence, full name, date of birth, date of registration, gender, marital status, educational level, professional status. Indicators of awareness about own health and methods of cardiovascular prevention, medical care utilization were studied using the "Knowledge and Attitude to Own's Health" scale proposed by the MOPSY protocol and adapted to the studied population [8]. The subjects were asked to answer the questions of the scale themselves according to the instructions placed on the scale. Individuals who did not complete the questionnaire were not included in the analysis. Statistical analysis was performed using the SPSS software package version 11.5. The study participants were standardized by age groups in the analysis. To compare the indicators between screenings, the corresponding age groups were used. To check the statistical significance of differences between groups, we used: the chi-square test (χ^2). As a criterion of statistical significance the value of the chi-square was taken into account at a certain number of degrees of freedom. The reliability of analysis was accepted at a significance level of $p<0.05$.

Results:

To the question: "Do you think that a healthy person of your age can get sick with a serious illness within the next 5-10 years?" almost 100% of males and females aged 25-64 answered "highly possible" and "possible" in 1988. The proportion of people who considered the possibility of getting sick «highly possible» was higher among women (34.3% and 39% for men and women; $p = 0.067$). This gender difference was stronger in the youngest group of 25-34 years (28.4% and 35.9%, respectively; $p = 0.057$) and the middle-age group 45-54 years old (37.9% and 44.3%; ns), although was not statistically significant. The proportion of those convinced that "a person of their age will get sick in the next 5-10 years" increased with age among both sexes. The proportion of older participants who noted a high likelihood of "getting sick within the next 5-10 years" was higher among men than women in 2003; these differences were statistically significant in the 55-64 age group ($p <0.05$). The same trend persisted in 2016-17: 43% and 30.1% for men and women aged of 55-64 years ($p <0.05$). In the younger age groups, there was a certain parity in opinions with the exception of 2013-2017 when women aged of 35-44 years noted a high probability of getting sick more often than men.

In 1988, men were more categorical in their statements to the question: "Is a healthy person of your age able to avoid serious diseases if he takes actions in advance?". They answered "yes, definitely": 52.8% and 43.8% for men and women aged of 25-64 years ($p <0.01$). In subsequent years of observation, these sex differences in responses were erased. But in 2013 and 2017, the frequency of categorical answers "yes, it is certainly possible to avoid diseases" increased, especially in younger age groups, approaching 60-70% without significant gender differences.Gender differences in the structure of opinions were found when answering the question: "Is modern medicine capable to prevent heart disease?" In 1988, the proportion of women was higher among the answers "it depends on the disease": 51.4% and 58.6% for men and women aged of 25-64 years ($p <0.05$). The belief in the ability of medicine to prevent heart disease was higher among the male population, especially in the younger age group: 33.3% and 24.7% for men and women aged of 25-34 years (combined answers are "yes, all heart diseases", "yes, most of diseases "; $p <0.001$). In the dynamics, there was an increase in such beliefs among the population. Two-thirds of men and 50% of women aged of 25-34y and 35-44y believed that medicine could prevent "all or most of the heart diseases" in 2013 and 2017. At the same time, there was a decrease in opinions about the ability of medicine to prevent "only some diseases" or "none" in these age groups; the frequency of such responses did not exceed 10-12%.

Table1. Gender differences in awareness and attitude towards own's health among the population aged of 25-64 years, depending on age

Attitude toward s own's		25-34 years				35-44 years				45-54 years				55-64 years				25-64 years			
		M		F		M		F		M		F		M		F		M		F	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%

health																				
Do you believe that a healthy person of your age can get a serious illness within the next 5-10 years?																				
1. Highly possible	1988	58	**28.4**	66	**35.9**	61	**30.8**	71	**33.8**	66	**37.9**	81	**44.3**	60	**39.7**	60	**44.4**	252	**34.3**	281	**39.0**
2. Possible		142	**69.6**	118	**64.1**	132	**66.7**	137	**65.2**	104	**59.8**	100	**54.6**	91	**60.3**	74	**54.8**	469	**69.9**	434	**60.2**
3. Incredible		4	**2**	0	**0**	5	**2.5**	2	**1.0**	4	**2.3**	2	**1.1**	0	**0**	1	**0.7**	13	**1.8**	6	**0.8**
Total		204	**100**	184	**100**	198	**100**	210	**100**	174	**100**	183	**100**	151	**100**	135	**100**	734	**100**	721	**100**
		χ^2=5.716 p=0.057 df=2				n.s.				n.s.				n.s.				χ^2=5.398 p=0.067 df=2			
1. Highly possible	2003									118	**38.8**	210	**37.9**	129	**47.4**	197	**37.9**	247	**42.9**	407	**37.9**
2. Possible										182	**59.9**	336	**60.6**	141	**51.8**	317	**61.0**	323	**56.1**	653	**60.8**
3. Incredible										4	**1.3**	8	**1.4**	2	**0.7**	6	**1.2**	6	**1.0**	14	**1.3**
Total										304	**100**	554	**100**	272	**100**	520	**100**	576	**100**	1074	**100**
										n.s.				χ^2=6.830 p<0.05 df=2				n.s.			
1. Highly possible	2013	51	**31.1**	66	**31.0**	71	**27.2**	132	**39.4**									122	**28.7**	198	**36.1**
2. Possible		105	**64.0**	133	**62.4**	181	**69.3**	198	**59.1**									286	**67.3**	331	**60.4**
3. Incredible		8	**4.9**	14	**6.6**	9	**3.4**	5	**1.5**									17	**4.0**	19	**3.5**
Total		164	**100**	213	**100**	261	**100**	335	**100**									425	**100**	548	**100**
		n.s.				χ^2=11.120 p<0.01 df=2												χ^2=5.990 p=0.05 df=2			
1. Highly possible	2017					22	**31.0**	31	**31.6**	34	**41.5**	39	**28.3**	52	**43.0**	46	**30.1**	108	**39.4**	116	**29.8**
2. Possible						47	**66.2**	65	**66.3**	48	**58.5**	98	**71.0**	69	**57.0**	102	**66.7**	164	**59.9**	265	**68.1**
3. Incredible						2	**2.8**	2	**2.0**	0	**0**	1	**0.7**	0	**0**	5	**3.3**	2	**0.7**	8	**2.1**
Total						71	**100**	98	**100**	82	**100**	138	**100**	121	**100**	153	**100**	274	**100**	389	**100**
						n.s.				n.s.				χ^2=8.109 p<0.05 df=2				χ^2=7.956 p<0.05 df=2			

Table 2. Gender differences in awareness and attitude towards own's health among the population aged of 25-64 years, depending on age

Attitude towards own's health		25-34 years				35-44 years				45-54 years				55-64 years				25-64 years			
		M		F		M		F		M		F		M		F		M		F	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Is a healthy person of your age able to avoid serious diseases if he takes actions in advance?																					
1. Yes, definitely	1988	112	**54.9**	85	**46.2**	114	**57**	95	**44.8**	86	**49.4**	76	**41.3**	78	**50.9**	58	**42.3**	390	**52.8**	318	**43.8**
2. May be		86	**42.2**	96	**52.2**	82	**41.8**	114	**53.8**	80	**46.0**	99	**53.8**	71	**46.4**	73	**53.3**	327	**44.3**	387	**53.3**
3. Incredible		6	**2.9**	3	**1.6**	4	**2**	3	**1.4**	8	**4.6**	9	**4.9**	4	**2.6**	6	**4.4**	21	**2.9**	21	**2.9**
Total		204	**100**	184	**100**	200	**100**	212	**100**	174	**100**	184	**100**	153	**100**	137	**100**	738	**100**	726	**100**
		n.s.				χ^2=6.751 p<0.05		df=2		n.s.				n.s.				χ^2=12.267 p<0.01		df=2	
1. Yes, definitely	2003									161	**53.0**	261	**47.1**	112	**41.2**	205	**39.4**	273	**47.4**	466	**43.4**
2. May be										139	**45.7**	273	**49.3**	152	**55.9**	299	**57.5**	291	**50.5**	572	**53.3**
3. Incredible										4	**1.3**	20	**3.6**	8	**2.9**	16	**3.1**	12	**2.1**	36	**3.4**
Total										304	**100**	554	**100**	272	**100**	520	**100**	576	**100**	1074	**100**
										χ^2=5.575 p=0.062		df=2		n.s.				n.s.			
1. Yes, definitely	2013	119	**72.6**	150	**70.4**	176	**67.7**	227	**67.8**									295	**69.6**	377	**68.8**
2. May be		44	**26.8**	62	**29.1**	80	**30.8**	105	**31.3**									124	**29.2**	167	**30.5**
3. Incredible		1	**.6**	1	**.5**	4	**1.5**	3	**.9**									5	**1.2**	4	**.7**
Total		164	**100**	213	**100**	260	**100**	335	**100**									424	**100**	548	**100**
		n.s.				n.s.												n.s.			
1. Yes, definitely	2017					43	**60.6**	59	**60.2**	49	**59.8**	79	**57.2**	59	**48.8**	77	**50.3**	151	**55.1**	215	**55.3**
2. May be						28	**39.4**	38	**38.8**	33	**40.2**	57	**41.3**	62	**51.2**	75	**49.0**	123	**44.9**	170	**43.7**
3. Incredible						0	**0**	1	**1.0**	0	**0**	2	**1.4**	0	**0**	1	**0.7**	0	**0**	4	**1.0**
Total						71	**100**	98	**100**	82	**100**	138	**100**	121	**100**	153	**100**	274	**100**	389	**100**
						n.s.				n.s.				n.s.				n.s.			

Table 3. Gender differences in awareness and attitude towards own's health among the population aged of 25-64 years, depending on age

Attitude towards own's health		25-34 years				35-44 years				45-54 years				55-64 years				25-64 years			
		M		F		M		F		M		F		M		F		M		F	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Is modern medicine capable to prevent heart disease																					
1. Yes, all of heart diseases	1988	8	**3.9**	4	**2.2**	11	**5.5**	5	**2.4**	9	**5.3**	9	**4.9**	19	**12.4**	14	**10.2**	47	**6.4**	33	**4.6**
2. Yes, most of heart diseases		60	**29.4**	41	**22.5**	46	**23**	38	**18.0**	29	**17.0**	27	**14.8**	29	**19.0**	19	**13.9**	166	**22.6**	125	**17.3**
3. It depends on the disease		101	**49.5**	102	**56.0**	103	**51.5**	129	**61.1**	98	**57.3**	109	**59.6**	72	**47.1**	78	**56.9**	378	**51.4**	423	**58.6**
4. Some of them, only		33	**16.2**	33	**18.1**	33	**16.5**	34	**16.1**	31	**18.1**	31	**16.9**	29	**19.0**	21	**15.3**	127	**17.3**	122	**16.9**
5. None		2	**1**	2	**1.1**	7	**3.5**	5	**2.4**	4	**2.3**	7	**3.8**	4	**2.6**	5	**3.6**	17	**2.3**	19	**2.6**
Total		204	**100**	182	**100**	200	**100**	211	**100**	171	**100**	183	**100**	153	**100**	137	**100**	735	**100**	722	**100**
		χ^2=68.064 p<0.001		df=4		χ^2=9.017 p=0.061		df=4		n.s.				n.s.				χ^2=10.851 p<0.05		df=4	
1. Yes, all of heart diseases	2003									34	**11.2**	65	**11.7**	28	**10.3**	70	**13.5**	62	**10.8**	135	**12.6**
2. Yes, most of heart diseases										80	**26.3**	120	**21.7**	42	**15.4**	78	**15.0**	122	**21.2**	198	**18.4**
3. It depends on the disease										148	**48.7**	276	**49.8**	160	**58.8**	275	**52.9**	308	**53.5**	551	**51.3**
4.										41	**13.**	84	**15.**	35	**12.**	87	**16.**	76	**13.**	171	**15.**

Some of them, only											**5**		**2**		**9**		**7**		**2**		**9**
5. None										1	**0.3**	9	**1.6**	7	**2.6**	10	**1.9**	8	**1.4**	19	**1.8**
Total										304	**100**	554	**100**	272	**100**	520	**100**	576	**100**	1074	**100**
										n.s.				n.s.				n.s.			
1. Yes, all of heart diseases	2013	22	**13.4**	32	**15.0**	44	**16.9**	42	**12.5**									66	**15.5**	74	**13.5**
2. Yes, most of heart diseases		89	**54.3**	81	**38.0**	104	**39.8**	135	**40.3**									193	**45.4**	216	**39.4**
3. It depends on the disease		46	**28.0**	90	**42.3**	84	**32.2**	124	**37.0**									130	**30.6**	214	**39.1**
4. Some of them, only		7	**4.3**	10	**4.7**	28	**10.7**	30	**9.0**									35	**8.2**	40	**7.3**
5. None		0	**0**	0	**0**	1	**.4**	4	**1.2**									1	**.2**	4	**.7**
Total		164	**100**	213	**100**	261	**100**	335	**100**									425	**100**	548	**100**
		χ^2=10.807 p<0.05			df=4	n.s.												χ^2=8.990 p=0.061			df=4
1. Yes, all of heart diseases	2017					15	**21.1**	14	**14.3**	12	**14.6**	19	**13.8**	27	**22.3**	26	**17.0**	54	**19.7**	59	**15.2**
2. Yes, most of heart diseases						37	**52.1**	40	**40.8**	17	**20.7**	42	**30.4**	18	**14.9**	43	**28.1**	72	**26.3**	125	**32.1**
3. It depends on the disease						19	**26.8**	35	**35.7**	37	**45.1**	60	**43.5**	53	**43.8**	75	**49.0**	109	**39.8**	170	**43.7**
4. Some of						0	**0**	9	**9.2**	8	**9.8**	17	**12.3**	23	**19.0**	9	**5.9**	31	**11.3**	35	**9.0**

them, only																		
5. None			0	**0**	0	**0**	8	**9.8**	0	**0**	0	**0**	0	**0**	8	**2.9**	0	**0**
Total			71	**100**	98	**100**	82	**100**	138	**100**	121	**100**	153	**100**	274	**100**	389	**100**
			χ^2=9.829 p<0.05		df=4		χ^2=15.625 p<0.01		df=4		χ^2=16.661 p=0.001		df=4		χ^2=16.612 p<0.01		df=4	

About 100% of men and women in the open population aged 25-64 believe that a "preventive health check" is useful. Over the 29-year observation period, this proportion did not change significantly, as well as no statistically significant gender differences in the respondents' opinions were found. In 2003-2005, the proportion of those unsure of the obvious benefits of health checks (answer: "maybe yes") increased in comparison with 1988 and 1994. The proportion of those convinced that preventive screening was unambiguously beneficial was slightly higher among women than men in young age groups at screenings in 1994, 2013-16 and 2016-17. The proportion of those who doubt the usefulness of health examinations is vanishingly small and was noticeable only in 2003-2005 among older men.

Table4. Gender differences in awareness and attitude towards own's health among the population aged of 25-64 years, depending on age

Attitude towards own's health		25-34 years				35-44 years				45-54 years				55-64 years				25-64 years			
		M		F		M		F		M		F		M		F		M		F	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
In your opinion, is a preventive health check up useful?																					
1. Yes, it's useful	1988	161	**78,5**	137	**74.9**	149	**79,3**	157	**75.1**	135	**76,3**	135	**73.4**	112	**74,7**	108	**79.4**	557	**77.6**	542	**75.2**
2. May be		43	**21**	44	**24.0**	37	**19,7**	52	**24.9**	41	**23,2**	49	**26.6**	36	**24,0**	27	**19.9**	157	**21.6**	176	**24.4**
3. It's doubtful		0	**0,5**	1	**0.5**	2	**1,1**	0	**0**	1	**0,6**	0	**0**	2	**1,3**	1	**0.7**	5	**0.7**	2	**0.3**
4. Not useful		1	**0**	1	**0.5**	0	**0**	0	**0**	0	**0**	0	**0**	0	**0**	0	**0**	1	**0.1**	1	**0.1**
Total		205	**100**	183	**100**	188	**100**	209	**100**	177	**100**	184	**100**	150	**100**	136	**100**	720	**100**	721	**100**
		n.s.				n.s.				n.s.				n.s.				n.s.			
1. Yes, it's useful	1994	134	**81.7**	103	**84.4**	132	**79.5**	130	**84.4**	106	**79.7**	38	**84.4**	123	**80.4**	55	**83.3**	495	**80,4**	326	**84,2**
2. May be		30	**18.3**	18	**14.8**	34	**20.5**	22	**14.3**	26	**19.5**	7	**15.6**	29	**19**	11	**16.7**	119	**19,3**	58	**15,0**
3. It's doubtful		0	**0**	0	**0**	0	**0**	2	**1.3**	1	**0.8**	0	**0**	1	**0.7**	0	**0**	2	**0,3**	2	**0,5**
4. Not useful		0	**0**	1	**.8**	0	**0**	0	**0**	0	**0**	0	**0**	0	**0**	0	**0**	0	**0**	1	**0,3**
Total		16	**10**	12	**10**	16	**10**	15	**10**	13	**10**	45	**10**	15	**10**	66	**10**	61	**10**	387	**10**

		4	**0**	2	**0**	6	**0**	4	**0**	3	**0**		**0**	3	**0**		**0**	6	**0**		**0**
		n.s.				n.s.				n.s.				n.s.				n.s.			
1. Yes, it's useful	2003									219	**72.0**	395	**71.3**	183	**67.3**	336	**64.6**	402	**69.8**	731	**68.1**
2. May be										78	**25.7**	147	**26.5**	79	**29.0**	173	**33.3**	157	**27.3**	320	**29.8**
3. It's doubtful										6	**2.0**	10	**1.8**	10	**3.7**	10	**1.9**	16	**2.8**	20	**1.9**
4. Not useful										1	**0.3**	2	**0.4**	0	**0**	1	**0.2**	1	**0.2**	3	**0.3**
Total										304	**100**	554	**100**	272	**100**	520	**100**	576	**100**	1074	**100**
										n.s.				n.s.				n.s.			
1. Yes, it's useful	2013	143	**86.7**	190	**89.2**	215	**82.1**	287	**85.7**									358	**83.8**	477	**87.0**
2. May be		19	**11.5**	22	**10.3**	44	**16.8**	44	**13.1**									63	**14.8**	66	**12.0**
3. It's doubtful		3	**1.8**	1	**0.5**	3	**1.1**	3	**0.9**									6	**1.4**	4	**0.7**
4. Not useful		0	**0**	0	**0**	0	**0**	1	**0.3**									0	**0**	1	**0.2**
Total		165	**100**	213	**100**	262	**100**	335	**100**									427	**100**	548	**100**
		n.s.				n.s.												n.s.			
1. Yes, it's useful	2017					60	**84.5**	87	**88.8**	67	**81.7**	122	**88.4**	101	**83.5**	127	**83.0**	228	**83.2**	336	**86.4**
2. May be						10	**14.1**	11	**11.2**	15	**18.3**	16	**11.6**	19	**15.7**	25	**16.3**	44	**16.1**	52	**13.4**
3. It's doubtful						0	**0**	0	**0**	0	**0**	0	**0**	1	**0.8**	1	**0.7**	1	**0.4**	1	**0.3**
4. Not useful						1	**1.4**	0	**0**	0	**0**	0	**0**	0	**0**	0	**0**	1	**0.4**	0	**0**
Total						71	**100**	98	**100**	82	**100**	138	**100**	121	**100**	153	**100**	274	**100**	389	**100**
						n.s.				n.s.				n.s.				n.s.			

Continuing the theme of cardiovascular prophylaxis, in 1988 only 6.8% of the male and 3% of the female population aged 25-64 were regularly checked by a doctor, regardless of whether there were any discomfort or pain in the chest (p <0, 05). The difference by sex was the highest in the groups of 35-44 years old - 6.1% and 1.0%, 55-64 years old - 12.1% and 4.0%, respectively (p for all <0.05). An equal proportion of men and women (67%) sought medical help only in case of "severe chest pain". Another 17% go to the doctor if they experience "any discomfort in the chest"; there was also gender parity. 10.9% of men and 12.1% of women aged of 25-64 years would not go to the doctor even with severe pain; these proportions were higher in the younger age group 25-44: 17.7% and 16.1%, respectively (n.s.).

By 2003-05, the proportion of older men and women aged of 45-64 years who did not seek medical help even with severe chest pain, decreased and reached 6.8% of men and 6.1% of

women (p <0.05). The proportion of men with regular health check-ups was also ahead of women as in 1988 (p <0.05). The gender difference in the frequency of regular check-ups with a doctor decreased due to a decrease in men in comparison with 1988, but remained significant in the 45-54 age group: 5.9% and 4.7%, respectively (p <0.001). Men more often than women reported that they see a doctor in case of any chest discomfort (23.3% and 17.3%, respectively; p <0.05).

The younger age groups in 2013-16 showed an increase in those who were regularly checked by a doctor, especially in the 35-44 age group: 9.6% of men and women. There has also been an increase in the proportion of men and women who seek treatment for any chest discomfort and it was about 30% in average in both age groups. At the same time, the number of those who did not go to the doctor even with severe pain decreased; the lowest share was among women aged of 35-44 years - 2.4%. In the structure of responses, gender equality was noted in all age groups at that time.

In 2016-2017, the trend in regular health checks continued, exceeding the 10% in the 35-44 and 45-54 age groups, however, remaining at a low level in the oldest 55-64 age group - 6%. In comparison with the previous observation periods, the frequency of visits to a doctor in case of any chest discomfort increased up to 40% in men and women of all age groups. The proportion of people who did not seek help for severe chest pain did not exceed 6-6.5%. As in 2013, there were no gender differences in the structure of responses.

Table 5. Gender differences in awareness and attitude towards own's health among the population aged of 25-64 years, depending on age

Attitude towards own's health		25-34 years				35-44 years				45-54 years				55-64 years				25-64 years			
		M		F		M		F		M		F		M		F		M		F	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
One of the health problems in middle-aged people is heart disease. There are different opinions about them. What is the most acceptable opinion for you?																					
1. I regularly checked by a doctor	1988	6	**3**	4	**2.2**	12	**6.1**	2	**1.0**	14	**8.3**	10	**5.6**	17	**12.1**	5	**4.0**	48	**6,8**	21	**3,0**
2. See the doctor for any chest discomfort		31	**15.3**	35	**19.4**	22	**11.2**	28	**13.5**	28	**16.7**	28	**15.8**	34	**24.1**	28	**22.2**	116	**16,2**	119	**17,0**
3. See the doctor for severe chest pain		130	**64**	112	**62.2**	143	**72.6**	153	**73.6**	111	**66.1**	123	**69.5**	83	**58.9**	79	**62.7**	473	**66,1**	475	**67,9**
4. Do not see a doctor, even when severe pain		36	**17.7**	29	**16.1**	20	**10.2**	25	**12.0**	15	**8.9**	16	**9.0**	7	**5.0**	14	**11.1**	78	**10,9**	85	**12,1**
Total		203	**100**	180	**100**	197	**100**	208	**100**	168	**100**	177	**100**	141	**100**	126	**100**	715	**100**	700	**100**

		n.s.				χ^2=8.464 p<0.05			df=3	n.s.				χ^2=8.743 p<0.05			df=3	χ^2=10.751 p<0.05			df=3
1. I regularly checked by a doctor	2003									18	**5.9**	26	**4.7**	22	**8.1**	39	**7.5**	40	**6.9**	65	**6.1**
2. See the doctor for any chest discomfort										78	**25.7**	97	**17.5**	56	**20.6**	89	**17.1**	134	**23.3**	186	**17.3**
3. See the doctor for severe chest pain										19	**62.8**	398	**71.8**	172	**63.2**	354	**68.1**	363	**63.0**	752	**70.0**
4. Do not see a doctor, even when severe pain										17	**5.6**	33	**6.0**	22	**8.1**	38	**7.3**	39	**6.8**	71	**6.6**
Total										304	**100**	554	**100**	272	**100**	520	**100**	576	**100**	1074	**100**
										χ^2=150.428 p<0.001			df=3	n.s.				χ^2=10.034 p<0.05			df=3
1. I regularly checked by a doctor	2013	7	**4.2**	15	**7.0**	25	**9.6**	32	**9.6**									32	**7.5**	47	**8.6**
2. See the doctor for any chest discomfort		59	**35.8**	68	**31.9**	67	**25.7**	105	**31.4**									126	**29.6**	173	**31.6**
3. See the doctor for severe chest pain		92	**55.8**	120	**56.3**	158	**60.5**	189	**56.6**									250	**58.7**	309	**56.5**
4. Do not see a doctor, even when severe pain		7	**4.2**	10	**4.7**	11	**4.2**	8	**2.4**									18	**4.2**	18	**3.3**
Total		16	**10**	21	**10**	26	**10**	33	**10**									42	**10**	547	**10**

		5	**0**	3	**0**	1	**0**	4	**0**							6	**0**		**0**
		n.s.				n.s.										n.s.			
1. I regularly checked by a doctor	2017					7	**9.9**	11	**11.2**	10	**12.2**	14	**10.1**	7	**5.8**	10	**6.5**	24	**8.8**	35	**9.0**
2. See the doctor for any chest discomfort						29	**40.8**	32	**32.7**	33	**40.2**	42	**30.4**	34	**28.1**	65	**42.5**	96	**35.0**	139	**35.7**
3. See the doctor for severe chest pain						31	**43.7**	53	**54.1**	35	**42.7**	73	**52.9**	74	**61.2**	71	**46.4**	140	**51.1**	197	**50.6**
4. Do not see a doctor, even when severe pain						4	**5.6**	2	**2.0**	4	**4.9**	9	**6.5**	6	**5.0**	7	**4.6**	14	**5.1**	18	**4.6**
Total						71	**100**	98	**100**	82	**100**	138	**100**	121	**100**	153	**100**	274	**100**	389	**100**
						n.s.				n.s.				n.s.				n.s.			

Discussion:

In our study, almost 100% of the male and female population aged 25-64 believed it probable "to develop a serious illness within the next 5-10 years" in 1988. The proportion of people who considered the possibility of getting sick "highly possible" was higher in women but in the subsequent years of observation - in older men. In the younger age groups, there was some parity in opinions; with the exception of 2013-2017 when women aged of 35-44 years noted a high probability of getting sick more often than men. In 1988, men were more likely convinced in their ability “to avoid serious illness if took actions in advance?” compared to women. These sex differences in responses were erased in subsequent years of observation. Nowadays, the frequency of categorical answers “yes, it is definitely possible to avoid diseases” has increased, especially in younger age groups. Growing optimism about the potential of medicine to prevent all or most heart disease was found among young men in 2013 and 2017. In comparison, women are more balanced about the possibilities of medicine to prevent heart disease. Recent surveys had shown that women are more likely to comply with preventive measures in relation to primary prevention than men [9]. These differences were noted in the following areas: collection of information about health, hygiene, sexual safety, sun protection. In terms of health style modification, men showed greater commitment to physical activity and active leisure. Prevention of cardiometabolic diseases by affecting hemodynamic parameters, lipids and inflammation was not associated with the presence of gender differences. Despite the fact that the use of health care resources in relation to mental health did not differ between men and women, some researchers indicate their lower use among men [9]. About 100% of men and women in the open population aged of 25-64 years believe that a “preventive health check” is useful. Over 29-years of observation, this proportion did not change significantly. However, the share of those convinced that preventive checks were definitely beneficial was slightly higher among women, increasing in 2013-16 and 2016-17.

The higher level of awareness among women is

consistent with data from other studies, in which women pay more attention to collecting information about health and have a greater focus on preventive steps [9, 10]. However, real actions in this direction, according to the data obtained, show a discrepancy. Only 6.8% of the male and 3% of the female population aged 25-64 were regularly checked by a doctor in 1988. An equal proportion (67%) of men and women sought medical help only in case of “severe chest pain” and 11-12% would not go to a doctor even with severe pain. In older age groups, these proportions were smaller and declined slightly by 2003-05. At the same time, men were 6% more likely than women to report that they consult a doctor in case of any chest discomfort.

The younger age groups in 2013-16 showed an increase in those who were regularly checked by a doctor, but their share was still low - 9.6% in both gender. But the frequency of visits for any chest discomfort increased about 30% in both age groups. At the same time, the number of those who did not consult a doctor even with severe pain decreased.

In 2016-2017, the frequency of regular health check-ups exceeded the 10% in the 35-44 and 45-54 age groups, but remained at a low level in the oldest 55-64 age group - 6%. In comparison with the previous observation periods, the frequency of visits to the doctor in case of any chest discomfort increased up to 40%. The proportion of people who did not seek help for severe heart pain did not exceed 6-6.5%. In the structure of responses, gender equality was noted in all age groups in the period 2013-2017. Insufficient health care utilization by women compared to men with coronary syndrome is typical for developing countries [11]. The high variability and presence of atypical symptoms, as well as the high pain threshold, partly explain the gender differences in cardiologist attendance [12].

Conclusions:

1. About 100% male and female population aged of 25-64 years considered it probable "to develop a serious illness within the next 5-10 years" in 1988. This proportion has not changed significantly by 2017.
2. In 1988, men more often than women certainly believed that they would avoid serious illness if they took actions in advances. In subsequent years of observation these sex differences in responses were erased.
3. Belief in the power of medicine to prevent all or most of the heart disease was present among young men in 2013 and 2017. In comparison with them, women are more balanced about the preventive possibilities of medicine.
4. Despite the fact that 100% of men and women in the open population 25-64 years find "preventive health screening" useful, only 6.8% of males and 3% of females were regularly checked by a doctor in 1988. In 2016-2017, the frequency of regular health checks exceeded the 10% in middle-aged groups.
5. An equal proportion of men and women - 67% sought medical help only in case of severe chest pain, and 11-12% would not go to a doctor even with intense pain; by 2017, their share had decreased to 6.5%.

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