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Assessing Tarnobrzeg Cardiology Clinic patients' level of knowledge of coronary heart disease risk factors

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Key words: Cardiology

ABSTRACT

The aim of this paper is to present the level of knowledge of Tarnobrzeg Cardiology Clinic patients of the risk factors of coronary heart disease. The data required to support the paper's statement was collected from 100 patients. Diagnostic survey was used as the method. A questionnaire with a set of 22 questions was used as the research tool.

The obtained results show that the level of knowledge is not satisfactory and the patients require further education. It was found that gender is not a factor differentiating the level of knowledge. However, urban residents are better informed than rural residents. It was

concluded that the older the patient is the lower level of knowledge of coronary heart disease risk factors he or she possesses. Also, patients with higher education are more knowledgeable.

The research presented in the paper indicates there is an increased need of educating the population on coronary heart disease risk factors, promoting cardiovascular diseases prevention and engaging the medical community in spreading the knowledge.

INTRODUCTION

Coronary heart disease is a wide-ranging concept. It includes all stadiums of myocardial ischemia no matter what the pathomechanism is. It consists of a wide range of symptoms which result from the disproportion between nutrients and oxygen supply, and the current demand of the heart. [1]

Coronary heart disease concerns stadiums of myocardial ischemia which are related to changes in coronary arteries. It can be divided into stable coronary stadiums (stable angina, cardiac syndrome X, myocardial bridges presence-related angina) and acute coronary stadiums (with ST elevation, and non-ST elevation). [2]

The cause of coronary heart disease is atherosclerosis of minor, medium and major coronary arteries. It is characterized by lesions in the vascular walls, lipid accumulation, inflammatory infiltration, and fibrosis. Usually there is a connection between the heart disease and lesions in the vascular walls. Only in certain cases it cannot be proven that he connection exists, despite employing a wide range of diagnostic methods. Local heart damage without lesions in the coronary arteries can be given as an example. [3]

Risk factors are parameters that help in predicting the manifestation of a cardiovascular disease. A parameter should be cheap and easy to mark. It is also important to confirm its effect on the lesion formation. The reduction of risk factors and replacing them with healthy behaviors are extremely important in disease prevention and treatment. Especially in case of the coronary disease because of the relationship with the risk factors. [4]

An important element of forming a healthy lifestyle is the awareness of the fact that the choices one makes can minimize the negative impact of the disease. [5]

The aim of primary prevention is to keep a disease from starting through behaviors beneficial for one's health. When a disease does start, to limit the risk factors is to prevent the further development of the disease. It is the so-called secondary prevention. The knowledge of the disease possessed by the patients is the base of success of primary and secondary prevention. [6]

The aim of the paper is evaluation of patients' level of knowledge of coronary disease risk factors with Tarnobrzeg cardiology clinic patients as the sample group.

THE MATERIAL AND THE METHOD OF THE RESEARCH

Diagnostic survey was used as the method for the purposes of this paper. The method is *"a range of theoretically justified conceptual (theoretical) and instrumental (practical) actions spanning the whole research process whose aim is to solve a specific scientific problem."* [7]

The diagnostic survey, also known as survey questionnaire, or sample group survey, covers all types of social phenomena which are relevant to educational purposes, and the state of social awareness, viewpoints, opinion of particular groups, the intensification and trends of the studied phenomena.

A poll was the technique used in this paper. A poll is *"a technique of collecting information that relies on filling in (usually without any assistance) specially prepared questionnaires, usually highly standardized, in (or more frequently without) presence of the interviewer."* [7]

The poll was anonymous. Members of the polled group were ensured they would remain anonymous. The poll's questionnaire allowed for doing the research in a fast and easy way and gathering the information required for the purposes of this paper.

The questionnaire contained 22 questions. It was designed using the current data in literature. The poll constituted of two parts. The first part concerned personal data, e.g., gender, age, location, education. The second part contained questions about the level of knowledge of coronary heart disease risk factors.

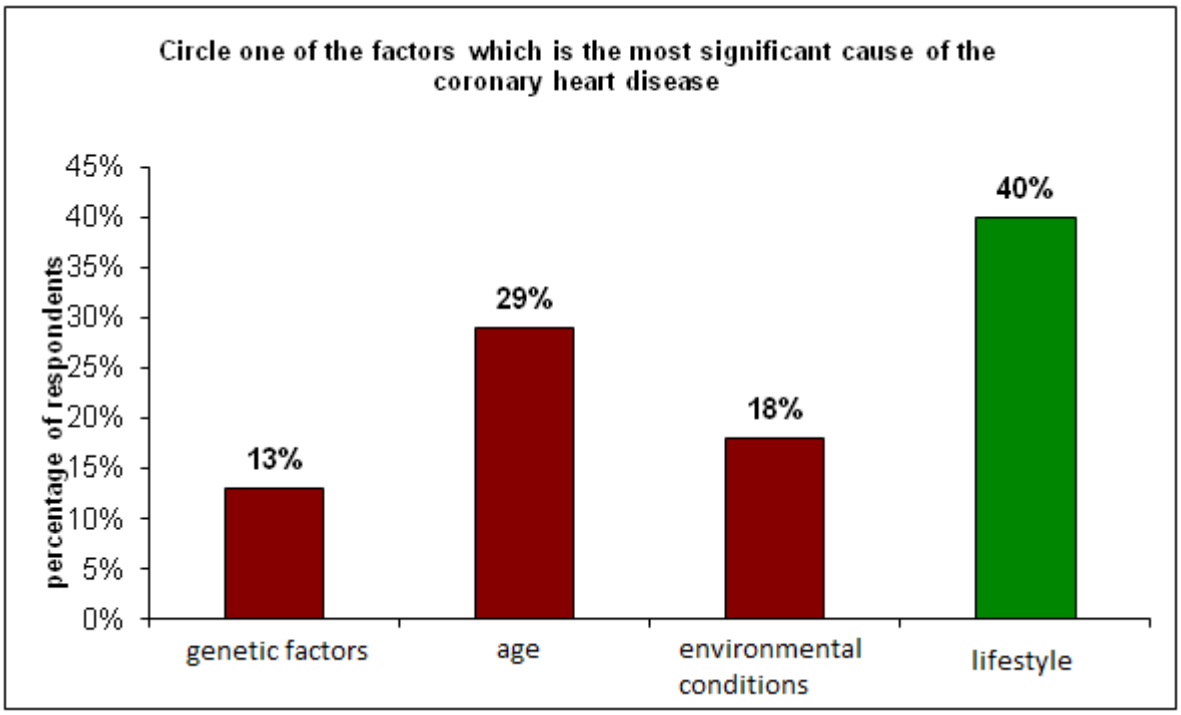
CHARACTERISTIC OF THE POLLED GROUP

The research was performed between March and April 2015 among patients of the Cardiology Clinic in Tarnobrzeg. The pollen group constituted of 100 people. They were informed about the aim and rules of the research. The patients filled in the questionnaire individually, not using any scientific sources. Consent was the only requirement needed to take part in the poll.

In the polled group the numbers of women and men were equal. There were 50 women (50%) and 50 men (50%). Among the polled group there were 3 people (3%) aged between 21 and 40, 7 people (7%) aged between 41 and 50, 27 people (27%) aged between 51 and 60, 34 people (34%) aged between 61 and 70, and 29 people (29%) aged over 70.

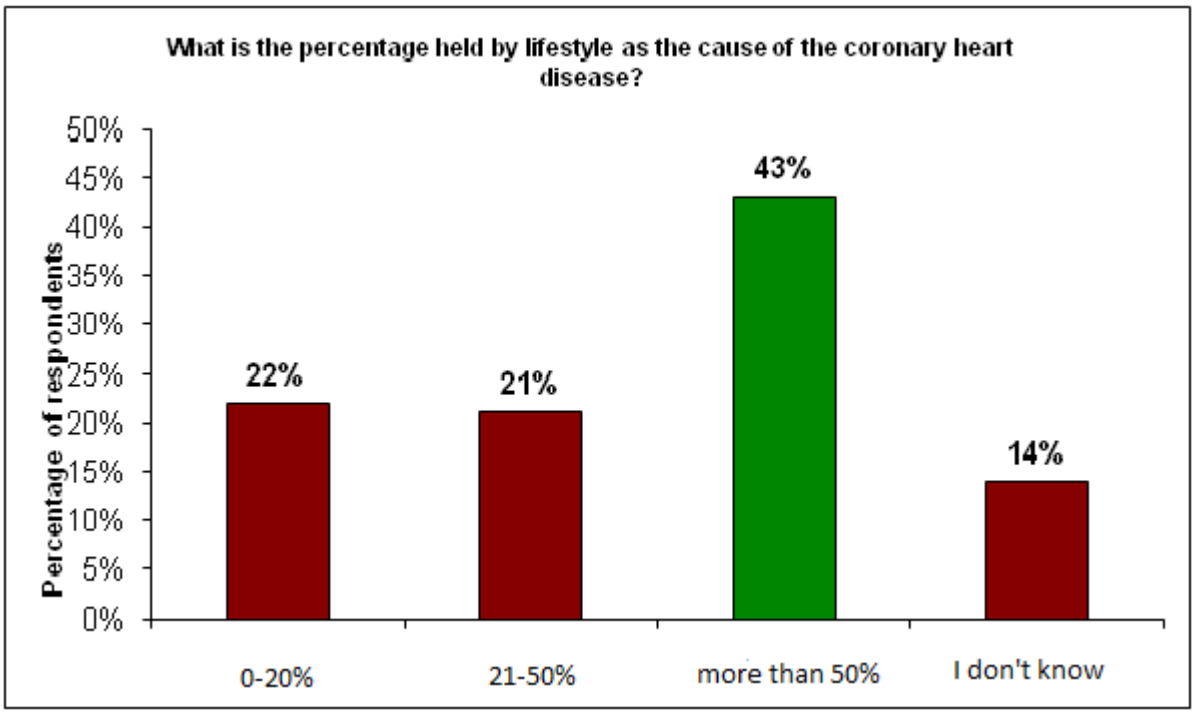
The largest group of people, 28 (28%), had higher education, 25 people (25%) had secondary education, 24 people (24%) had basic education, and 23 people (23%) had vocational education.

49 people (49% of the polled group) were urban residents, and 51 people (51%) were rural residents.



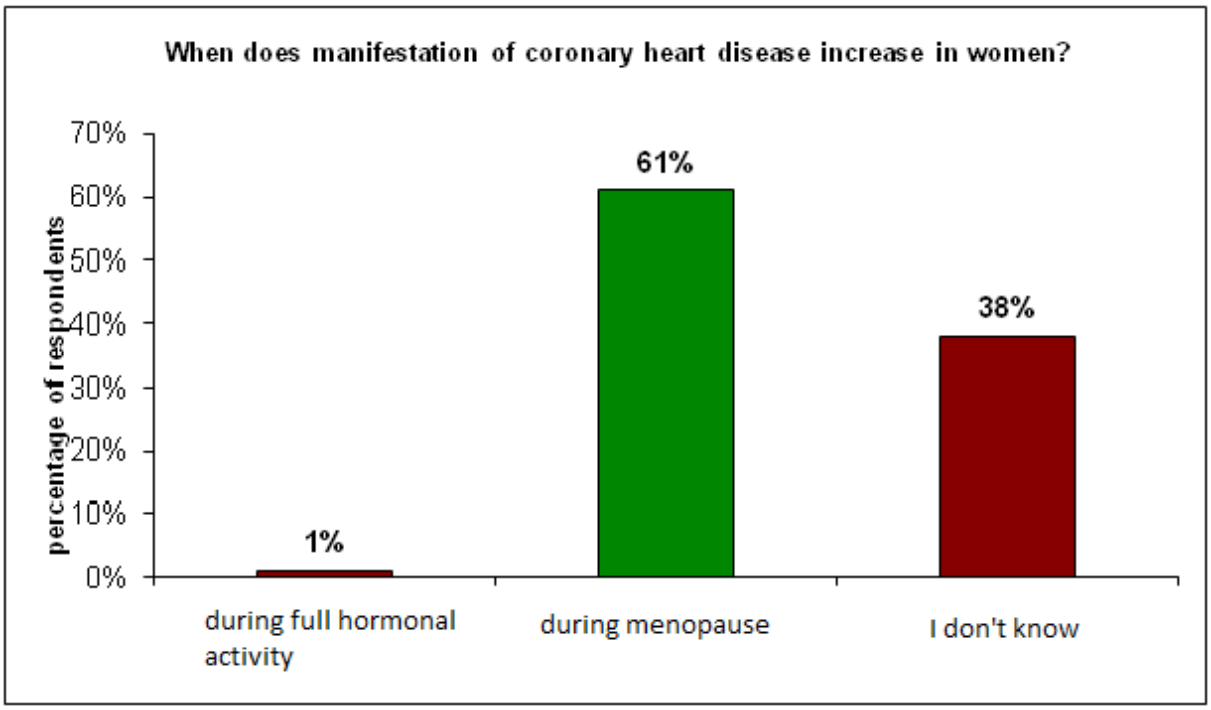
Graph. 1. The most significant cause of the disease according to the polled group.

It can be noticed that according to the respondents the most significant coronary heart disease factor was lifestyle (40% of the polled group), then age (29% of the polled group), environmental conditions (18%), and genetic factors (only 13%).



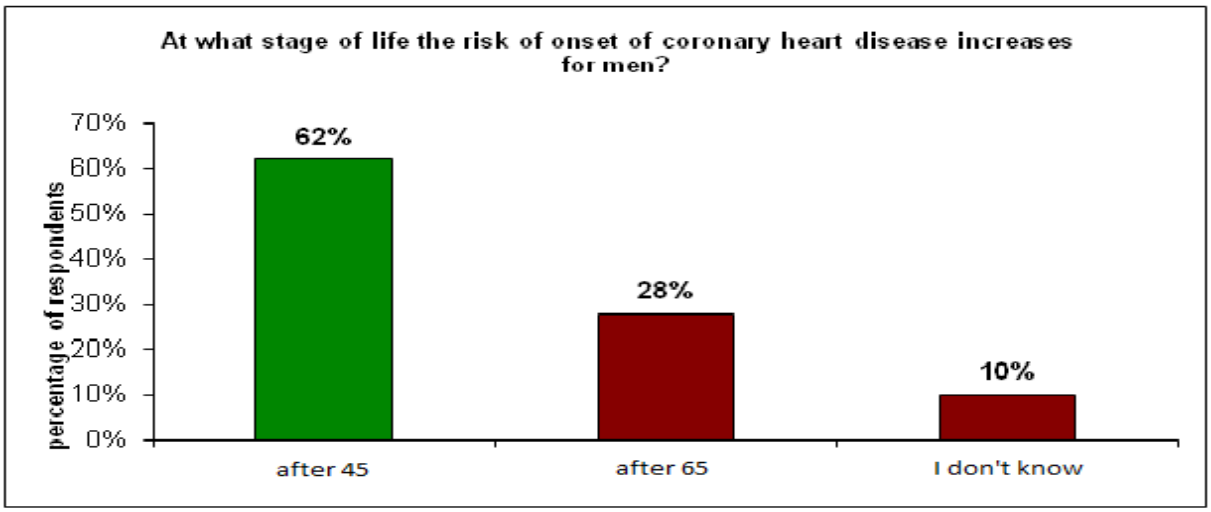
Graph. 2. The percentage held by lifestyle as the cause of the coronary heart disease according to the polled group.

43 respondents (43% of the polled group) considered lifestyle as the most significant factor of the coronary heart disease because the percentage held by it was more than 50%, 22 respondents (20%) considered it to be less than 20%, and 21 respondents (21%) considered it to be between 21% and 50%. 14 people (14%) did not respond.



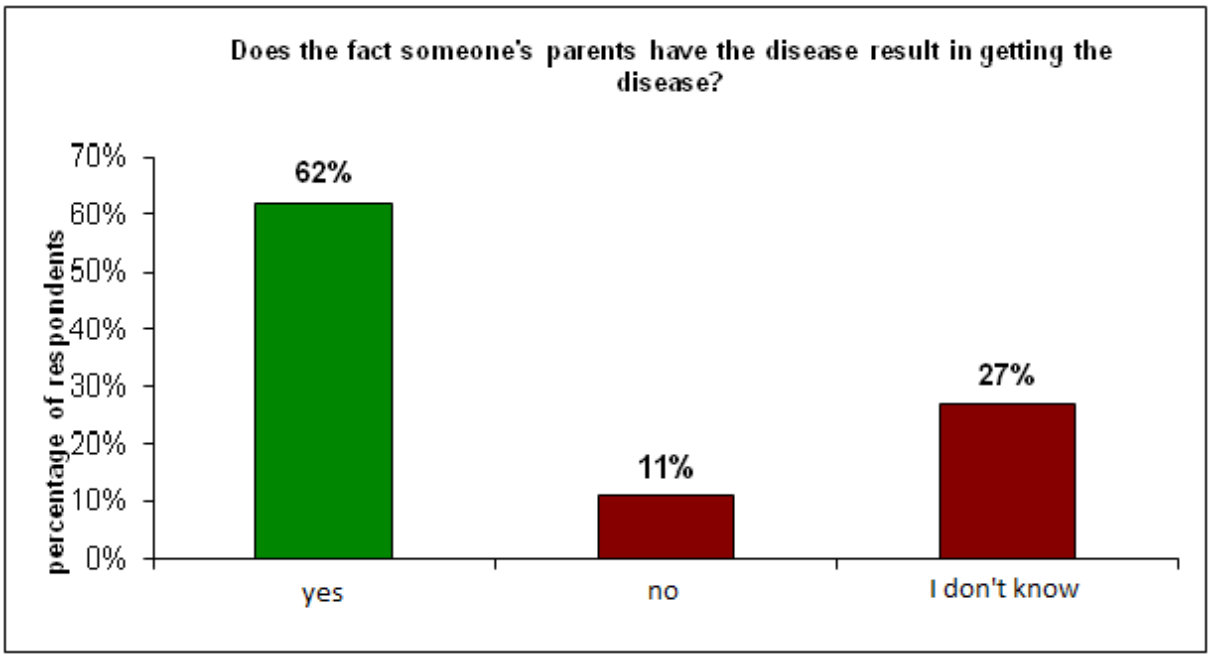
Graph. 3. Period of increased manifestation of coronary heart disease in women according to the pollen group.

The period of increased manifestation of coronary heart disease in women takes place during menopause according to 61 respondents (61%). Only one respondent (1%) believed it took place during full hormonal activity. As many as 38 respondents (38%) did not know.



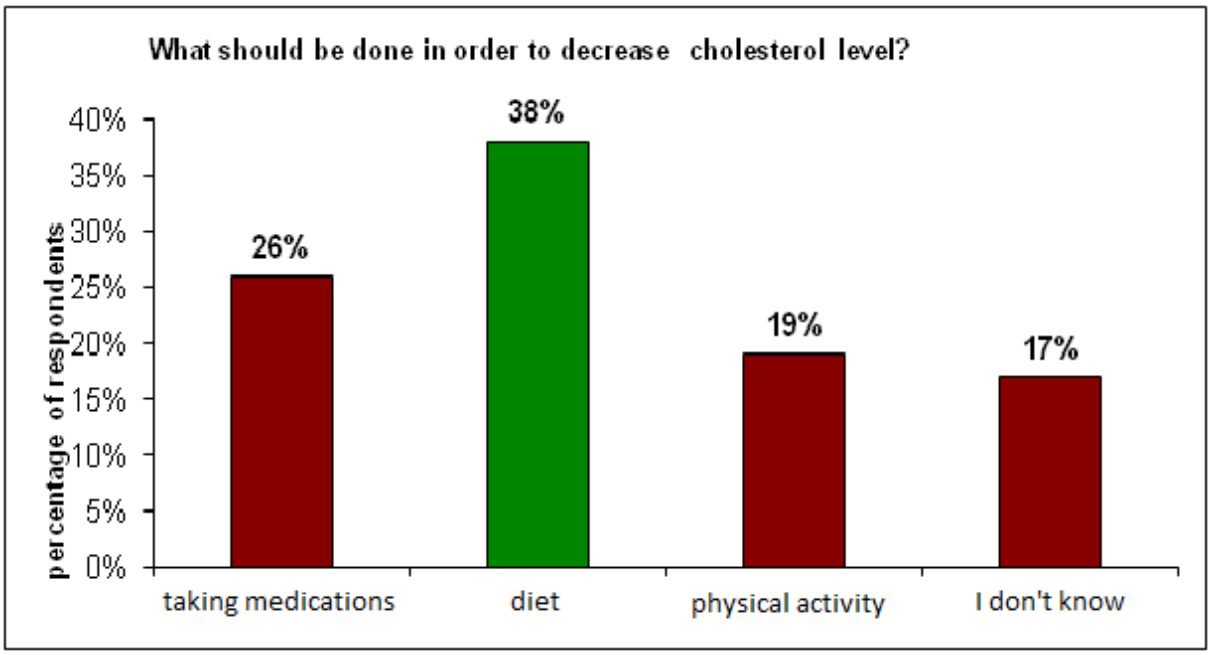
Graph. 4. Period of life when the risk of the manifestation of disease is the highest for men according to the polled group.

For men the risk of manifestation of coronary heart disease increases when they are over 45 according to 62 respondents (62%), over 65 according to 28 respondents (28%). 10 respondents (10%) did not know. None of the respondents considered it to be under 45.



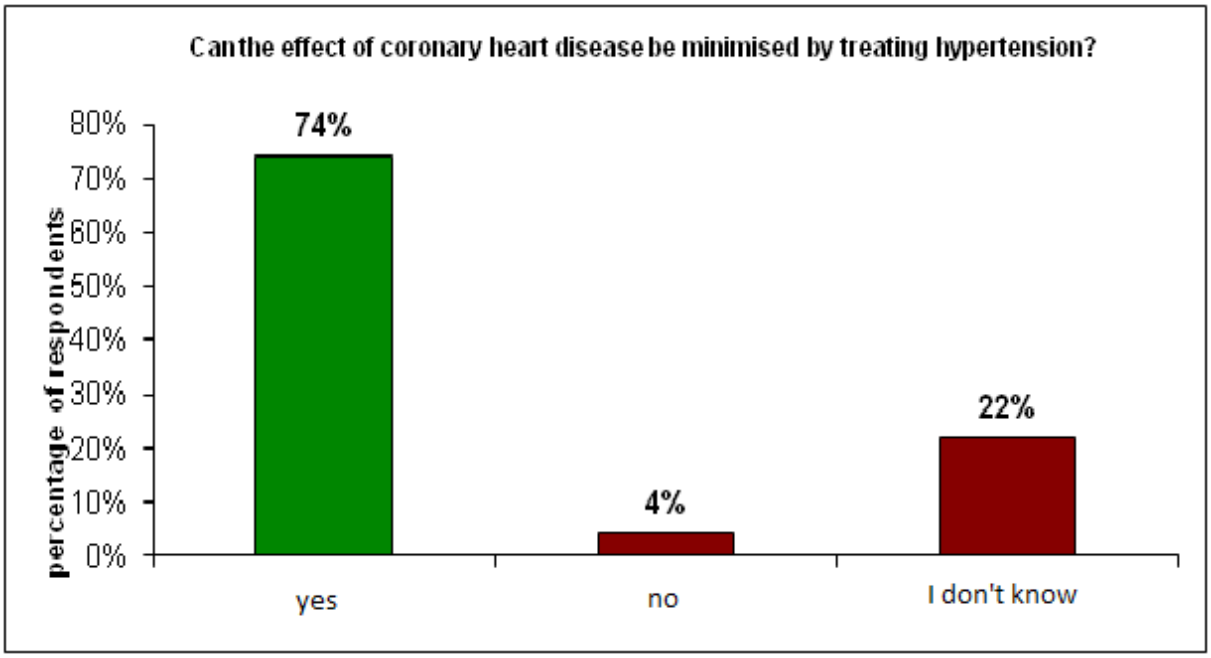
Graph. 5. Relation between the fact someone's parents have the disease and the possibility of getting the disease according to the polled group.

62 respondents (62%) believed that the fact someone's parents have the disease results in getting it, 11 respondents (11%) did not believe so, and 27 respondents (27%) did not know.



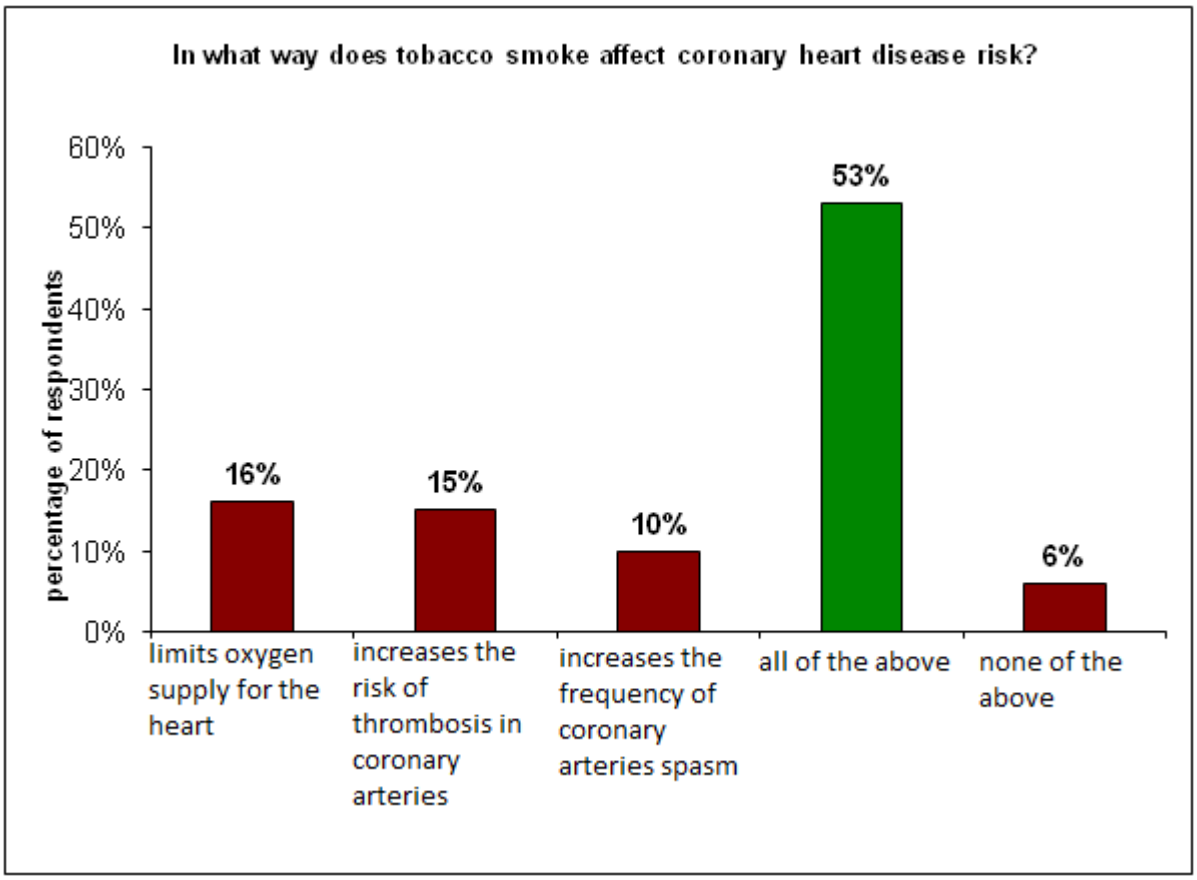
Graph. 6. Activities that decrease cholesterol level according to the polled group.

38 respondents (38%) believed that in order to decrease cholesterol level one should follow a proper diet, 26 respondents (26%) believed one should take medication, 19 respondents (19%) believed one should engage in physical activity, and 17 respondents (17%) did not know.



Graph. 7. Treating hypertension and minimizing the effects of coronary heart disease according to the polled group.

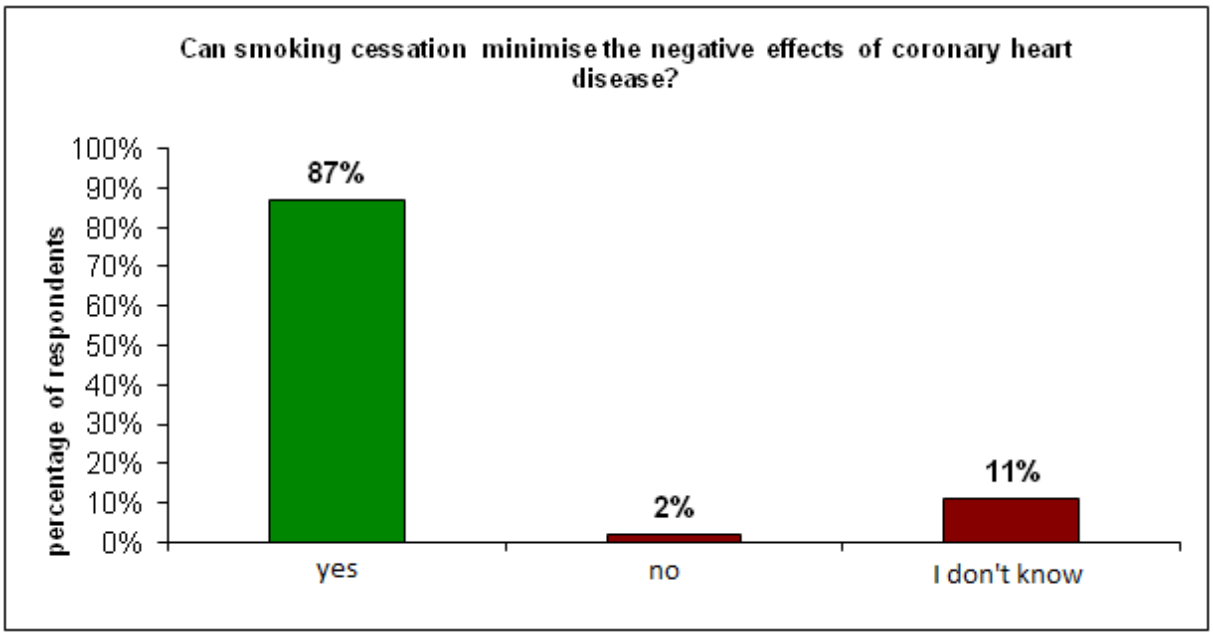
74 respondents (74%) believed treating hypertension can minimize the effects of coronary heart disease, 4 respondents (4%) did not believe so, and 22 respondents (22%) did not know.



Graph. 8. The impact of tobacco smoke on manifestation of coronary heart disease according to the polled group.

53 respondents (53%) thought tobacco smoke affects the risk of the disease as it limits oxygen supply for the heart, increases the risk of thrombosis in coronary arteries, and increases the frequency of coronary arteries spasm.

16 respondents (16%) thought tobacco smoke only limits oxygen supply for the heart, 15 respondents (15%) believed it increases the risk of thrombosis in coronary arteries, 10 respondents (10%) thought the smoke increases the frequency of coronary arteries spasm. 6 respondents (6%) did not believe tobacco affects the risk of coronary heart disease in any of these ways.



Graph. 9. Smoking cessation and minimizing the negative effects of coronary heart disease according to the polled group.

The largest number of respondents, that is 87 people (87%), believes smoking cessation can minimize the negative effects of coronary heart disease, only 2 respondents (2%) do not believe so, and 11 respondents (11%) do not know.

Gender x knowledge level

The subgroups of women and men are large (each counting 50 people, which is >30), so the accuracy check of normal distribution of continuous variables can be omitted, thanks to employing the central limit Theorem. Student's t-test for independent samples was performed in order to compare the average results for the level of knowledge in the groups of men and women.

Table 1. Group Statistics.

Gender		N	Mean	Standard deviation
Knowledge level	Woman	50	0,60	0,36
	Man	50	0,51	0,33

Table 2. Test for independent samples.

		Levene's test for Equality of Variances		Test for independent samples		
		F	Significance	t	Df	Significance (bilateral)
Knowledge level	Equality of variances assumed	2,60	0,110	1,32	98	0,190
	Equality of variances not assumed			1,32	97,17	0,190

There is no statistically significant difference between the average results in the groups of males and females (t(98)=1,32 ; p=0,190). Gender is not a factor which differentiates the level of knowledge in a significant way.

Place of residence x knowledge level

Table 3. Statistics for the groups.

Place of residence		N	mean	Standard deviation
Knowledge level	Urban residents	49	0,84	0,21
	Rural residents	51	0,28	0,19

Table 4. Test for independent samples.

		Levene's test for Equality of Variances		Test for independent samples		
		F	Significance	T	df	Significance (bilateral)
Knowledge level	Equality of variances assumed	1,38	0,243	14,00	98	0,000
	Equality of variances not assumed			13,96	95,53	0,000

There is a statistically significant difference between the average results of knowledge level in the groups of urban residents and rural residents ($t(98)=14,00$; $p<0,001$), urban residents' knowledge level (M=0,84, SD=0,21) is higher than the one of the rural residents (M=0,28, SD=0,19).

Age, education x knowledge level

Age and education are variables measured on the ordinal scale. The correlation between them and the level of knowledge was calculated using Spearman's rank correlation coefficient (code values for the categories of age and education).

Table 5. Correlations.

			Knowledge level
Spearman's rho	Age	Correlation coefficient	-0,68
		Significant (bilateral)	0,000
		N	100
	Education	Correlation coefficient	0,87
		Significance (bilateral)	0,000
		N	100

There is a moderate negative correlation between age and knowledge level ($r=-0,68$; $p<0,001$), the older someone is, the lower their knowledge level is.

There is a strong positive correlation between education and knowledge level ($r=0,87$; $p<0,001$), the higher the education level is, the higher the knowledge level is.

DISCUSSION OF THE RESEARCH FINDINGS

It has been stated that the group of the polled respondents consisted of 100 people and the number of women and men was equal (50% women, 50% men). The most numerous group constituted of people aged 61-70 (34%) and rural residents (51%). The education level of the respondents was taken into account in the research, the most numerous group had higher education (28%).

According to the National Health Programme for 2007-2015 lifestyle turned out to be the most significant health-affecting factor. Its contribution was estimated as 50%. Other factors included environmental conditions (approx. 20%), genetic factors (approx, 20%), health care activities (approx. 10%) [8]

The percentage scale was used to assess the impact of particular factors on the manifestation of the disease in this paper. 40% of the respondents chose lifestyle as the most significant factor in the etiology of the described disease. The majority of the polled patients (43%) showed good level of knowledge of the topic when they were asked to assess the impact of lifestyle on the manifestation of the disease. The increased level of knowledge can be attributed to the fact that the traditional model of medicine has been changed from curative care to holistic care. Nowadays, patients are not only passive customers of medical services but they are also encouraged to actively take care of their health.

196 patients with coronary heart disease and 170 patients without the disease were asked to take part in the research on coronary heart disease risk factors and prevention conducted by J. Kowalski et al at The Faculty of Rehabilitation and the Department of Internal Diseases of the Teaching Hospital No. 5, Medical University in Łódź. In the first part of the research blood pressure, lipid profile, blood sugar during fasting, and BMI of the

patients were analyzed. In the second part of the research the level of knowledge of coronary disease risk factors and the need to eliminate them in secondary prevention declared by the patients was assessed. The researched group showed little knowledge of non-modifiable coronary disease factors. Only 6,6% of the respondents from the group of patients with the disease , and 16,5% of the respondents from the group without the disease considered gender as a risk factor. [9].

In the research reported in this paper better results were achieved. To assess patients' level of knowledge of the non-modifiable risk factors, first knowledge of the impact of gender on periods of increased manifestation of the disease was assessed. The fact that men who are over 45 suffer from the disease more often was considered as significant by 62% of the polled group. To evaluate the results it needs to be noted that gender is a coronary disease risk factor for men under 45 and the increased manifestation in men over 45 is related to the combination of various factors, such as smoking tobacco, and hyperlipidemia.

Assessment of recognizing menopause as a risk factor gave slightly worse results. 61% of the polled group chose the factor.The factor is less recognizable in comparison to the risk of the manifestation of the disease in men.

In this research, the ability to discern between modifiable and non-modifiable factors was also evaluated. 62% of the polled group believe that the fact someone’s parents have the disease can result in getting it. Therefore, non-modifiable risk factors are assigned much importance. However, the simultaneous attributing non-modifiability to modifiable risk factors, such as hypertension, hypercholesterolemia, nicotine addiction, decreased physical activity, diabetes, and increased nervousness, remains contrary to the common knowledge of the topic.

Educational activities are required to be performed. The polled patients, describing their knowledge of activities which counteract hypercholesterolemia, believe such activities are very important for prevention and treatment. These activities include diet, pharmacotherapy, and physical activity. Results are similar to the ones achieved by J. Kowalski et al. In the research, 68% of the patients with coronary heart disease and 47% without the disease declared following the rules of coronary heart disease prevention, as well as counteracting hypercholesterolemia. Additionally, 20% of the first group and 38% of the

second group did not follow any prevention rules. The significance of fact that knowledge of lipid disturbances prevention was declared by the patients is diminished when it is confronted with the prevalence of habits, including eating habits. This state of affair requires educational initiatives. [9]

Another studied risk factor whose treatment is significant in minimizing coronary heart disease risk is hypertension. In 2002 more than 3000 people aged 18-94 took part in the research named 'Hypertension in Poland plus lipid disturbances and diabetes' conducted by NATPOL PLUS. Hypertension was diagnosed in 29% of Polish population. Satisfactory efficiency of the therapy was reported only by 10% of men and 14% of women.

In their research, Ścibor and Organa analyzed the lifestyle of patients with hypertension. 89 patients of Hypertension and Cardiology Clinic of the Medical Center of the Jagiellonian University took part in the research. The research shows no patients with hypertension engage frequently in physical activity, follow the right diet, including low intake of calcium, potassium and magnesium in favor of high intake of salt. These data shows the most basic rules of hypertension prevention are not followed. It can suggest a low level of knowledge of risk factors [10].

This research shows there is a high level of knowledge of negative impact of hypertension and the necessity of preventive actions. It has been noted that a significant number of patients who were asked about pro-health activities indicated pharmacology. Hypertension pharmacology remains one of the most important ways of treatment. Again, there is a need of initiative to promote healthy lifestyle, including low salt and high intake of calcium, magnesium and potassium diet, as well as engaging in physical activities, maintaining a healthy weight, and smoking cessation.

Another significant coronary disease risk factor analyzed in this research was smoking cigarettes. In 2009 Kara et al conducted a research in Institute of Public Health of the Social Medicine Department of the Medical University in Poznań. 100 patients with coronary heart disease took part in the research. 93 of the respondents believed nicotine addiction has a negative impact on health, and 17 of them kept smoking even so. Most of the researched group members decided to quit on smoking. Awareness of the impact of nicotine on

manifestation of coronary heart disease was given by them as the main factor which helped them in their decision to quit. [11]

This research has shown that 47% of the polled group did not know exactly what impact tobacco smoke has on manifestation of coronary heart disease. Nevertheless, respondents were aware that smoking cessation could help in minimizing the negative impact of the coronary heart disease, similarly as in Kara's research. The similarity of the results indicates there is a need to promote educational initiatives within this area.

To sum up, it needs to be emphasized that the patients of Cardiology Clinic in Tarnobrzeg should become subjects of numerous educational campaigns as they lack knowledge of coronary heart disease risk factors which leads to inaccurate prevention of the disease. The whole process should begin with the GPs, who should promote healthy lifestyle, prescribe medications, and monitor the health condition. Patients need additional advice, especially on diet, nicotine and rehabilitation.

CONCLUSIONS

1. The research suggests the level of knowledge of coronary heart disease risk factors is not satisfactory. It can have impact on prevention of the disease.
2. The polled group's level of knowledge differs depending on place of residence, age and education.
3. The research shows that gender is not a differentiating factor for the knowledge level.
4. It has been noted urban residents have higher level of knowledge than rural residents.
5. The research shows the older someone is, the lower their level of knowledge is.
6. Respondents with higher level of education have higher level of knowledge than those with lower level of education.
7. The research shows medical personnel needs to be engaged in cardiovascular diseases education and prevention.

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