X. SUMMARY

Cardiovascular diseases (CVD), despite the implementation of modern diagnostics and therapy in recent years, are still the main cause of deaths in Poland and in the world.

The treatment of coronary artery disease depends on the stage of changes in the coronary vessels and the clinical picture. In chronic coronary syndromes, the key is to identify risk factors, change unhealthy lifestyle choices and implement preventive pharmacotherapy. There is no doubt that the reasons for further improvement of CVD treatment outcomes are the improvement of knowledge about the causes of CVD and the implementation of the principles of prevention. Unfortunately, despite numerous educational programs and the promotion of preventive examinations, the majority of Polish society does not know the principles of CVD prevention, nor can they name the most important symptoms of a heart attack or stroke, and do not know lifesaving emergency numbers. Lack of knowledge of these factors is responsible for the delay in reporting to a doctor and thus reducing the possibility of providing quick help, especially in acute coronary syndromes. The MCAPRI research program, which was carried out in 2012-2020 in the Małopolskie Voivodeship, concerned comprehensive preventive CVD intervention. In addition to the general population intervention (media campaigns) concerning the entire population of the Małopolskie Voivodeship, its scope covered especially high-risk patients (MWR), school youth (MEM) and the population of professionally active workers (MEP). The subject of my doctoral dissertation was (is?) the assessment of the results regarding the role of education in the prevention of CVD within the employed population workforce (MEP). ?

Research objectives

1. Assessment of the knowledge of risk factors for cardiovascular diseases and pro-health behaviors in the actively (currently) working population of the Małopolskie Voivodeship.
2. Evaluation of the effectiveness of a one-time training in the prevention of cardiovascular diseases conducted for the actively (currently) working population of the Małopolskie Voivodeship.
3. Analysis of the knowledge of risk factors for cardiovascular diseases and pro-health behaviors depending on age, sex, place of residence, education, type of work in the population of employees of the Małopolskie voivodship.

4. Assessment of the effectiveness of stationary and remote training (conducted during the SARS-COV2 pandemic in 2020).
5. Comparison of the effectiveness of preventive training, carried out under the M-CAPRI Program, conducted in the group of school students (Youth Education Module), the population of employees (Employee Education Module) and patients (High Risk Module). Research methodology

The research was carried out at MEP as part of the Health Program for the Prevention and Detection of Cardiac Diseases in the Population of Małopolska Province (Małopolska Cardiovascular Preventive Intervention study M-CAPRI), which was approved by the AOTM and the Bioethics Committee. During the years 2017-2020, MEP recruited 64 workplaces (District Units), and the research was finally carried out in 51 workplaces with which contracts for the implementation of the research were signed. The training was conducted by preventive teachers (doctors) who, after training and passing knowledge tests, obtained the certificate of prevention teacher at MEP. The establishments qualified for the program were randomly selected from the a registered list of the office of the Małopolskie Voivodeship, taking into account the parity? (uniformity, consistency, equivalence) of the program implementation in all subregions of the voivodeship. Ultimately, the statistical analysis included 1,633 professionally active employees who gave their informed consent to the research, participated in training and completed the initial and final questionnaires. All trainings in 2017-2019 were conducted in stationary workplaces. However, in 2020, due to the Sars-Cov-19 pandemic, most of the training was carried out remotely (online). In 2020, remote training was conducted for 341 employees, and stationary for 59 stationary. The analysis of the results was carried out on the basis of questionnaires checking the knowledge of CVD risk factors, the knowledge of clinical symptoms of myocardial infarction and stroke, the implentation of the correct- (appropiate) behavior in the case of these symptoms, as well as accessing emergency numbers. Thanks to the consent obtained from the co-researchers of the M-CAPRI program, additional studies were conducted comparing the knowledge and results of preventive training in the population of patients with high risk of CVD (MWR) and school adolescents (MEM).

Results

The attendance rate for training in MEP was over 96%, while in MWR it was 86% among patients of cardiology departments with CAD and 90.5% for patients of primary care without

CAD. 1,633 employees were qualified for the study, 71.2% of whom were women. The percentage of women in 2020 was slightly lower (67.3%; p = 0.03). Significant differences were found in the place of residence and education in the group participating in training in 2020, more lived in the countryside and less in cities, and more with higher education 77.5% vs. 65.5%; (p <0.001). In total, 41.8% of rural residents and 52.8% of urban, poviat or voivodship capitals were included in the study. These proportions changed significantly in 2020 and amounted to, respectively: inhabitants of rural areas (52%) and 48% of cities and capitals of poviats or voivodeships; (p <0.001). In the survey, the incidence of coronary heart disease was declared by 2.8%, myocardial infarction - 0.7%, stroke - 0.7%, diabetes - 2.3%, arterial hypertension - 5.8%, influenza 12.2% and people vaccinated for influenza only 7.5%. The test results, before the training, indicate a low level of identification of CVD risk factors and pro-health behaviors, including knowledge of the symptoms of heart attack, stroke and emergency calls. After the training, a significant increase in correct answers was observed, regardless of gender and age, place of residence, education, and work performed. The knowledge of the guidelines of scientific societies in the field of dietary recommendations had also improved.

In our study, the consumption of vegetables and fruit 5-6 times a week was declared by only 17% and 19.4%, respectively. The only significant difference (p = 0.049) noted in the case of fruit consumption (3-4 times a week) in favor of employees in the pandemic year (18.7% vs. 22.0%). The results of the analysis of the knowledge of CVD risk factors are (and/was?) the number of correctly mentioned CVD risk factors after stationary training increased only by +2.0 ± 3.0 and after remote training by as much as +6.4 ± 3.7 (p <0.0001). After the training, the knowledge of the symptoms of myocardial infarction and stroke improved significantly in each study group. The need to call an ambulance service was declared in MEP, MWR and MEM, respectively: 94.4%, 92.5% and 78.4%.

Limitations

The M-CAPRI program does not provide for the repetition of training sessions and follow-up, and therefore the MEP also did not perform distant studies checking knowledge, e.g. after one year and / or after several years. In the employee education module (MEP), there was an overrepresentation of women (over 70%).

In 2017-2019, the training was conducted in stationary workplaces and in the year of the pandemic (2020) remotely (on-line). Despite the change in training methodology, a significant increase in correct answers was obtained for all analyzed parameters, regardless of the method of training. It should be emphasized that the effectiveness

of remote training was higher compared to stationary training. However, it cannot be unequivocally indicated that remote training should be widely recommended. This certainly requires further research and checking (follow-up), for example, whether the questionnaires checking knowledge before and after the training were filled in by oneself. Undoubtedly, the significant improvement in knowledge obtained immediately after one-time training indicates the need to consolidate this knowledge and continue comprehensive preventive intervention and evaluate long-term results.

Conclusions

1. The group of professionally active workers (MEP) is characterized by a low knowledge of risk factors for cardiovascular diseases, dietary recommendations, symptoms of heart attack and stroke, and a high percentage of wrongdoing in the event of life-threatening conditions.
2. The study group (MEP) was also characterized by a low knowledge of risk factors for cardiovascular diseases occurring in the workplace. The most frequently mentioned were: stress, extended working time, air pollution and shift work (occupational hazards), and the least frequent were physical factors (noise, vibrations) and chemical factors (paints, solvents).
3. One-time preventive training is an effective method of educating employees, after which a significant improvement in the knowledge of risk factors for cardiovascular diseases, dietary recommendations, symptoms of heart attack and stroke, and a significantly higher percentage of correct response in life-threatening conditions was found. In the vast majority of cases, both before and after the training, there were no significant differences in the recognition of risk factors for cardiovascular diseases, dietary recommendations, symptoms of heart attack and stroke, and the management of their occurrence, depending on gender, age, place of residence and type of disease. work performed. A higher percentage of correct answers was found in employees with higher education and white-collar workers.
4. Remote preventive training (on-line) is as effective as in-house training, but the remote training was much more accurate in the answers provided.
5. Preventive training in the population of professionally active employees (MEP), school youth (MEM) and patients (MWR) of the Małopolskie voivodship is an effective method of improving the knowledge and combating risk factors for cardiovascular diseases and improving the knowledge and response to symptoms of a heart attack and

stroke . However, despite participation in training, attention is drawn to the still relatively lower percentage of correct answers in the group of school students (MEM) and a high percentage of the lack of knowledge of life threatening symptoms and emergency numbers in the group of high-risk patients (MWR).