

## Education in cardiovascular disease prevention

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### Related article

by Cicha-Mikołajczyk et al.

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Favorable lifestyle changes to reduce well-known cardiovascular disease (CVD) risk factors, i.e., smoking, blood cholesterol, and physical activity explained most of the decline in coronary heart disease (CHD) mortality in Poland between 1991 and 2005 [1]. After 2005, despite the rapid increase in access to modern treatments for acute CHD, the decline in CVD mortality has slowed down [2]. At that time, studies in CHD patients and the general population showed that the decline in exposure to main risk factors was slower than expected, and the prevalence of obesity and diabetes increased further. Only a small proportion of the general population remained free of risk factors, and most of the rest had risk factors uncontrolled [3, 4].

Prevention, which aims to reduce CVD risk factors, is the most effective and economical method to decrease the incidence and mortality from CVD [5]. In CVD prevention, health education is a key element for both the high-risk group and the general population. The recent European guidelines on CVD prevention emphasize the importance of media to educate the population about smoking, physical activity, diet, and alcohol abuse, in addition to educating patients and high-risk individuals by clinicians and general practitioners [5]. The education should provide cardiovascular knowledge, motivate people to change their lifestyles and adhere to medical recommendations. A Polish study confirmed that not knowing risk factors increases the risk of death. However, a lower level of knowledge of risk factors was associated with higher risk of death only in men with secondary or higher education [6].

Knowledge of risk factors is likely related to higher education. On the other hand, a high

level of education is associated with a higher social and economic status and with better access to medical care. Low social status has to be regarded as an independent CVD risk factor, and the relationships between education, low social status, and CVD risk were also confirmed in Poland [5, 7]. Nevertheless, a lower CVD risk observed in people with higher education can be, partially at least, attributed to better knowledge about the disease, its symptoms, and risk factors. Knowledge of risk factors is also related to other important factors, including female sex, family history of CVD, and residence in rural areas and small towns [8]. In an experimental population study, which was carried out in the Małopolska Voivodeship, people who watched educational TV programs on CVD prevention had better knowledge of CVD risk factors, such as hypertension, diabetes, obesity, smoking, low physical activity, and unhealthy diet. However, watching such programs was not equally popular across the entire population. Women, older people, people with low education, and those with a personal or family history of CVD were more likely to watch educational programs [9].

The article “Disparities in knowledge of cardiovascular risk factors and prevention methods related to cardiovascular status and functional health literacy. Poland 2020–2021” by Alicja Cicha-Mikołajczyk et al. [10] shed more light on this complicated net of interrelations by underlining the effect of health literacy on CVD knowledge. Health literacy, which is defined as “a person’s ability to read and comprehend information and instructions in health settings” [11], can be expected to correlate with social status, and, in particular, with education and may mediate the impact of socioeconomic status on CVD risk.

The article presented partial results of the WOBASZ II Study, which involved 2827 adult residents from 8 voivodeships (Dolnoslaskie, Kujawsko-pomorskie, Lubuskie, Opolskie, Podkarpackie, Warminsko-mazurskie, Wielkopolskie, Zachodniopomorskie) [10]. The findings are, in particular, important for health education and prevention. The authors postulate that screening for health literacy should be part of prevention programs to better understand patient needs, reduce health inequalities, and increase effectiveness. The postulate seems reasonable, but such screening may not be feasible with the current organization and funding of CVD prevention in Poland. Even though there is a large body of evidence that comprehensive and structured educational and rehabilitation programs have great potential to reduce exposure to CVD risk factors and deaths, no such educational program was adopted in clinical practice on a larger scale, despite the 2016 recommendation by the expert panel of the Polish Cardiac Society and the Agency for Health Technology Assessment and Tariff System [12].

The European guidelines for CVD prevention recommend integration of nurse-coordinated prevention programs into healthcare systems, and nurses, together with general practitioners and allied health professionals, should deliver those programs for high-risk patients within primary care [5]. In Poland, prevention is an important part of the mission of individual and group nursing practices [13]. However, no state-funded CVD prevention program was addressed to nurses at the national level. The lack of a comprehensive structured educational program might explain why the effectiveness of the CVD prevention program supported by the Polish National Health Fund was below expectations [14]. Also, no such program was adopted in the nationwide system of coordinated care after myocardial infarction (MI), which imposed on hospitals the responsibility for patient care for up to 1 year after hospitalization for MI [12].

Nevertheless, education of CHD patients and high-risk individuals is recommended by international and Polish scientific societies [5, 12], and comprehensive and structured programs might appear as local initiatives. In such circumstances, the suggestion to prepare separate programs, both in primary and secondary prevention, for various sectors of the population under care according to their level of health literacy would be the next step.

### Article information

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### References

1. Bandosz P, O'Flaherty M, Drygas W, et al. Decline in mortality from coronary heart disease in Poland after socioeconomic transformation: modelling study. *BMJ*. 2012; 344:d8136, doi: [10.1136/bmj.d8136](https://doi.org/10.1136/bmj.d8136), indexed in Pubmed: [22279114](https://pubmed.ncbi.nlm.nih.gov/22279114/).
2. Wojtyński B, Goryński P. Health situation of the Polish population and its determinants [in Polish]. National Institute of Public Health. 2020: 15–607.
3. Pająk A, Jankowski P, Zdrojewski T. The burden of cardiovascular disease risk factors: A current problem. *Kardiol Pol*. 2022; 80(1): 5–15, doi: [10.33963/KP.a2022.0018](https://doi.org/10.33963/KP.a2022.0018), indexed in Pubmed: [35137945](https://pubmed.ncbi.nlm.nih.gov/35137945/).
4. Jankowski P, Kosior DA, Sowa P, et al. Secondary prevention of coronary artery disease in Poland. Results from the POLASPIRE survey. *Cardiol J*. 2020; 27(5): 533–540, doi: [10.5603/CJ.a2020.0072](https://doi.org/10.5603/CJ.a2020.0072), indexed in Pubmed: [32436589](https://pubmed.ncbi.nlm.nih.gov/32436589/).
5. Visseren F, Mach F, Yvo M, et al. 2021 ESC Guidelines on cardiovascular disease prevention in clinical practice. *Eur Heart J*. 2021; 42(34): 3227–3337, doi: [10.1093/eurheartj/ehab484](https://doi.org/10.1093/eurheartj/ehab484), indexed in Pubmed: [34458905](https://pubmed.ncbi.nlm.nih.gov/34458905/).
6. Waśniowska A, Kozela M, Podolec P, et al. Knowledge of cardiovascular disease risk factors and the risk of death in middle-aged residents of Krakow. *Kardiol Pol*. 2017; 75(4): 386–394, doi: [10.5603/KP.a2016.0180](https://doi.org/10.5603/KP.a2016.0180), indexed in Pubmed: [27995599](https://pubmed.ncbi.nlm.nih.gov/27995599/).
7. Kozela M, Polak M, Stepaniak U, et al. Changes in socioeconomic status as predictors of cardiovascular disease incidence and mortality: a 10-year follow-up of a Polish-population-based HAPIEE cohort. *Int J Environ Res Public Health*. 2022; 19(22), doi: [10.3390/ijerph192215411](https://doi.org/10.3390/ijerph192215411), indexed in Pubmed: [36430130](https://pubmed.ncbi.nlm.nih.gov/36430130/).
8. Waśniowska A, Kopec G, Szafraniec K, et al. Assessment of knowledge on cardiovascular disease risk factors by postal survey in residents of Małopolska Voivodeship. *Małopolska Cardiovascular Preventive Intervention Study (M-CAPRI)*. *Ann Agric Environ Med*. 2017; 24(2): 201–206, doi: [10.5604/12321966.1228400](https://doi.org/10.5604/12321966.1228400), indexed in Pubmed: [28664694](https://pubmed.ncbi.nlm.nih.gov/28664694/).
9. Waśniowska A, Kopec G, Podolec J, et al. Relationship between knowledge of cardiovascular disease risk factors and watching educational television materials. *Małopolska Cardiovascular Preventive Intervention Study (M-CAPRI)*. *Pol Arch Intern Med*. 2017; 127(9): 608–613, doi: [10.20452/pamw.4061](https://doi.org/10.20452/pamw.4061), indexed in Pubmed: [28724878](https://pubmed.ncbi.nlm.nih.gov/28724878/).
10. Cicha-Mikołajczyk A, Piwońska A, Borowiec A, et al. Disparities in knowledge of cardiovascular risk factors and prevention methods related to cardiovascular status and functional health literacy, Poland, 2020–2021. *Kardiol Pol*. 2023; 81(7–8): 700–707, doi: [10.33963/KP.a2023.0119](https://doi.org/10.33963/KP.a2023.0119), indexed in Pubmed: [37222248](https://pubmed.ncbi.nlm.nih.gov/37222248/).
11. Okan O, Bauer U, Levin-Zamir D, et al. *International Handbook of Health Literacy. Research, practice and policy across the lifespan*. Policy Press 2019. 2019.
12. Jankowski P, Gąsior M, Gierlotka M, et al. Coordinated care after myocardial infarction. The statement of the Polish Cardiac Society and the Agency for Health Technology Assessment and Tariff System. *Kardiol Pol*. 2016; 74(8): 800–811, doi: [10.5603/KP.2016.0118](https://doi.org/10.5603/KP.2016.0118).
13. Act amending the Act on health care institutions, the medical profession, the profession of a nurse and midwife, on higher education and on the amendment of some other acts of December 10, 1998 [in Polish]. *Journal of Laws of 1998*. No. 165. Item 1115.
14. Pająk A, Szafraniec K, Janion M, et al. Polkard study group. The impact of the Polish national Programme of Cardiovascular Disease Prevention on the quality of primary cardiovascular disease prevention in clinical practice. *Kardiol Pol*. 2010; 68(12): 1332–1340, indexed in Pubmed: [21174285](https://pubmed.ncbi.nlm.nih.gov/21174285/).