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Primary and secondary prevention of cardiovascular diseases on the local, regional and national level in Poland between 2012 and 2022: data and gaps analysis based on the opinions of the Agency for Health Technology Assessment and Tariff System

Short title: Primary and secondary CVDs prevention in Poland

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INTRODUCTION

Although the mortality resulting from cardiovascular diseases (CVDs) has been decreasing, CVDs are the leading cause of deaths in the Polish population. The standardized rates of death due to diseases of the circulatory system remain much higher than the European average [1].

Research confirms that cardiovascular prevention may significantly reduce the most common modifiable cardiovascular risk factors [2–5]. Prevention is recommended as the most effective and economical method to mitigate the morbidity and mortality from CVDs [6, 7].

Numerous Polish studies confirm the positive effects of introducing the pro-health education, risk factors control and clinical interventions [3, 8], but data allowing for the assessment of cardiovascular prevention programs organized on the local, regional and national government level are limited and fragmented [9].

The objective of our study was to collect and assess the available data and build a map allowing for the evaluation of preventive local, regional and national government activities related to CVDs based on the opinions and recommendations of the Agency for Health Technology Assessment and Tariff System (AHTATS). At the regional and local level government authorities have been implementing health policy programs (HPPs). Their goal is to identify specific health needs and improve the health of targeted groups of patients in particular regions of Poland. Detailed guidelines for the preparation of HPPs are specified in legal regulations [10]. Before being launched to selected populations, the HPP projects are required to receive a positive opinion from the AHTATS.

MATERIAL AND METHODS

The study covered all the 2335 opinions addressing HPPs issued by the president of the AHTATS in the years 2012–2022. From this group, 238 opinions were identified and analyzed as concerning the prevention of CVDs. Each such document contained a complex evaluation related to the health problem of the target group, expected goals and effects, range of intervention, health technology assessment of clinical and educational aspects of particular programs and a proposed method of monitoring and evaluation. Negative opinions were excluded and one program was disabled due to the shortage of information. 136 documents were selected for further analyses. Each HPP was analyzed in terms of selected variables that are presented in Supplementary material, *Table S1*. Health policy programs implemented on the basis of the recommendations of the AHTATS President were excluded from the study due to the lack of complete data illustrating the years 2012–2022 and missing information on whether they were implemented. The AHTATS website makes available solely the list of recommendations starting in 2019 and solely two programs addresses the prevention of cardiovascular diseases. The present study also excluded programs financed by the Ministry of Health which do not have to be accompanied by opinions and are not implemented based on recommendations of the AHTATS President.

Statistical analysis

The distribution of the categorical features was presented as a number with a percentage, the numerical using the median with lower and upper quartile. All the calculations were performed using the IBM Corp. Released 2023. IBM SPSS Statistics for Windows, Version 29.0.2.0 (IBM Corp., Armonk, NY, US)

RESULTS AND DISCUSSION

The majority of the analyzed HPPs concerned primary prevention — 121 (89%), 12 HPPs addressed secondary prevention (8.8%) and 3 programs combined the elements of primary and secondary prevention (2.2%). The majority of applications were submitted by municipalities - 51 (37.5%), slightly fewer by counties and cities with county rights — 49 (36%). There were 31 applications submitted by voivodeships (22.8%), and 5 (3.7%) nationwide programs. In the field of primary prevention, the majority of programs consisted of municipal ones, and in the field of secondary prevention the voivodeship programs dominated. The majority of HPPs in primary prevention were planned in the Silesian Voivodeship, and in secondary prevention in the Kujawsko-Pomorskie Voivodeship (Figure 1 A–B). The most frequent period of implementation of the HPPs was 3 to 5 years — 85 cases (63%).

The estimated costs of individual HPPs differed, depending on the planned interventions and the expected duration of the HPP. Over PLN (Polish zloty) 321 million was appropriated for the primary prevention programs. In the case of secondary prevention, the total funds transferred amounted to over PLN 62 million. However, when analyzing the median amount of funds allocated to one HPP, the cost in the case of primary prevention was much lower (PLN 182 thousand) than in secondary prevention (less than PLN 1.6 million).

Almost 5 million people were expected to be included in the primary prevention programs. However, in the HPPs concerning secondary prevention, it was assumed to include over 38 thousand people. The median number of people per one HPP for primary prevention was 2570 thousand, while for secondary prevention it was 3035 thousand. In the case of primary prevention, the median unit cost per person was approximately PLN 83, while for secondary prevention — PLN 2020.

The largest number of HPPs were intended for adults — 85, including 26 HPPs with different age groups as the target group. The number of programs dedicated for children and youth amounted to 70 HPPs. 48 HPPs also included parents, and 7 included teachers and other school employees. In 37 HPPs, the target group were the older people over 65 years of age. Training for medical staff was also planned in 11 HPPs. In the primary prevention programs,

the largest target group included children and youth, and in the secondary prevention programs — adults.

In all the HPPs, an interview with the patient and/or anthropometric measurements were intended. Laboratory tests were planned in 56 HPPs (44.1%), and blood pressure measurements, ECG, ultrasound or CT scans were predicted in 49 HPPs (38.5%). Consultations with specialists were recommended in 123 (91.1%), educational workshops in 131 (97%), and physical exercises, including rehabilitation, in 18 (13.3%). Among the people implementing the HPPs, the most involved were nurses — in 88 HPPs (67.2%) and other specialists such as dietitians, psychologists, physiotherapists or health educators — in 81 HPPs (62.0%) (however, family doctors participated in 73 HPPs (55.7%), and medical specialists in 34 HPPs (26%). The number of health policy programs in the field of primary and secondary prevention changed over the analyzed period of time (2012–2022). In 2012, 19 opinions on CVDs prevention were issued. In 2015–2016 the number of opinions decreased more than twice, while from 2017 began to increase to over 20 per year, after which a decrease of less than 10 opinions per year was recorded again during the pandemic COVID 19.

AHTATS opinions addressing the drafts of the health policy programs were prepared on the basis of the assessment of the health technology and contained scientifically approved suggestions how to identify and manage each group of the diagnosed health risks related to CVDs. The analysed suggestions were based on the clinical guidelines or recommendations of the national and international medical scientific associations. HPPs, especially those related to primary prevention, have a great potential, however, they are not implemented equally in all parts of the country.

Limitations

We conducted the research, including records analysis, in all the official website resources of AHTATS, as well as of local, regional and national governments to find any institutional information related to the topic. During the data collection process we encountered a gap of data what resulted in the main limitation of the study. In consequence, we were not able to specify how many dedicated programmes that received positive reviews, were implemented into practice, completed and finally evaluated. From 136 selected opinions that we analysed in 2012–2022, we found information with a list of 34 reports, but their content — in the overwhelming majority — was not available. In consequence, we were unable to achieve and assess complex scientific evidence related to the effects of the launched preventive programmes. An additional limitation of the present analysis was taking into account solely one

source, i.e. the opinion of the President AHTATS, what resulted in our showing only a partial map of cardio-vascular diseases prevention, while the lack of available data on the recommendations in AHTATS the years 2012–2022 had largely made impossible creating a complex report on the subject.

CONCLUSIONS

The discussed problem remains unsolved and its result is a lack of reports summarizing and showing how and in to what extent local, regional and national governments are prepared to cope with the specified health CVDs risks in relation to particular regions in Poland. This is why we suggest intensifying monitoring the course and effects of prevention-related activities, especially at the local government level, due to the epidemiologic situation associated with CVD. Furthermore, we recommend creating a special platform with open access concentrating in one place all the final reports evaluating CVDs prevention programmes implemented by local, regional and national authorities. Without any tool or available clinically validated data, the planning and launching subsequent interventions will to a greater measure resemble random dispersed actions than the complex health policy transparent for many stakeholders in the entire health care system.

Supplementary material

Supplementary material is available at https://journals.viamedica.pl/polish_heart_journal.

Article information

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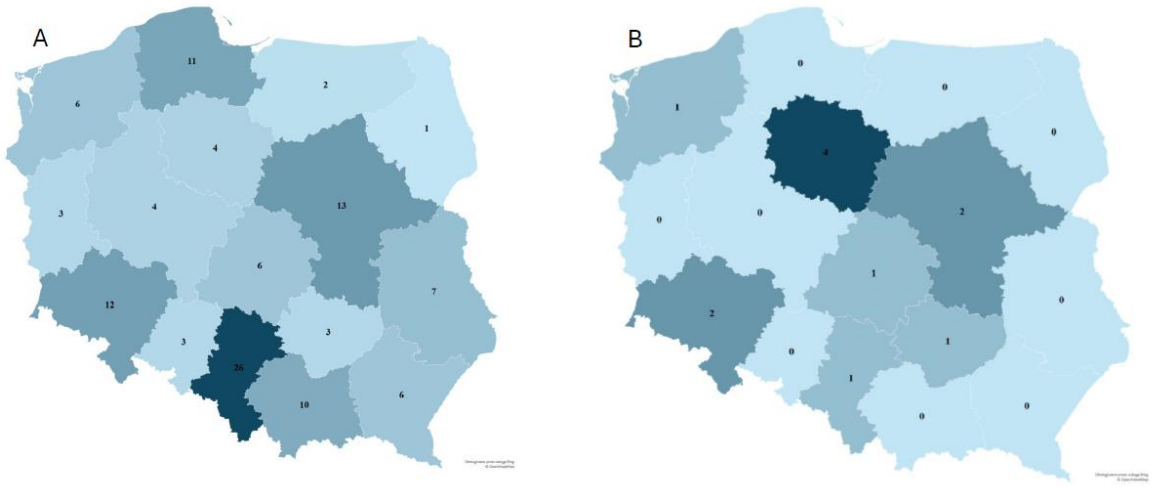

Figure 1. A. Distribution of primary prevention programs in particular regions of Poland. **B.** Distribution of secondary prevention programs in particular regions of Poland