

Public health students as health educators: health awareness and behaviours among primary care professionals and public health students conducting a health literacy intervention

Kinga Janik-Koncewicz¹, Katarzyna Rosik¹, Iwona Młóżniak¹, Mateusz Zatoński^{1,2}, Aleksandra Herbec¹, Witold A. Zatoński^{1,2}

¹Health Promotion Foundation, Nadarzyn, Poland

²European Observatory of Health Inequalities, the President Stanisław Wojciechowski State University of Applied Sciences in Kalisz, Poland

ABSTRACT

This article discusses the results from surveys on knowledge, behaviours, and satisfaction from the meeting conducted during the Health Promotion Foundation's (HPF) seminars with health professionals and public health students. Both groups were trained by the Foundation to speak with primary health patients about prevention of non-communicable diseases in order to improve health literacy and healthy behaviours of the Lower Silesia population. Students were trained to conduct "health workshops" with primary care patients. The results of the surveys showed that both public health students and health professionals have sufficient health knowledge and have healthier lifestyles than the general population. The slight differences between students and professionals can be explained by the diversity in the professions (public health students versus medical doctors, nurses, etc.) and the stage of the carrier (students versus professionals). The first section of the article explains the objectives of the HPF's project and the health literacy concept. The next section presents the methods of the analysis (describes the surveys and participants of the project) and discussed the results of the surveys. In the discussion the authors consider the differences between health professionals' and students' health behaviours and knowledge, and the potential role of both groups in improving health literacy in their communities. The article concludes that students can be good health educators and a valuable help in implementation of prevention and health-promotion activities.

KEY WORDS: public health students, health literacy, non-communicable diseases, intervention programme, prevention strategy, Lower Silesia.

ADDRESS FOR CORRESPONDENCE: Kinga Janik-Koncewicz, Health Promotion Foundation, 51 Mszczonowska St., 05-830 Nadarzyn, Poland, phone: +48 22 378 00 22, e-mail: biuro@promocjazdrowia.pl

INTRODUCTION

Non-communicable diseases (NCDs) are among the main health challenges worldwide. In Europe, five NCDs – diabetes, cardiovascular diseases, cancer, chronic respiratory diseases, and mental disorders – represent almost 90% of deaths and 80% of the disease burden [1]. They are related to common risk factors connected with lifestyle and modifiable behaviours: tobacco use, alcohol con-

sumption, poor nutritional habits, and physical inactivity. NCDs are preventable and largely controllable through interventions aimed at risk factors. Estimates indicate that around 80% of cardiovascular disease and diabetes, and 40% of cancer could be prevented in Europe if the above major risk factors were effectively tackled [2].

Primary prevention programmes, i.e. dissemination of the European Code Against Cancer in Poland [3], can

be useful in improving health awareness and changing health behaviours. Health literacy building is the crucial intervention in tackling NCDs. Health literacy determines knowledge, skills, competences, and potential of individuals to decide about their health and to make attempts to change behaviours [4]. Limited health literacy is linked with unhealthy behaviours and major risk factors for NCDs, and with increased risk of premature mortality and hospitalisation [5, 6]. A systematic review by Taggart *et al.* [7] evaluating the effectiveness of interventions used in primary care to improve health literacy suggested that both individual and group interventions in primary health care and community settings may be useful in improving health literacy, followed by behavioural changes.

A new programme aiming to build health literacy to address high premature mortality and unhealthy behaviours in the Polish region of Lower Silesia was prepared and introduced in 2018 by the Health Promotion Foundation. The detailed protocol for the programme has been reported previously [8]. Health professionals were recruited from primary care clinics, as well as public health students, to carry out programme implementation. Primary care professionals were involved in recruiting potential participants to take part in workshops and engaging primary care patients to build their health competences. Public health students committed to conduct “Health workshops” for primary care patients covering knowledge on NCDs and related risk factors, primary and secondary prevention strategies, relevant health literacy competencies, as well as communication skills. Before the phase of implementing the intervention, both health professionals and students took part in questionnaire surveys to evaluate their knowledge on relevant issues of health prevention, to learn their health behaviours, and to sum up opinions about the agenda of training and educational materials that have been prepared for patients. This paper presents the results from the surveys.

MATERIAL AND METHODS

Surveys were conducted in May 2019 during project seminars conducted for two groups: students of the Faculty of Health Sciences from the Medical University of Wrocław (hereinafter called “public health students”) and primary care health professionals of Lower Silesia involved in the project (hereinafter called “health professionals”). The surveys were anonymous. Each questionnaire contained a question about the gender and the year of birth of the respondent.

The structure of surveys for all participants was the same. Each participant received four short questionnaires, containing from 5 to 12 questions. Two questionnaires, aimed at evaluating initial and final participants’ knowledge, included three questions concerning causes of premature deaths in Poland, general health effects of

alcohol consumption, and tobacco dependence. These questionnaires were distributed at the beginning (as a preliminary survey) and at the end (as a final survey) of the seminar. Repeating a questionnaire containing the same questions allowed us to check the level of knowledge before and after the training. The third questionnaire, distributed before the seminar, included questions on health behaviours (tobacco smoking, eating fruit and vegetables, drinking alcohol, physical activity) and self-reported weight and height. This questionnaire was given to the participants at the beginning of the seminar in order to minimise desirability bias. The fourth questionnaire was aimed at summarising participants’ opinions about the seminar, the project’s educational brochure, as well as their readiness to change unhealthy lifestyle and promote healthy behaviours among family and friends. It contained questions about the satisfaction of participants (if the meeting was interesting, whether the knowledge gained during it was useful, how participants rated the knowledge, preparation, and professionalism of lecturers, and self-assessment of knowledge after the training).

RESULTS

Overall, 64 participants took part in the study: 34 health professionals and 28 public health students. The group of students included 25 women and five men in age range 20–46 years. The group of health professionals included 32 women and two men in age range 26–68 years.

HEALTH PROFESSIONALS

Health awareness

In the preliminary survey conducted before the seminar, most professionals gave correct answers to all questions (Fig. 1). When asked if cancer and cardiovascular disease (CVD) are the main causes of premature death in Poland, 89% of participants gave the correct answer. Eighty-one per cent of respondents correctly answered the question on whether there is a safe dose of alcohol. In the multiple-choice question regarding smoking, 81% indicated the first correct answer (tobacco smoking is as addictive as other drugs), and 53% indicated the second correct answer (tobacco smoking is a disease included in ICD-10). In the final survey conducted after the seminar the number of correct answers to the question about the main causes of premature death in Poland increased to 94%. All health professionals gave the correct answer to the question about whether there is a safe dose of alcohol. In the question about smoking, the number of indications of both correct answers increased (to 84% and 77%, respectively).

Health behaviours

As shown in Figure 2, 94% of health professionals eat fruit and vegetables at least once a day. When asked

“How many servings of vegetables and fruit and vegetable juices do you consume on average during the day?” 46% of health professionals indicated 3-4 servings and 37% indicated 1-2 servings. Only 3% declared consuming the recommended five portions of fruits and vegetables a day. Twenty-three per cent of health professionals indicated that they perform at least 30 minutes of physical activity every day. Thirty-seven per cent indicated that they exercise several times a week, and 20% a few times a month or less.

Forty-one per cent of the training participants had a body mass index (BMI) between 18.5 and 25.0 kg/m² (within the category of ‘normal’ body mass). The remaining 59% had a BMI above 25 kg/m² indicating excess weight. Eleven per cent declared they drank alcoholic beverages several times a week, while 3% were abstainers. Forty-three per cent of health professionals declared consuming alcohol several times a month, and the same percentage – several times a year. They declared that on the occasions when they drink alcohol their consumption is on average one portion (unit??). There were 86% of non-smokers in the group of health professionals and 14% of daily tobacco smokers. More than half of the study participants had undergone vaccination against influenza in the previous season.

Opinions on the seminar and seminar materials

Most of the health professionals considered the seminar interesting (94%), and all of them believed the knowledge they gained would be useful. All of the participants assessed the knowledge and competence of the seminar leaders as very good or good, and 93% assessed the quality of the educational brochure as very good. Eighty-four per-cent indicated that the seminar met their expectations in full, and 87% rated their knowledge after meeting as good or very good. Almost all of them

(94%) declared that they would implement the newly gained knowledge in their everyday life and 3% that they would not. The same percentage of health professionals (94%) declared that they would transfer the knowledge gained during the seminar to their family members.

PUBLIC HEALTH STUDENTS

Health awareness

In the preliminary survey conducted before the seminar, most students gave correct answers to all questions (Fig. 1). When asked about diseases that are the main causes of premature deaths in Poland, 75% of respondents gave the correct answer, and 82% correctly answered the question of whether there is a safe dose of alcohol. The students had greater difficulty in indicating the correct answer in the multiple-choice question regarding smoking. Ninety-three per cent of students indicated the first correct answer stated, while 43% indicated the second correct answer. In the final survey conducted after the seminar all participants gave a correct answer to the first two questions. It is worth noting that the questions regarding tobacco smoking still posed some difficulty to the participants, and the percentage of correct answers to the second answer (about smoking being a disease included in ICD-10) dropped by 8%.

Health behaviours

Eighty-two per cent of public health students indicated eating fruit and vegetables at least once a day (Fig. 2). About 40% of students declared eating 1-2 portions and about 1/3 of them 3-4 portions. Eighteen per cent of students declared eating the recommended five or more portions of fruits and vegetables every day. Eleven per cent of the respondents indicated smoking tobacco every day, and 14% occasionally. Two thirds of them did not smoke at all. Ninety-three per cent of students declared that they had

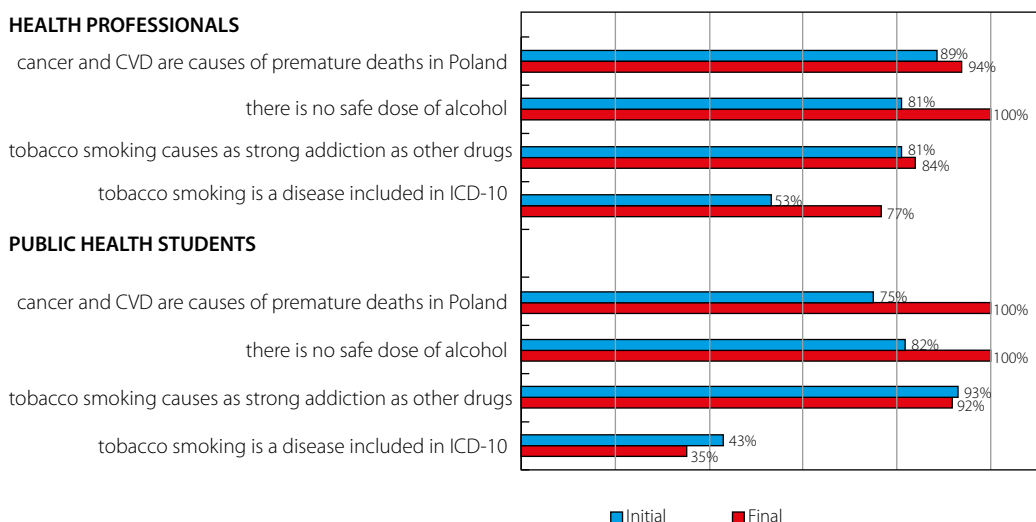


FIG. 1. Health knowledge before and after the seminar

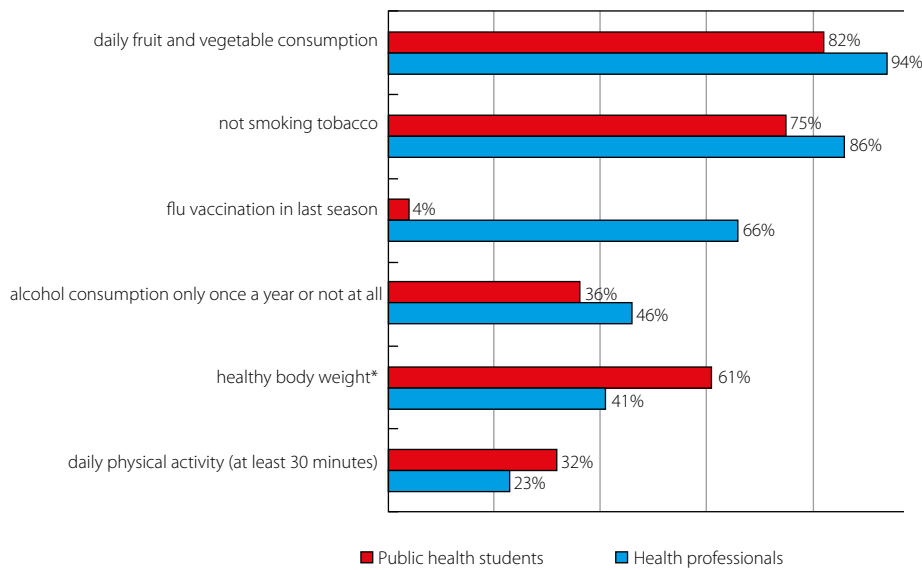


FIG. 2. Health behaviours among health professionals and public health students

not been vaccinated in the previous season. Fifty-four per cent of respondents indicated that they drank alcoholic beverages “several times a month”, and 7% that they were abstainers. Nobody indicated that they drank “every day”. In regard to the number of consumed portions (units?) of alcohol, the average was five. Most students had normal body weight, but 25% had a BMI above normal. Roughly equal numbers of respondents indicated that they perform at least 30 minutes of physical activity on a daily basis, several times a week, or several times a month, with a slight predominance of answers indicating several times a week (36%).

Opinions on the seminar and materials

Most students considered the meeting interesting and the knowledge gained useful. Ninety-six per cent of them assessed the knowledge and competence of the seminar leaders as very good or good, and 88% assessed the quality of the educational brochure as very good. The meeting met the expectations of 88% of students, and around 77% of them assessed their knowledge as good and very good. Most of them (88%) declared that they wanted to implement the knowledge gained during the meeting in their everyday lives, and 85% wanted to pass it on to their families.

DISCUSSION

Health behaviours of individuals are shaped by the level of their health literacy [9]. Research shows that people with lower levels of health literacy are more likely to demonstrate high-risk lifestyle behaviours and have poorer health outcomes [5, 6]. Thus, health literacy partly determines successful prevention and management of chronic diseases [6].

Interventions aimed at improving health literacy conducted in primary health care and community settings

can be useful in supporting long-term positive changes in health behaviours [7]. There is an urgent need to improve health literacy at the primary care level to address rising trends in morbidity and mortality from non-communicable diseases in Europe and in Poland [10]. The pillar of such initiatives should be primary and secondary prevention focused on the main risk factors such as tobacco smoking, inappropriate diet, alcohol drinking, and lack of physical activity. The literature points to successful experiences in health promotion and primary prevention strategies to improve community health [11, 12].

In primary care practice family doctors often have limited time to provide educational activities for their patients. Thus, other health professionals should serve as support for initiatives aiming to build health competencies in communities. However, De Cola *et al.* showed that while nurses would like to spend more time on delivering educational activities, this is impossible due to work overload and constraints affecting the time spent with their patients [13]. One of the innovative elements of the project developed by the Health Promotion Foundation is the engagement of public health students into these community activities aimed at building health competencies, creating a further source of support in a field in which the professionals' time is scarce. Students were recruited and trained in a “train the trainers” model to carry out educational workshops for primary care patients. The project gave students an opportunity to take part in activities that complemented knowledge gained during studies, and it improved their professional skills. Students were able to experience vocational activity during their education and undergo obligatory student training in a practical and active way. Engaging public health students into health literacy efforts helps to broaden the reach of the project and enables educational activities to be conducted in multiple primary care settings.

Health professionals and public health students are well positioned to support health promotion and prevention initiatives. Because the health literacy concept assumes a set of skills necessary to make healthy decisions, it is unquestionable that health educators should be characterised by a particularly high level of health competencies. Healthcare providers serve as health authorities for patients and should set a good example of healthy lifestyles. The presented analysis summarises health awareness and behaviours of primary care professionals and public health students in the Lower Silesia region. Most participants had good awareness of health issues, and their knowledge was complemented during the training. However, data from studies conducted in Poland show that health awareness among health professionals is still insufficient [14, 15]. This is similar in other country contexts. Research by Guner and Ekmekci (2019) showed that healthcare professionals in Turkey had limited awareness and knowledge on health literacy and its impact on their patients [16], and significant differences existed between nurses and physicians: awareness was higher among nurses than among physicians.

In the present study we observed that initial knowledge was comparable or slightly lower among public health students than among health professionals. Interestingly, in both the initial and final surveys more public health students than health professionals knew that tobacco smoking causes a strong addiction. However, students were less aware of tobacco smoking as a disease included in the International Classification of Diseases. This could be partially explained by their lower practical knowledge than that of medical staff. Considering the study of participants' health behaviours, health professionals were characterised by more frequent daily consumption of fruit and vegetables, and were more likely to be non-smokers and to be vaccinated against flu. Students declared more often healthy body weight and at least 30 minutes of daily physical activity.

Patterns of health behaviours in the Lower Silesia region are similar to the general Polish population. However, the groups included in this study might differ significantly from the wider population. Knowledge gained during their studies and professional practice gives health professionals and public health students grounds and motivation for healthy choices. Nevertheless, some of the findings of this study are alarming. While the percentage of smokers in the presented study is lower than in the Polish population (23% daily smokers in 2014 [17]), 11% of students and 14% health professionals still declared they are daily smokers. This points to the need for more education and information campaigns devoted to the influence of tobacco on health targeting these professional groups. Healthcare providers should be the first group in which tobacco smoking should be eradicated.

Even more concerning might be the fact that only 3% of health professionals and 7% of students declared they do not drink alcohol, in comparison with 28% of abstainers in the Polish population.

Daily consumption of vegetables and fruit was more common among the surveyed health professionals (94%) and public health students (82%) than in the Polish population (68%). Another point of special interest for public health is flu vaccination. In the presented study 66% of health professionals and 4% of public health students declared having been vaccinated against flu in the previous season. According to the latest data [18] the percentage of the Polish population vaccinated against flu in 2015 was around 2%. However, in comparison with 2014, this number decreased by almost 8%. The population coverage of flu vaccination is far lower than in many other European countries. According to the Centres for Disease Control and Prevention [19], flu vaccination coverage among healthcare staff in the season 2017-2018 in the United States was around 78% (the highest among physicians – 96%, pharmacists – 92%, nurses – 91%, nurse practitioners and physician assistants – 88%). While the present study showed a relatively high percentage of vaccinated health professionals, the percentage of vaccinated students was low (4%).

Primary care is the most common form of health service and contact with patients in Poland [20]. It constitutes the most personalised relationship between patients and healthcare providers, who are responsible not only for medical services but also for recognition of patients' health requirements and building their health competencies. According to a directive of the Minister of Health in Poland, both physicians and nurses (also midwives) are obliged to provide prevention and health promotion activities. However, such activities are time-consuming, and in practice are often neglected to make time for urgent diagnostic, treatment, and administrative procedures [21]. The presented study, summarising a pilot, innovative health literacy building initiative, suggests that public health students could serve as health educators in activities aimed at building health competencies of primary care patients. They have potentially sufficient capacity and skills to support health professionals in health promotion and prevention efforts. However, health competencies need to be first strengthened in all groups professionally connected with healthcare in Poland. These preliminary results are promising, but more research is needed to confirm them.

CONCLUSIONS

Public health students are well prepared to play the role of health educators for primary care patients. The knowledge on NCDs and related risk factors is part of their professional training during the studies, and participation in the seminar with HPF staff contributed to

broaden it theoretically and gave a guidepost of how to put it into educational practice. The analysis of the surveys conducted during the seminars revealed that: a) students have knowledge on NCD risk factors (tobacco and alcohol consumption) and healthy lifestyle principles, which is comparable with health professionals' lore/knowledge; b) students are open to gaining knowledge and developing professional skills. However, possibly because of lack of experience, they need a clear and unequivocal message, which was revealed by the mistakes in answers about tobacco; and c) public health students turn the knowledge into practice in their own lives (a high health literacy level). Their health behaviours, although they could still be improved, are much more conscious and proper than behaviours of the rest of the population. Moreover, students can fulfil the community need for health educators that cannot be fulfilled by overworked health professionals. The following step should be research on the influence of students' "health workshops" on the health literacy and behaviours of their participants.

ACKNOWLEDGEMENTS

The project has been financed by the European Social Fund within the Operational Programme Knowledge Education Development (grant number WND-POWR.05.02.00-00-0019/17). The intermediary institution overseeing the programme is the Polish Ministry of Health.

Authors would like to thank all partners of the project for their collaboration, especially: Mrs. Iwona Wójcik and Dr Jacek Krajewski, Lower Silesian Association of Family Doctors – Employers, Wrocław, Poland; Prof. Joanna Rosińczuk, Dr Dorota Kiedik and Dr Jolanta Grzebieluch, Wrocław Medical University, Poland.

DISCLOSURE

The authors declare no conflicts of interest.

References

1. WHO Regional Office for Europe. Noncommunicable disease. Available from: <http://www.euro.who.int/en/health-topics/noncommunicable-diseases/noncommunicable-diseases> (accessed: 11 May 2019).
2. WHO regional Office for Europe. Noncommunicable diseases. Fact sheets on sustainable development goals: health targets. Available from: http://www.euro.who.int/__data/assets/pdf_file/0007/350278/Fact-sheet-SDG-NCD-FINAL-25-10-17.pdf?ua=1 (accessed: 11 May 2019).
3. Janik-Konieczna K, Ritchie D, Blicharz U, Zatoński WA. Towards systematic evaluation of the European Code Against Cancer. Dissemination of the Code in Poland. *J Health Inequal* 2017; 3: 162-166.
4. Kickbush I. Think health: what makes the difference? *Health Promot Int* 1997; 12: 265-272.
5. Berkman ND, Sheridan SL, Donahue KE, et al. Low health literacy and health outcomes: an updated systematic review. *Ann Intern Med* 2011; 155: 97-107.
6. Dewalt DA, Berkman ND, Sheridan S, et al. Literacy and health outcomes: a systematic review of the literature. *J Gen Intern Med* 2004; 19: 1228-1239.
7. Taggart J, Williams A, Dennis S, et al. A systematic review of interventions in primary care to improve health literacy for chronic disease behavioral risk factors. *BMC Family Practice* 2012; 13: 49.
8. Janik-Konieczna K, Herbec A, Zatoński M, et al. Building health literacy in a Polish region: protocol for the POWER project in Lower Silesia. *J Health Inequal* 2018; 4: 27-30.
9. Von Wagner C, Knight K, Steptoe A, Wardle J. Functional health literacy and health-promoting behaviour in a national sample of British adults. *J Epidemiol Community Health* 2007; 61: 1086-1090.
10. WHO. Global status report on noncommunicable diseases. World Health Organization, Geneva 2014. Available from: https://apps.who.int/iris/bitstream/handle/10665/148114/9789241564854_eng.pdf;jsessionid=35A348154F928B1FBCBFC540D-C7614F9?sequence=1 (accessed: 18 April 2019).
11. Puska P, Pietinen P, Uusitalo U. Influencing public nutrition for non-communicable disease prevention: from community intervention to national programme – experiences from Finland. *Public Health Nutrition* 2002; 5 (1A): 245-251.
12. Nissinen A, Berrios X, Puska P. Community-based non-communicable disease interventions: lessons from developed countries for developing ones. *Bulletin of the World Health Organization* 2001; 79: 963-970.
13. De Cola P, Beton D, Peterson C, Matebani D. Nurses' potential to lead in non-communicable disease global crisis. *Int Nurs Rev* 2012; 59: 321-330.
14. Słońska Z, Borowiec A, Makowska M. Wiedza, postrzeganie własnych kompetencji oraz udzielanie porad z zakresu wybranych behawioralnych czynników ryzyka chorób układu krążenia wśród pielęgniarek podstawowej opieki zdrowotnej [Knowledge, perceived competence and provision of cardiovascular disease behavioural risk factors counselling among primary healthcare nurses]. *Pol Prz Kardiol* 2007; 9: 15-19.
15. Granowska H, Grabowska W, Grzegorzczak M, et al. Wiedza pielęgniarek podstawowej opieki zdrowotnej na temat klasyfikacji wartości ciśnienia tętniczego krwi oraz następstw nadciśnienia tętniczego [The knowledge of community nurses on the subject of classification of blood pressure and complications of high blood pressure]. *Pielęgniarstwo XXI wieku* 2010; 30/31: 51-55.
16. Guner MD, Ekmekci PE. A survey study evaluating and comparing the health literacy knowledge and communication skills used by nurses and physicians. *Inquiry* 2019; 56: 1-10.
17. Central Statistical Office. Health status of population in Poland in 2014. Statistical Information and Elaborations. Central Statistical Office, Warsaw 2016.
18. Wojtyński B, Goryński P (eds.). Sytuacja zdrowotna ludności Polski i jej uwarunkowania [Health situation of Polish popula-

- tion and its conditions]. Narodowy Instytut Zdrowi Publicznego – Państwowy Zakład Higieny, Warszawa 2016.
19. Influenza Vaccination Information for Health Care Workers. Available from: <https://www.cdc.gov/flu/professionals/health-careworkers.htm> (accessed: 13 May 2019).
 20. Baranowski J, Windak A. Optymalizacja polskiego systemu finansowania Podstawowej Opieki Zdrowotnej [Optimisation of Polish system of financing the Primary Healthcare]. Ernst & Young, Warszawa 2012: 14.
 21. Reznier A, Reznier W, Kosecka J. Edukator zdrowia w podstawowej opiece zdrowotnej jako szansa na podniesienie poziomu promocji zdrowia i profilaktyki w Polsce [Health educator in primary healthcare as the Chance for improvement of health promotion and prevention level in Poland]. *Probl Hig Epidemiol* 2013; 94: 407-412.

AUTHOR'S CONTRIBUTIONS

KJK, KR analysed data. KJK, KR and IM wrote the first draft of the article. All authors contributed in preparation of the final article.