ANALYSIS OF NURSES' KNOWLEDGE IN THE AREA OF PREVENTION OF CARDIOVASCULAR DISEASES

ANALIZA STANU WIEDZY PIELĘGNIAREK W ZAKRESIE PREWENCJI CHORÓB UKŁADU SERCOWO-NACZYNIOWEGO

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ABSTRACT

Introduction. The knowledge of cardiovascular diseases is important because of an increasing number of patients suffering from this group of diseases. It is expected that nurses will not only provide professional health care, but will also educate patients and shape their healthy habits.
Aim. of the research was to assess the knowledge of nurses about cardiovascular diseases. The research was focused on the main risk factors and methods of prevention of cardiovascular diseases.
Material and Methods. In the research an individual survey was conducted among a group of nurses, who were working in their profession. People interviewed were asked a series of open and closed questions concerning correct biochemical and physiological parameters of the human body and cardiovascular diseases.
Results. The results present that 64.49% of respondents know modifiable factors influencing development and course of cardiovascular diseases. People surveyed have shown poor knowledge of the correct cholesterol level in blood and blood pressure, there were respectively 28.80% and 20.80% of correct answers. The Pearson correlation coefficient has shown a moderate correlation (-0.44) between the place of residence and finished courses. There has been a weaker correlation between the age, seniority and place of residence and correct answers.
Conclusions. Results show that it is needed to constantly refresh and deepen nurses' knowledge. The Surveyed group had knowledge about risk factors and cardiovascular diseases, acquired their knowledge from proven sources – lectures, laboratories and practical classes. It is still needed to refresh the knowledge about biochemical and physiological parameters of the human body.

KEYWORDS: cardiovascular diseases, nurses, prevention, knowledge.

STRESZCZENIE

Wstęp. Wiedza na temat chorób układu sercowo-naczyniowego jest szczególnie istotna ze względu na rosnącą liczbę przypadków pacjentów chorych na tę grupę chorób. Od pielęgniarek oczekuje się obecnie nie tylko fachowej opieki pielęgnacyjnej, ale również przekazywania wiedzy i kształtowania prawidłowych postaw zdrowotnych pacjentów.
Cel. Celem pracy była ocena wiedzy pielęgniarek i pielęgniarzy w zakresie chorób układu sercowo-naczyniowego. W badaniu skupiono się na głównych czynnikach ryzyka i metodach profilaktyki schorzeń tego układu.
Materiał i metody. W badaniu wykorzystano jako technikę badawczą – ankietę indywidualną, narzędzie badawcze – kwestionariusz ankiety. Badanie przeprowadzono na grupie pielęgniarek i pielęgniarzy aktywnych zawodowo. Osoby ankietowane odpowiadały na szereg pytań otwartych i zamkniętych, dotyczących prawidłowych parametrów biochemicznych i fizjologicznych organizmu człowieka, a także chorób układu sercowo-naczyniowego.
Wyniki. Uzyskane odpowiedzi wykazały, że 64,49% respondentów zna czynniki modyfikowalne, mające wpływ na rozwój i przebieg chorób układu sercowo-naczyniowego. Ankietowane osoby wykazały się niską wiedzą dotyczącą prawidłowego stężenia cholesterolu i ciśnienia tętniczego krwi, gdzie prawidłowych odpowiedzi udzieliło odpowiednio 28,80% i 20,80% osób. Wyliczony współczynnik korelacji Pearsona wskazał na umiarkowanie silną korelację między miejscem zamieszkania a posiadanymi kursami na poziomie około -0,44, przy znacznie słabszej korelacji między wiekiem, stażem pracy i miejscem zamieszkania a prawidłowymi odpowiedziami na pytania.
Wnioski. Wyniki badania wskazują na potrzebę odświeżania i pogłębiania wiedzy wśród pielęgniarek i pielęgniarzy. Badana grupa posiadała wiedzę na temat czynników ryzyka i chorób układu sercowo-naczyniowego, zdobywała swoją wiedzę ze sprawdzonych źródeł – z wykładów, ćwiczeń lub zajęć praktycznych. Potrzebne jest odświeżanie wiedzy dotyczącej parametrów biochemicznych i fizjologicznych organizmu człowieka.

SŁOWA KLUCZOWE: układ sercowo-naczyniowy, pielęgniarki, profilaktyka, wiedza.

Introduction

Cardiovascular diseases constitute a serious social and economic problem both in Poland and worldwide. Despite the fact that the number of incidences of cardiovascular diseases has begun to drop within the last decades, it is assessed that they are still the most important health problem in the world in the 21st century. Currently, even every fourth person identifies a cardiovascular ailment in themselves [1]. Such a situation requires a change in undertaking complex solutions: monitoring risk factors, early diagnosis and undertaking treatment, and preventing repeated acute incidents [2]. Fighting with the epidemic of these diseases is inseparably connected with efficient, complex, and possibly individual education of patients that motivates for a change in health behaviour, for self-control, and self-care, and favouring an efficient cooperation with a doctor, nurse, and other professionals working for the benefit of health [3]. For several dozens of years, research into a decrease of threats connected with cardiovascular diseases has been conducted. A significant role in this scope is played by prevention and education on cardiovascular diseases, risk factors, and the possibilities of eliminating them on a wide scale [4].

A classic definition of prevention assumes that it includes any activities undertaken in order to prevent the appearance and development of undesirable behaviour, conditions or phenomenon in a given population [5]. Health education ought to be supported with efficient activities in order to develop behaviour focused on disease prevention to make the society aware that health is a capital, which is worth investing in [6]. Health education ought to transform human attitudes and behaviour to fight with new threats, and shape responsibility for one's own health and the health of other people from the nearest surroundings [7].

What is expected from a contemporary nurse is not only a professional nursing care, but also the right actions towards patients, whose aim is to convey knowledge on health and the conditions of maintaining it; and in the situation of a disease, knowledge on this disease and the ways of handling its consequences [8]. A nurse ought to be ready to help to make decisions connected with maintaining patient's health, shaping his/her positive attitudes, and behaviour towards health. In order for educational activities to be efficient, a nurse ought to use various methods and forms of education, and should also gain supplemental education, because knowledge is subject to constant modifications [9].

The Aim of research

The relevant level of knowledge among nurses is a significant element of the proper and efficient education of patients. For this reason, the assessment of knowledge on the risk factors and the prevention of cardiovascular diseases among female and male nurses has been chosen as the main aim of this research. Apart from that, the knowledge of female and male nurses on the proper biochemical and physiological parameters of a human organism has also been subject to an assessment. The aim of the research was not to compare the knowledge of nurses working in specific wards, but to assess the knowledge of the whole occupational group working in the same hospital.

Material and Methods

An anonymous survey questionnaire was used in the research (an individual questionnaire). The examined group consisted of female and male nurses actively working in the profession. The place where the research was conducted was Mazovian Specialized Hospital in Radom. The group surveyed consisted of nurses working mainly in internal, cardiology and other wards placed in this hospital. The survey was conducted within the period of time from 10th December 2016 till 20th March 2017. The questionnaire included 15 open and closed (single and multiple choice) questions as well as an instruction and information about the anonymity of the people researched. The people surveyed answered questions concerning:

1. the risk factors of cardiovascular diseases,
2. the cardiovascular diseases that appear in the society most frequently,
3. factors influencing the development and course of cardiovascular diseases,
4. modifiable factors influencing the development and course of cardiovascular diseases,
5. non-modifiable factors influencing the development and course of cardiovascular diseases,
6. the correct blood pressure,
7. the value of blood pressure that is typical for hypertension,
8. the correct concentration of total cholesterol in blood serum,
9. the correct concentration of cholesterol LDL-fraction in blood serum,
10. the correct concentration of cholesterol HGL-fraction in blood serum,
11. the correct concentration of glucose in blood,
12. the characteristics of an anti-atherosclerotic diet,
13. the elements of a pro-health lifestyle influencing the elimination of risk factors of cardiovascular diseases,
14. the main sources of knowledge of the researched nurses on cardiovascular diseases,

15. the record data: age, sex, place of residence, seniority, possessed specializations, and specialized courses completed.

Results

125 female and male nurses at the age from 23 to 65 years old took part in the research. In the research group, 75% female and male nurses possessed specialized courses; additionally, 68,8% of the respondents possessed at least one specialization (Table 1). In terms of an age division, the most numerous group – (39%) composed of people included in the age range of 31 – 40 years old, and the least – (8%) of the respondents were at the age of 23–30 years old. Not all the people surveyed answered the question concerning the age, which resulted in the total of indications of all age ranges that was lower than 125. A definite majority of the respondents were women – (91%). The most numerous group from among the people taking part in the survey possessed seniority within the limits of 11–20 years – (43%). The smallest number of people possessed work experience below 5 years – (8%). This corresponds to the age groups of the respondents, where the most numerous group was characterized by a relatively high age. The biggest percentage of completed courses was observed among people aged above 50 years old. None of the respondents below 30 years old completed a course.

Table 1. Record data of the researched nurses

Independent variables	Categories	Number of indications	% of indications
Age	23–30	8	8
	31–40	39	39
	41–50	19	19
	51 and more	33	33
Sex	Woman	114	91
	Man	11	9
Professional development	Courses	93	75
	Specializations	86	68.8
	No courses or specializations	39	31.2
Seniority	Less than 5 years	9	8
	6–10 years	19	16
	11–20 years	52	43
	21–30 years	28	23
	31 and more	12	10
Nurses with specialization by age	23–30 years	1	13
	31–40 years	12	31
	41–50 years	3	16
	51 and more	14	42
Nurses with courses by age	23–30 years	0	0
	31–40 years	9	23
	41–50 years	4	21
	51 and more	12	36

Source: authors' own analysis

The results obtained in the questionnaire research allowed to assess the knowledge of the researched group of the female and male nurses. The percentage values provided in the analysis mean a fraction of questionnnaires with a given answer marked or provided.

In the first analyzed question, the female and male nurses could choose several factors from among the menioned risk factors of cardiovascular diseases. On the basis of the results of the conducted research, most of the nurses stated that the main cause for the risk of cardiovascular diseases was smoking cigarettes – 24.53%, an improper diet – 21.87% and stress – 12.53 (**Figure 1**). In the opinion of the respondents, genetics and age did not constitute the risk factors of cardiovascular diseases. As many as 8.80% of the respondents gave no answer, which can testify to the ignorance of risk factors of cardiovascular diseases.

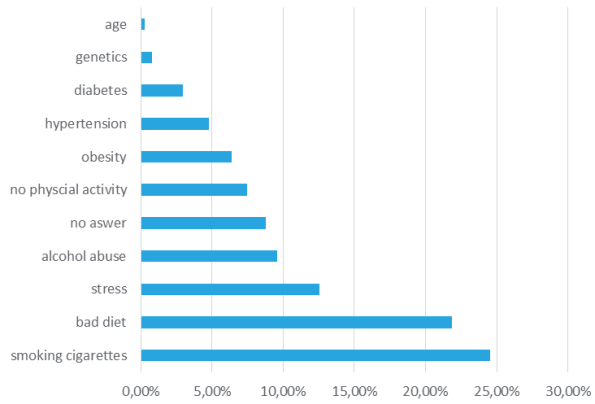

Figure 1. Answers on the appearance of cardiovascular diseases' risk factors obtained among the researched female and male nurses

Source: authors' own analysis

On the basis of the research conducted on the knowledge of cardiovascular diseases most commonly appearing in the society, 25.41% of the respondents indicated heart attack as the disease dominating in our society. High percentage of people surveyed mentioned coronary disease – 23.78%, 16.22% indicated atherosclerosis and 14.59% – hypertension; while 15.47% of the researched female and male nurses did not mention any cardiovascular disease (**Figure 2**).

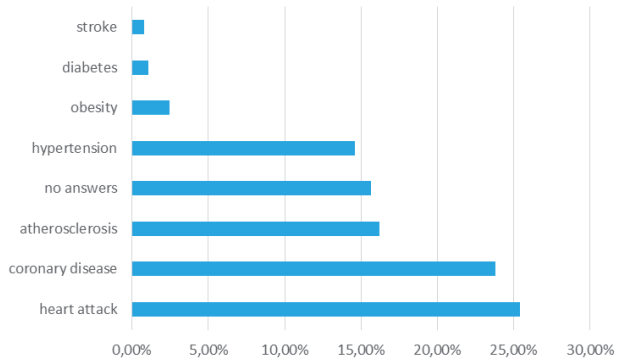

Figure 2. Answers on the cardiovascular diseases most frequently appearing in the society obtained among the researched female and male nurses
Source: authors' own analysis

Only 20.60% of the total number of respondents thought that both the modifiable and non-modifiable factors influenced the development and course of diseases (**Figure 3**). It is worrying that as many as 76.20% of the respondents gave no answer to this question despite a much higher percentage of answers in a pilot study. According to the results, 1.60% of the respondents thought that only the modifiable factors influenced the development and course of cardiovascular diseases. The same percentage of the respondents indicated only non-modifiable factors. Due to a high percentage of blank answers, this question was excluded from further analysis.

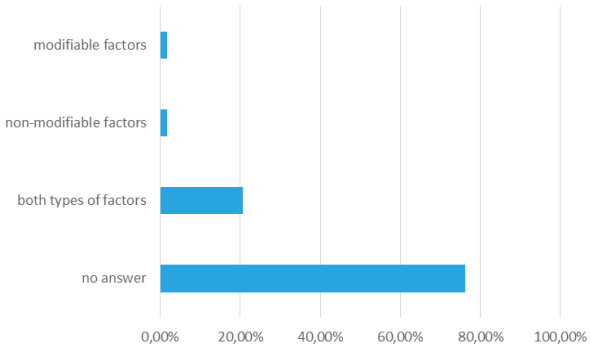

Figure 3. Answers on the factors influencing the occurrence, development and course of cardiovascular diseases obtained among questioned female and male nurses
Source: authors' own analysis.

As a result of the conducted research, it was stated that a definite majority of the respondents showed knowledge of modifiable factors influencing the development and course of cardiovascular diseases (**Figure 4**). The most commonly chosen factors were: no physical activity – 9.52%, obesity – 9.12%, smoking tobacco and overweight – 8.88%. As many as 29.28% of the respondents indicated none of the many listed risk factors that were subject to modification.

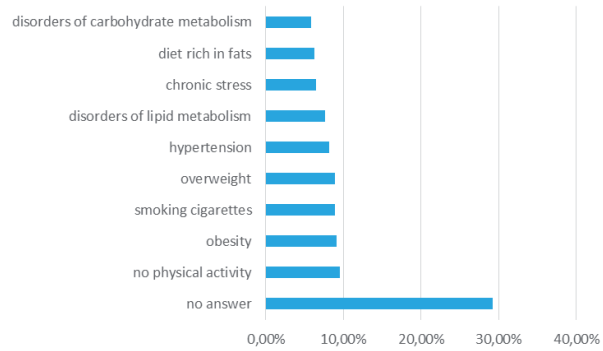

Figure 4. Answers on the modifiable factors influencing the development and course of cardiovascular diseases obtained among the questioned female and male nurses
Source: authors' own analysis.

A large group of the respondents left the questions concerning the correct blood pressure and the right concentration of total cholesterol in blood unanswered (**Figure 5** and **Figure 6**). It can indicate a lack of relevant knowledge concerning these parametres. Due to a high percentage of blank answers, these questions were excluded from further analysis.

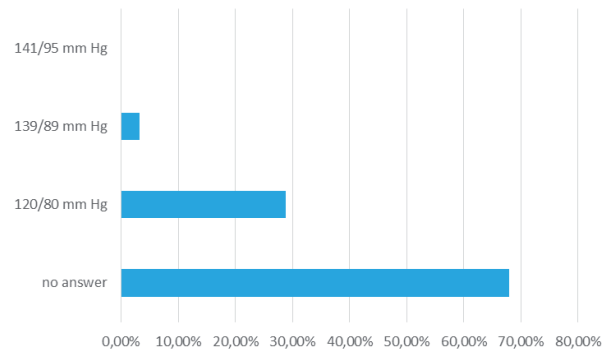

Figure 5. Answers on the correct blood pressure
Source: authors' own analysis.

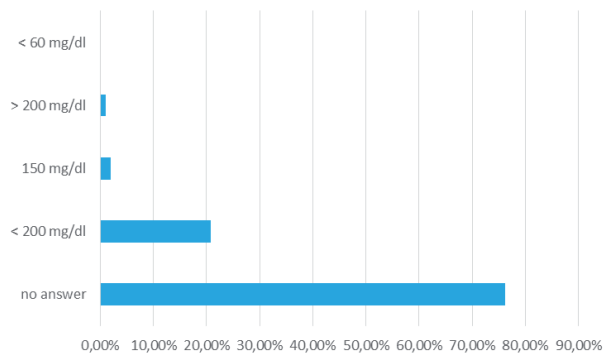

Figure 6. Answers on the correct concentration of total cholesterol in blood
Source: authors' own analysis.

From the analysis of the research results, it follows that the respondents know the elements of a pro-he-

alth lifestyle and their influence on eliminating the risk factors of cardiovascular diseases (**Figure 7**). Most of the respondents indicated the following answers: an anti–atherosclerotic diet – 27.73%, a diet with limiting table salt and taking medicines systematically in case of chronic diseases – 10.04%, taking care of maintaining the correct body weight – 9.96%.

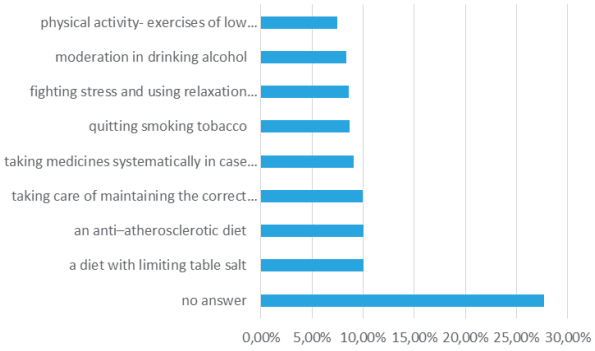

Figure 7. Answers on the a pro-health lifestyle and its influence on eliminating the risk factors of cardiovascular diseases
Source: authors' own analysis

The obtained research results allowed for differentiating the sources from which the female and male nurses researched acquired knowledge on cardiovascular diseases (**Figure 8**). 13.60% of the respondents acquired information on cardiovascular diseases during lectures and classes. Practical classes were indicated by 11.84% of the respondents. As many as 58.88% of the respondents gave no answer.

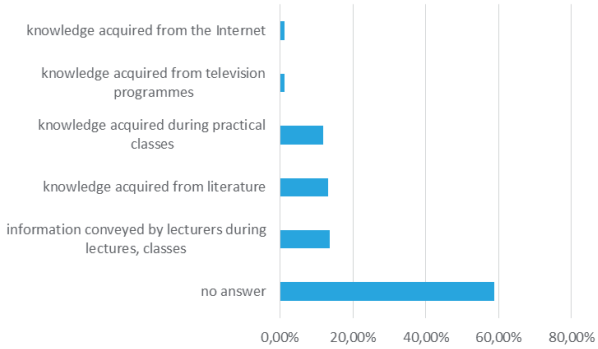

Figure 8. Answers on the sources of information on the subject of cardiovascular diseases in the opinion of the responding female and male nurses
Source: authors' own analysis

In order to check the correlations between the variables analyzed in the research, the value of the Pearson's correlation coefficient was specified. The analysis showed a moderately strong, negative correlation between the place of residence and possessed courses on the level of about -0.44 (**Table 2**). However, place of residence showed a weaker correlation with possessed specializations. The relations between the age, seniority, sex, the place of residence, and correct answers to selected questions were characterized by quite a weak correlation. It can be concluded that the age and seniority of the responding female and male nurses did not have a direct influence on giving the correct answers to the questions mentioned.

Table 2. Values of the Pearson's correlation coefficient among selected variables

	Age	Seniority	Sex	Place of residence
Possessed courses	0.1659	0.1763	-0.0119	-0.4366
Possessed specializations	0.1615	0.1505	-0.1565	-0.1402
Correct answer to the question about the correct blood pressure	0.1068	0.0823	-0.0529	-0.0527
Correct answer on the a blood pressure value with hypertension	-0.0925	-0.0569	-0.0133	-0.0828
Correct answer on the correct concentration of total cholesterol	-0.0511	-0.0268	-0.0017	-0.1186
Correct answer on the correct concentration of LDL- cholesterol	0.0135	0.0385	0.1271	-0.1095
Correct answer on the correct concentration of HGL- cholesterol	-0.0776	-0.0633	-0.0777	-0.1023
Correct answer on the correct concentration of glucose	0.0878	-0.1281	-0.0017	0.0026

Source: authors' own analysis

Discussion

The significance of relevant health education was also discerned in other research determining the state of patients' knowledge [10]. Professionals dealing with people suffering from cardiovascular diseases should constantly update their knowledge both in the scope of new medical discoveries and from the point of view of conveying knowledge. Pro-health education ought to be carried out particularly carefully in rural areas where the responding people demonstrated the poorest knowledge concerning cardiovascular diseases [11]. However, even at such places like Beijing, research has shown that there is still a need for more intensive education among nurses about cardiovascular diseases' risk reduction, as less than 58% of respondents correctly answered questions concerning this topic [12]. Female and male nurses in Poland are characterized by a relatively high level of knowledge, which is also reflected by surveys conducted in terms of knowledge in the scope of relevant blood pressure and factors affecting it [13]. The research authors emphasized the significance of female nurses' development of knowledge both before and after graduating from a higher education institution. The

involvement of nursing staff in educating society and preventing diseases can contribute to a better prevention of cardiovascular diseases significantly. The results of a survey conducted among American nurses reflect the results obtained in this research. Plenty of nurses gain knowledge on the subject of possible therapies from practice and scientific articles, on smaller degree relying on education [14]. The correlation between age, seniority, and the correct answers was relatively low. In the researched group, the level of knowledge was similar independently of the values of these factors, which can indicate that nurses update their knowledge even many years after completing education. In other research groups, the results indicated a higher level of knowledge among people with seniority over 5 years comparing to people working shorter than 5 years [15]. However, the quality of nursing care was adequate in both groups. It has been shown that additional courses related to cardiovascular disease prevention significantly improved knowledge of graduate nursing students [16].

The subject of pro-health education and prevention of cardiovascular diseases is vast. The presented research constitutes one possible approach to specifying the need for further education of nursing staff. It also constitutes a basis for further research, for example, among people practicing other medical professions. A summary of research from other European countries is possible for comparing the knowledge and attitude towards pro-health education of nurses depending on age and the place of work.

Conclusions

The results of the research indicate that the majority of the responding female and male nurses possess the knowledge on the risk factors and prevention of cardiovascular diseases. The best-known risk factors of cardiovascular diseases known to female and male nurses are smoking cigarettes, an improper diet, alcohol consumption, no physical activity, and obesity, which corresponds to the factors given in the subject literature. The female and male nurses know the most frequent cardiovascular diseases; and they know the factors influencing the development and course of these diseases. They possess knowledge on the pro-health lifestyle eliminating the risk factors of cardiovascular diseases; they gain knowledge during lectures and classes given by lecturers, and during practical classes. It results from the analysis of record data that age affects professional development among the female and male nurses. The higher the seniority of female and male nurses is, the more completed courses and specializations they have. Due to a big number of blank answers, it can be concluded that there is a need for a constant refreshment of knowledge of the female and male nurses that are professionally active, in the scope of biochemical and physiological parameters of the human body. It is possible to discern a need for further education of the female and male nurses in a form of a specialized block within the framework of education at higher education institutions, in order to equip them with relevant skills and information that are necessary for educating patients with the disorders of the cardiovascular system, as well as planning personal professional development by the female and male nurses through various development forms that will facilitate their improving qualifications.

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