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Wiedza pielęgniarek podstawowej opieki zdrowotnej na temat spożywania alkoholu w aspekcie wpływu na wartość ciśnienia tętniczego krwi oraz ryzyko rozwoju nadciśnienia tętniczego

Primary Health Care Nurses' Knowledge about Alcohol Use with Respect to its Impact on Blood Pressure and the Risk of Developing Arterial Hypertension

Streszczenie

Wstęp. Pielęgniarki podstawowej opieki zdrowotnej (POZ) mogą odegrać ważną rolę w redukcji ryzyka sercowo-naczyniowego, w tym – przyczynić się do ograniczenia spożycia alkoholu przez swoich podopiecznych.

Cel. Poznanie wiedzy pielęgniarek POZ na temat oceny spożywania alkoholu oraz jego wpływu na wartość ciśnienia tętniczego krwi i ryzyko rozwoju nadciśnienia.

Materiał i metody. Badaniem, przeprowadzonym w latach 2007-2009, objęto 185 pielęgniarek POZ (wiek 23-60 lat, x=40,9, SD=7,12; staż pracy 1-35 lat, x=19,37, SD=7,15). Zastosowano metodę sondażu diagnostycznego, technikę ankietową, autorski kwestionariusz ankiety. W analizie statystycznej zastosowano pakiet STATISTICA, za poziom istotności przyjęto $p \leq 0,05$. Uwzględniono wpływ wieku, miejsca zamieszkania, stanowiska, miejsca i stażu pracy oraz form kształcenia podyplomowego na poziom wiedzy pielęgniarek.

Wyniki. Znajomość kwestionariuszowych narzędzi przesiewowych do oceny stylu picia alkoholu wykazało 15,1% pielęgniarek, prawidłową interpretację porcji standardowej oraz limit spożycia alkoholu poprawnie zaznaczyło odpowiednio 37,3% i 53,5% badanych. Wpływ alkoholu na wartość ciśnienia tętniczego krwi znany był 91,9% pielęgniarkom POZ. Statystycznie częściej poprawnych wskazań dokonywały osoby, które ukończyły studia licencjackie na kierunku pielęgniarstwo ($p<0,001$) oraz te, które ukończyły dwa kursy kwalifikacyjne ($p=0,02$). Wykazano statystycznie istotne różnice prawidłowych odpowiedzi w zależności od subiektywnej oceny własnego przygotowania do rozpoznawania czynników ryzyka rozwoju nadciśnienia ($p=0,03$), a także deklarowanych przez respondentki działań ukierunkowanych na jego prewencję ($p=0,004$). Wiek, miejsce zamieszkania, sytuacja rodzinna, staż, miejsce i stanowisko pracy nie wpłynęły w sposób istotny statystycznie na poprawność wskazań.

Wnioski. Badane pielęgniarki POZ prezentowały umiarkowany poziom wiedzy na temat oceny ryzyka rozwoju nadciśnienia tętniczego związanego ze spożyciem alkoholu. Wskazana jest większa popularyzacja wiedzy na ten temat wśród pielęgniarek POZ.

Słowa kluczowe: pielęgniarka, wiedza, podstawowa opieka zdrowotna, alkohol, nadciśnienie tętnicze.

Summary

Introduction. Primary health care (PHC) nurses can play a significant role in reducing the cardiovascular risk, and contribute to lowering alcohol consumption by their patients.

Purpose. Determining the knowledge of PHC nurses about alcohol consumption evaluation and its impact on arterial blood pressure (BP) and the risk of developing hypertension.

Material and methods. The study, conducted in 2007-2009, included 185 PHC nurses (aged 23-60, x=40.9, SD=7.12; length of service 1-35 years, x=19.37, SD=7.15). The following methods were employed: diagnostic survey, questionnaire technique and custom survey questionnaire. The statistical analysis used the STATISTICA software package, the assumed significance level being $p \leq 0.05$. It took into account the effect of age, domicile, job, place and length of service and forms of postgraduate education on the nurses' knowledge levels.

Results. Knowledge of questionnaire screening tools for evaluating alcohol drinking styles was demonstrated by 15.1% of nurses; 37.3% and 53.5% of the respondents, respectively, correctly interpreted the standard portion and pointed to the alcohol consumption limit. The impact of alcohol consumption on BP was known to 91.9% of PHC nurses. Statistically, correct answers were more frequently given by persons who graduated from bachelor's degree courses in nursing ($p<0.001$) and those who completed two qualifying courses ($p=0.02$). The study showed statistically significant differences in correct answers relatively to the subjective evaluation of their own preparation to identify hypertension development risk factors ($p=0.03$), and the prevention measures declared by the respondents ($p=0.004$). Age, place of residence, family status, length of service and position had no statistically significant impact on the correctness of answers.

Conclusions. The PHC nurses under study presented a moderate level of knowledge about the assessment of risk of hypertension related to alcohol consumption. It is advisable to popularize the knowledge of the discussed issues among PHC nurses more extensively.

Key words: nurse, knowledge, primary health care, alcohol, arterial hypertension.

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INTRODUCTION

Arterial hypertension is one of the most frequent causes of cardiovascular morbidity and mortality. The results of the NATPOL-PLUS and WOBASZ studies consistently point to hypertension as a widespread condition and to the degree of its development risk in the Polish population [1].

Alcohol abuse (over 20-30 g of ethanol per day) is one of the primary factors contributing to the development of arterial hypertension. The current view is that alcohol can be responsible for several to a dozen or so (up to 30%) of all cases of primary hypertension [1-4]. The concept of repeated withdrawal episodes during which the sympathetic and renin-angiotensin-aldosterone systems become activated is assumed as the most probable. Another suggested mechanism consists in the direct impact of ethanol on increased peripheral resistance. It has been found that the greater the amount of alcohol drunk the higher the risk of hypertension. Cutting back on drinking large amounts of alcohol brings positive results in several weeks' time, while in a year the average reduction of systolic pressure can reach 12 mm Hg [1-2].

One of the strategies aimed at alleviating the damage caused by alcohol consumption (including the development of hypertension) is popularization of knowledge about the impact of alcohol on human health and the prevention and methods of detecting alcohol abuse issues among health care employees. Primary health care (PHC) nurses, through the identification of persons exhibiting hazardous drinking patterns and using minimum intervention, can play an important role in reducing the incidence of cardiovascular disorders, including hypertension, among their patients. In Habrat's view, the key question is including questions concerning alcohol use in the history routinely taken by nurses/physicians. The popular and recommendable methods are simple screening tools such as MAST Test (Michigan Alcoholism Screening), its abbreviated version, CAGE, and AUDIT (Alcohol Use Disorders Identification Test) [5-6].

The purpose of the study was to determine the knowledge of PHC nurses about the evaluation of alcohol drinking style and its impact on blood pressure and the risk of hypertension.

MATERIAL AND METHODS

The study, using the methods of diagnostic survey, questionnaire technique and custom survey questionnaire, was conducted in 2007-2009 in a group of 185 PHC nurses. Participation in the study was voluntary and anonymous.

The study group were women, predominantly residing in the city (n=151, 81.6%), mostly in the Pomeranian province (n=155, 83.8%) and married (n=160, 86.5%). The respondents' ages ranged between 23-60 years (x=40.9, SD=7.12), while their length of service was 1-35 years (x=19.37, SD=7.15). The respondents' profiles are shown in Table 1.

The majority of the respondents were community and family nurses (n=133, 71.9%). The others worked in the capacity of: nurse coordinators (n=17, 9.2%), surgical nurses (n=15, 8.1%), head nurses (n=12, 6.5%) and "other" (n=8, 4.3%).

TABLE 1. Respondents' profile.

	Value
Sex: women	185 (100%)
Age	23-60 years (x=40.9, SD=7.12)
Place of residence: city/country	151 (81.6%)/ 34 (18.4%)
Family status: married/ unmarried	160 (86.5%)/ 25 (13.5%)
Length of nurse's service	1-35 years (x=19.37, SD=7.15)

The most frequently stated place of job-related tasks was the home setting of the patients in their care. The nurses' place of work is shown in Table 2.

TABLE 2. Respondents' place of work.

Place of work	Number (N)	Percentage (%)
Home setting	137	74.1
Treatment room	23	12.4
Health promotion office	4	2.2
Specialist In-Patient Clinic	21	11.3
Overall	185	100.0

More than a half of the respondents had completed a qualifying course, of whom 70 (37.8%) had completed a course in family nursing. Fifteen nurses (8.1%) had completed two qualifying courses, and 4 (2.2%) – three courses. Every fifth respondent had a bachelor's degree in nursing (n=37, 20%), 4 people (2.2%) had master's degree in nursing, and 8 – a specialization training course in nursing (4.3%). Among the respondents there were also bachelors and masters in fields other than nursing. Table 3 presents the forms of post-graduate education completed by the study participants.

TABLE 3. Forms of postgraduate education of respondents.

Place of work	Number (N)	Percentage (%)
Qualifying course – in total; including the following fields:	108	58.4
Family Nursing	70	37.8
Occupational Nursing and Health Protection	9	4.9
Anesthesiological Nursing and Intensive Therapy	9	4.9
Nursing in Educational and Teaching Settings	5	2.7
Organization and Management	5	2.7
Other	10	5.4
Specialization	8	4.3
Higher Education – Bachelor of Nursing	37	20.0
Higher Education – Master of Nursing	4	2.2
Higher Education – bachelor's degree in fields other than nursing	11	5.9
Higher Education – master's degree in fields other than nursing	15	8.1

The statistical analysis of data was made with the Statistica software package, version 8.0, and Kruskal-Wallis and U Mann-Whitney tests. The evaluation of relationships between quantitative variables was based on Spearman' correlation coefficient. The assumed statistical significance level was $p \leq 0.05$. The analysis took into account the impact of age, place of residence, job, place of work and length of service and type of post-graduate education on the nurses' knowledge.

RESULTS

Twenty eight (28) nurses (15.1%) proved to know the screening questionnaire tools for the evaluation of alcohol drinking styles, which can and should be used in PHC with considerable success. Seventy eight (78) nurses (42.2%) gave no answer. The correct interpretation of a standard portion, containing a specific and equal amount of ethylic alcohol (10-15 g of pure ethylic alcohol, which corresponds to, approximately, 200 ml of 5% beer, 100 ml of 10% wine, 25 ml of 40% vodka) [1-3], was made by 69 (37.3%) of the respondents, while every third person provided no suggested answer.

In the course of the study an attempt was made to find out the respondents' opinion on the sex-dependent impact of the amount of alcohol consumed on the risk of hypertension. The threshold defined in literature, the so-called limit of moderate (reasonable) alcohol consumption (10-20 g maximum for women and 20-30 g for men) [1-3], after the exceeding of which the likelihood of developing hypertension increases (each additional 10 g of alcohol daily above this limit raises BP by approx. 1-2 mm Hg), was correctly stated by a half of the PHC nurses.

The participants in this study demonstrated a high level of knowledge about the impact of alcoholic beverages (consumed directly before the measurement) on BP as most respondents – i.e. 170 (91.9%) – gave correct answers. These results are included in Table 4.

The nurses subjected to the study were requested to perform a self-appraisal of the degree of preparation and use of hypertension prevention in their daily practice as well as a subjective evaluation of the potential expectations of patients and superiors in this respect. A four-point Likert scale reflecting the degree of the questions examined (levels from low to high) was used.

In effect, it turned out that over a half of the respondents thought that they were "highly" prepared to identify the hypertension risk factors in their patients, and only 7 (3.8%) – described the degree of their preparation as "low". Eighty three (83) people (44.9%) declared that they used the recommendations and indications for hypertension prevention in their daily practice to a "great" extent. According to the examined nurses, 37.3% and 30.3% of patients and 42.7% and 30.3% of superiors, respectively, had a "considerable" and "high" level of expectations concerning hypertension prevention. The respondents' opinions are presented in Table 5.

The performed statistical analysis (U Mann-Whitney test) led to the conclusion that more correct responses were given by persons who graduated from master's degree studies ($p<0.001$) and those who completed two qualifying courses ($p=0.02$). Statistically significant differences in correct answers (Kruskal-Wallis test) were shown in relation to the subjective evaluation of their own preparation for the identification of hypertension risk factors ($p=0.03$), and the actions aimed at its prevention declared by the respondents ($p=0.004$) – the differences appeared between those who declared to use prevention in a "moderate" degree and those who described the degree as "high" ($p=0.007$). Age, place of residence, family status, length of service, place of work and position did not significantly affect the correctness of responses.

Generally, it was found that the PHC nurses subjected to the study demonstrated an average level of knowledge about the issues covered in this paper, which is illustrated in the Table 6. Regrettably, none of the respondents answered correctly to all the questions posed in the survey questionnaire.

TABLE 4. Selected items of the respondents' knowledge.

Item of knowledge	Right answer		Wrong answer		No answer		Total	
	n	%	n	%	n	%	n	%
Screening tests to assess the style of drinking	28	15.1	79	42.7	78	42.2	185	100.0
The notion of "standard portion"	69	37.3	56	30.3	60	32.4	185	100.0
Alcohol consumption threshold	99	53.5	31	6.8	55	29.7	185	100.0
Impact of alcohol on BP value	170	91.9	8	4.3	7	3.8	185	100.0

TABLE 5. Nurses' self-esteem.

Element of self-esteem/ Degree	Small		Moderate		Significant		High	
	n	%	n	%	n	%	n	%
Preparation for risk assessment	7	3.8	55	29.7	106	57.3	17	9.2
Using prevention	17	9.2	49	26.5	83	44.9	36	19.5
Patients' expectations	17	9.2	43	23.2	69	37.3	56	30.3
Superiors' expectations	18	9.7	32	17.3	79	42.7	56	30.3

TABLE 6. Percentage of correct answers.

Value (%)	Number (N)	Percentage (%)
0.0	1	0.5
10.0	3	1.6
20.0	9	4.9
30.0	35	18.9
40.0	51	27.6
50.0	34	18.4
60.0	32	17.3
70.0	17	9.2
80.0	3	1.6

DISCUSSION

The principal tasks related to the prevention of alcohol drinking problems, early identification of persons affected by alcohol problems and their proper management are addressed to PHC staff. It was found that a simple, cheap and brief intervention conducted for persons exhibiting hazardous drinking habits is much more effective than treatment of addicts or its conducting for persons with harmful drinking habits [4-6].

According to a number of authors, PHC nurses are a potentially useful but insufficiently used group in the field of health protection and managing interventions. The principal reasons for refraining from taking action, stated by nurses, are: a lack of a consistent procedures, lack of time and fear of negative changes in their relations with patients [7-9].

The key question is the ability to identify the alcohol drinking style and qualify the patient to a particular group. The useful tools are the widely available questionnaire screening tests: CAGE, MAST and AUDIT – the most adequate methodologically, recommended by the WHO [5-7]. The results obtained in this study show a relatively low level of knowledge about the above screening tools among the respondents, lower than the knowledge of the PHC nurses examined by Majda and 5-year students of nursing (15.1%, 36% and 37.74%, respectively) [10, 11]. It appears significant that nearly 80% of the questioned nurses selected no answer.

The assessment of alcohol consumption makes use of the notion of a standard unit of ethylic alcohol. The results of the studies conducted by the authors of the present paper (37.3% of correct answers) correspond to the results of the studies conducted among Australian nurses and those stated above, in which the level of the respondents' knowledge of the term "standard portion" was 38% [9], 28.8% [12] and 58.5% [11].

An analysis of the respondents' knowledge about the reasonable drinking limit in comparison with the studies conducted by other authors points to a considerable similarity of the results obtained. Owens concluded that the percentage of correct answers concerning the quantitative limit of reasonable alcohol use given by English primary health nurses was 34% for men and 60% for women [13], while among Australian nurses, studied by Griffiths, they were 33% and 45%, respectively [9]. In the studies conducted by Majda, the alcohol drinking limit under discussion was correctly stated by 31.9% of PHC nurses [12], and slightly more, 53.5% of the present study respondents; a similar result was obtained by 5-year students of nursing (58.5%) [11].

The studies show that sometimes a short but intensive training course leads to an improvement of knowledge and abilities required to identify hazardous drinking and conduct a brief intervention, and – equally importantly – a positive change in attitude, self-esteem and confidence in one's competence and capabilities [8, 10, 14, 15].

CONCLUSIONS

1. The examined PHC nurses presented a moderate level of knowledge about the evaluation of risk of developing hypertension related to alcohol consumption.
2. Correct answers were more frequently given by graduates from bachelor's degree nursing courses and those who had completed two qualifying courses.
3. Statistically significant differences were shown to exist between correct answers depending on the subjective assessment of their preparation for the identification of hypertension risks and the actions aimed at its prevention declared by the respondents.
4. Age, place of residence, family status, length of service, place of work and position did not significantly affect the correctness of the answers.
5. More extensive popularization of the knowledge about the issues in question among PHC nurses is recommended.

REFERENCES

1. Zasady postępowania w nadciśnieniu tętniczym. Wytyczne Polskiego Towarzystwa Nadciśnienia Tętniczego oraz Kolegium Lekarzy Rodzinnych w Polsce. Nadciśnienie Tętnicze. 2008;12(5):317-42.
2. Zalecenia ESH/ESC dotyczące leczenia nadciśnienia tętniczego – 2007 rok. Nadciśnienie Tętnicze. 2007;11 Suppl D:S1-107.
3. The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of high Blood Pressure. Hypertension. 2003;42:1206-52.
4. Sesso HD, Cook NR, Bering JE, Manson JE, Ganiano M. Alcohol Consumption and Risk of Hypertension in Women and Men. Hypertension. 2008;51:1080-7.
5. Habrat B. Osoby z problemami alkoholowymi – rozpoznawanie i postępowanie. Przew Lek. 2000;3:86-91.
6. Narodowy Program Profilaktyki i Rozwiązywania Problemów Alkoholowych na lata 2006-2010. Warszawa: Ministerstwo Zdrowia, PARPA; 2006.
7. Johansson K, Ăkerlind I, Bentsen P. Under what circumstances are nurses willing to engage in brief alcohol interventions? A qualitative study from primary care in Sweden. Addict Behav. 2005;30:1049-53.
8. Vadlamudi RS, Adams S, Hogan B, Wu T, Wahid Z. Nurses' attitudes, beliefs and confidence levels regarding care for those who abuse alcohol: Impact of educational intervention. Nurse Education in Practice. 2008;8:290-8.
9. Griffiths RD, Stone A, Tran DT, Fernandez RS, Ford K. Drink a little; take a few drugs: do nurses have knowledge to identify and manage inpatients at risk of drugs and alcohol? Drug Alcohol Rev. 2007;26: 545-52.
10. Majda A, Bodys-Cupak I. Model edukacji pielęgniarek podstawowej opieki zdrowotnej w zakresie profilaktyki uzależnień od alkoholu. Fam Med Prim Care Rev. 2006;8(2):285-9.
11. Grabowska H, Narkiewicz K, Grabowski W, Krajewska M, Grzegorczyk M, Gaworska-Krzemińska A, Świetlik D. Spożywanie alkoholu a ciśnienie tętnicze krwi w opinii pielęgniarek. In: Krajewska-Kułak E, Szczepański M, Łukaszuk C, Lewko J, editor. Problemy terapeutyczno-pielęgnacyjne: od poczęcia do starości. Białystok: AM; 2007. p. 309-14.

12. Majda A. Edukacja antynikotynowa i antyalkoholowa w praktyce pielęgniarek podstawowej opieki zdrowotnej. Zdr Publ. 2003;113(3/4): 237-43.
13. Owens L, Gilmore IT, Pirmohamed M. General practice nurses' knowledge of alcohol use and misuse: a questionnaire survey. Alcohol Alcoholism. 2000;35(3):259-62.
14. Rassool GH, Rawaf S. Predictors of educational outcomes of undergraduate nursing students in alcohol and drug education. Nurse Educ Today. 2008;28:691-701.
15. Holmqvist M, Hermansson U, Nilsen P. Towards increased alcohol intervention activity in Swedish occupational health services. Int J Occup Med Environ Health. 2008;21(2):179-87.

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