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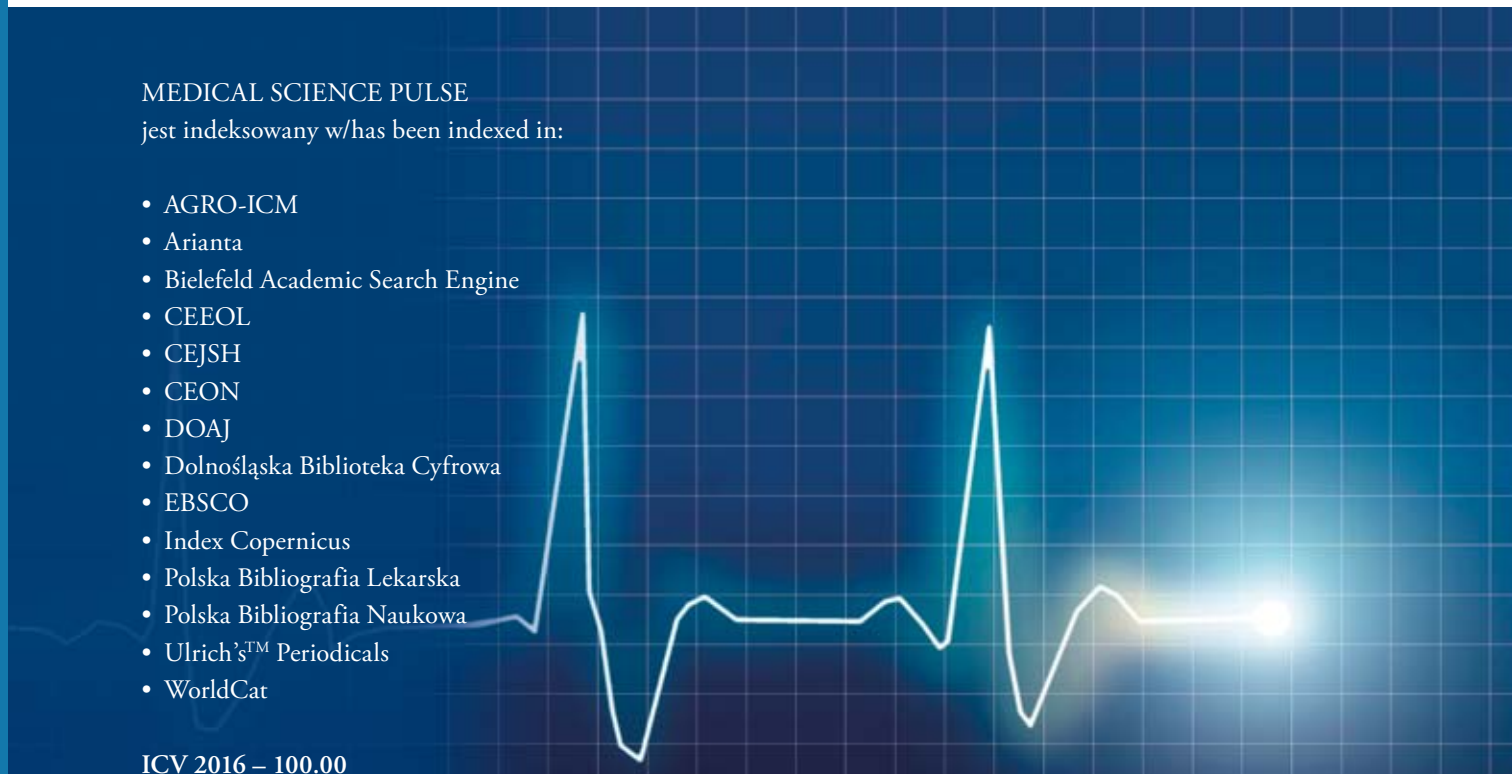

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REDAKCJA | EDITORIAL OFFICE:
ul. Katowicka 68, 45-060 Opole
tel. (+48) 77 442 35 46
fax (+48) 77 442 35 25
e-mail: redakcja@wsm.opole.pl

Nakład: 200 egz.

Kontakt:
Z-ca redaktora naczelnego –
Bożena Ratajczak-Olszewska
tel. (+48) 77 442 35 46
e-mail: ratajczakb@wsm.opole.pl

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Studio IMPRESO Przemysław Biliczak
45-360 Opole, ul. Plebiscytowa 82
e-mail: wydawnictwo@impreso.studio
tel. (+48) 77 550 70 50

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Ladies and Gentlemen, Faculty, Graduates and Students of Universities, Readers and Enthusiasts of *Medical Science Pulse*!

Medical Science Pulse" Scientific Quarterly – **list B of the MNiSW rating – 6 points**, after the subsequent expert evaluation within the international Index Copernicus database **– ICV points for 2016 – 100!**

These results point to the increasing recognition of our Quarterly and confirm the high scientific and editorial standards of the articles published by our journal. Medical Science Pulse is the only rated journal in the field of medicine, health and physical culture sciences in this region. We would like to thank all of the Authors, Readers, Reviewers, Members of the Editorial Board, Editors, Editorial Team and Opole Medical School authorities for contributing to the success of our journal. We would like to express our special gratitude towards **the Authors** who trusted our editorial staff and submitted so many manuscripts for "Medical Scientific Pulse" this year.

We invite our readers to explore the scientific content of the third issue; as in all previous issues manuscripts are published in English. The issue opens with original works devoted to health-related behavioural differences between sexes determines nutrition status in hospitalized eldery patients, the frequency of the self-examination of testicles among men in selected socio-demographic conditions, attitudes towards euthanasia in the context of fear of death among physiotherapists and caregivers of patients with paresis, the knowledge of women with epilepsy on motherhood. We encourage you to peruse works on evaluation of the effectiveness of self-massage in dysmenorrhea, assessment of the nutritional habits of junior high school students in relation to obesity, health-oriented bahaviours of secondary school students – a student and teacher evaluation and the knowledge of Opole Medical School students on honorary blood donation and transfusion medicine. We also recommend reading a fascinating review on art therapy in nursing.

We strongly encourage authors to send us their results of novel research projects and case studies in English; reviews are also invited. We guarantee professional proofreading by a language editor – specialist native speaker of English. Please note that an online version of the printed journal is available at the time of publication, free of charge, on the journal's website medicalsciencepulse.com. On the website, authors can find a dedicated subpage tool that enables them to commence the editorial process and exercise full control at each stage of manuscript publication. All articles are published within the framework of Open Access under a Creative Commons license, so authors can present their achievements to a wide audience.

We are also very pleased to announce that the Editorial Board of the journal has begun organising the V International Medical Science Pulse Conference under the working title "Interdisciplinary Science & Research" – we invite all our readers to attend this event at our University on 22–23 May, 2018. This method of propagating science evokes great interest among young scientists, with lecturers not only from Poland, but also other European countries and the USA.

We encourage everyone to cooperate with the editors of "Medical Science Pulse."

Since a new academic year of 2017/2018 has arrived, we hope that this year will be a time of great inspiration and achievement for all our authors, members of the Editorial Board, editors, students and employees of the Opole Medical School as well as the entire academic community of Opole and the wider region. May this year be exciting, productive and open new opportunities for gaining knowledge as well as facing new educational and scientific challenges. **Gaudeamus igitur...**

Szanowni Państwo, Pracownicy, Absolwenci i Studenci Szkół Wyższych, Czytelnicy i Sympatycy *Medical Science Pulse*!

Kwartalnik Naukowy „Medical Science Pulse" – **lista czasopism B MNiSW – 6 pkt,** po kolejnej ocenie eksperckiej w międzynarodowej bazie Index Copernicus **liczba punktów ICV za rok 2016 – 100!**

Coraz wyższa punktacja jest potwierdzeniem wzrastającej jakości naukowej oraz edytorskiej naszego Kwartalnika, jedynego punktowanego czasopisma z zakresu nauk medycznych, nauk o zdrowiu i nauk o kulturze fizycznej w regionie. Dziękujemy za współuczestnictwo w tym naukowym wyzwaniu Państwu – naszym Autorom i Czytelnikom, Recenzentom, Członkom Rady Naukowej, Redaktorom, Zespołowi Redakcyjnemu oraz władzom PMWSZ w Opolu. Szczególnie dziękujemy **Autorom**, którzy zaufali naszej Redakcji i tak licznie w tym roku przesyłają prace do „Medical Science Pulse".

Zapraszamy do zapoznania się z częścią naukową zeszytu trzeciego. Wszystkie manuskrypty, podobnie jak w zeszycie pierwszym i drugim, publikowane są w języku angielskim. Otwierają ją prace oryginalne poświęcone różnicom behawioralnym związanym z zachowaniami zdrowotnymi miedzy płciami determinującymi stan odżywienia u hospitalizowanych pacjentów w podeszłym wieku, samobadaniu jąder wśród mężczyzn w wybranych uwarunkowaniach socjodemograficznych, postawom wobec eutanazji w kontekście lęku przed śmiercią wśród fizjoterapeutów i opiekunów osób z niedowładami oraz wiedzy kobiet chorych na padaczkę na temat macierzyństwa. Zachęcamy do zaznajomienia się z pracami o ocenie efektywności automasażu w redukcji bólu menstruacyjnego u kobiet, ocenie nawyków żywieniowych młodzieży gimnazjalnej w aspekcie występowania otyłości, zachowaniach prozdrowotnych młodzieży licealnej w ocenie uczniów i nauczycieli, wiedzy studentów PMWSZ w Opolu na temat honorowego krwiodawstwa i leczenia krwią. Zachęcamy także do zapoznania się z niezwykle interesującą pracą poglądową na temat terapii artystycznej w pielęgniarstwie.

Gorąco zapraszamy Państwa do przesyłania wyników projektów badawczych, opisów przypadków, a także prac poglądowych w języku angielskim. Gwarantujemy profesjonalną korektę redaktora językowego – specjalisty native speakera. Przypominamy, że równolegle z wersją drukowaną czasopisma ukazuje się w bezpłatnym dostępie wersja elektroniczna na stronie medicalsciencepulse.com. Na tej stronie również zakładka dla autorów tekstów – narzędzie umożliwiające inicjację procesu edytorskiego publikacji oraz jego pełną kontrolę na każdym etapie prac redakcyjnych. Wszystkie artykuły publikowane są w systemie Open Access na licencjach Creative Commons, macie więc Państwo szansę dotrzeć ze swoimi publikacjami do bardzo szerokiego grona odbiorców.

Z przyjemnością informujemy także, że Redakcja Kwartalnika rozpoczęła organizację V Międzynarodowej Konferencji Medical Science Pulse pod roboczym tytułem „Intersyscyplinarność w nauce i badaniach naukowych", na którą już serdecznie zapraszamy do naszej Uczelni 22 i 23 maja 2018 roku. Ta forma upowszechniania nauki cieszy się niesłabnącym zainteresowaniem młodych naukowców, a wykładowcy przybywają licznie nie tylko z Polski, ale i z innych krajów Europy oraz USA.

Zachęcamy wszystkich do współpracy z Redakcją „Medical Science Pulse".

Z okazji nowego roku akademickiego 2017/2018 życzymy autorom, członkom Rady Naukowej, redaktorom, studentom i pracownikom Państwowej Medycznej Wyższej Szkoły Zawodowej w Opolu oraz całej społeczności akademickiej Opola i regionu czasu najlepszych inspiracji. Niech ten rok będzie interesujący i niezwykły, niech otworzy nowe możliwości zdobywania wiedzy i postawi nowe wyzwania dydaktyczne i naukowe. **Gaudeamus igitur...**

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HEALTH-RELATED BEHAVIOURAL DIFFERENCES BETWEEN THE SEXES DETERMINES NUTRITION STATUS IN HOSPITALIZED ELDERLY PATIENTS

RÓŻNICE BEHAWIORALNE ZWIĄZANE Z ZACHOWANIAMI ZDROWOTNYMI MIĘDZY PŁCIAMI, DETERMINUJĄCE STAN ODŻYWIENIA U HOSPITALIZOWANYCH PACJENTÓW W PODESZŁYM WIEKU

Grażyna Puto[1 A,C–F]
Iwona Repka[1 C–F]
Kornelia Biłko[2 B–D]
Mirosława Dzikowska[1 E,F]

[1.] Faculty of Health Sciences, Institute of Nursing and Midwifery, Clinical Nursing Unit, Jagiellonian University Medical College, Krakow, Poland

[2.] Graduate of Faculty of Health Sciences, Institute of Nursing and Midwifery, Clinical Nursing Unit, Jagiellonian University Medical College, Krakow, Poland

A – przygotowanie projektu badania | study design, **B –** zbieranie danych | data collection, **C –** analiza statystyczna | statistical analysis, **D –** interpretacja danych | interpretation of data, **E –** przygotowanie maszynopisu | manuscript preparation, **F –** opracowanie piśmiennictwa | literature review, **G –** pozyskanie funduszy | sourcing of funding

SUMMARY

Background: Health-related behaviours affect the preservation and maintenance of health. They form a important part of the everyday life of all individuals including the elderly. Some of the most significant factors affecting health are eating habits, physical activity, and the ability to handle stress and limiting the use of substances.

Aim of the study: The aim of this paper was to assess the effect of health-related behaviours on nutrition in hospitalized elderly patients.

Material and Methods: The study population consisted of 151 subjects over 60 years old. The study tools included a diagnostic survey, the Health Behaviour Inventory and the Mini Nutritional Assessment. Statistical significance for differences and strength of correlation between the variables was set at $p < 0.05$.

Results: The general indicator of health behaviour was higher among women (88.78 ± 13.82 vs. 83.55 ± 12.93; $p = 0.01$). The analysis of health behaviour showed significant differences between men and women in relation to good eating habits ($p = 0.01$) and prophylactic behaviour ($p = 0.01$).

Conclusions: Elderly people who followed a proper diet, which included fruit and vegetables, and avoided food with preservatives, were better nourished. A positive attitude was connected with the state of nutrition. Well-nourished status can be observed among the elderly who have positive attitude, avoid anger, anxiety and depression, and have friends and a stable family life.

KEYWORDS: health behaviour, elderly, state of nutrition

STRESZCZENIE

Wstęp: Zachowania zdrowotne osób starszych, będące elementem codziennego życia, wpływają na utrzymanie i wzmacnianie zdrowia. Do jednych z najważniejszych czynników warunkujących zdrowie należą nawyki dotyczące prawidłowego odżywiania i aktywności fizycznej, umiejętność radzenia sobie ze stresem czy ograniczenie stosowania używek.

Cel pracy: Celem podjętych badań była ocena wpływu zachowań zdrowotnych na stan odżywienia osób starszych.

Materiał i metody: Badania przeprowadzono wśród 151 osób po 60. roku życia, przy użyciu kwestionariusza wywiadu, Inwentarza Zachowań Zdrowotnych i Minimalnej Oceny Stanu Odżywienia. Istnienie różnic i siły związku między zmiennymi oszacowano na poziomie istotności $p < 0,05$.

Wyniki: Ogólny wskaźnik zachowań zdrowotnych wyższy był wśród kobiet niż mężczyzn (88,78 ± 13,82 vs 83,55 ± 12,93; $p = 0,01$). Analiza zachowań zdrowotnych wskazywała istotne różnice między kobietami a mężczyznami w zakresie: prawidłowych nawyków żywieniowych ($p = 0,01$), zachowań profilaktycznych ($p = 0,01$).

Wnioski: Osoby starsze, które dbają o prawidłowe odżywienie, jedzą warzywa, owoce, unikając spożywania żywności z konserwantami, charakteryzowały się lepszym stanem odżywienia. Pozytywne nastawienie psychiczne pozostaje w związku z oceną stanu odżywienia. Zadowalający stan odżywienia cechuje osoby starsze, które myślą pozytywnie, unikają gniewu, lęku i depresji, mają przyjaciół oraz uregulowane życie rodzinne.

SŁOWA KLUCZOWE: zachowania zdrowotne, osoby w podeszłym wieku, stan odżywienia

Background

In view of the progressive ageing of society, which is perceived as a challenge for the 21st century, the health behaviour of the elderly has become very significant, not only in the context of delaying the incidence of chronic diseases, but also in the context of social ramifications.

Both Poland and other European countries have been experiencing a regular increase in the number of people aged 60 and above. According to GUS 2016 data, in 2014 the number was 8,500,000 out of 38,500,000 of the total population of Poland (which accounted for 21.5% of the total). The number is forecast to rise to 13,700,000 (840.4%) by 2050, with a simultaneous decline in the overall population number to 33,900,000 [1].

Health behaviour comprises the activities an individual undertakes as part of their everyday life that affect the maintaining and improving of health, which in turn pertains to longevity and quality of life. An important determinant of an individual's decisions is an interdisciplinary approach, which is largely affected by personal experiences and knowledge of health and diseases, determined by the attitude towards one's health adopted earlier in life. Some of the most significant factors determining health are eating habits, physical activity, and the ability to handle stress and limiting the use of substances. Even though the process of ageing is inevitable, it is possible to remain independent for longer, with proper nutrition being one of the basic conditions of physical and mental health [2–4].

Age-dependent changes in the organism of an elderly person, accompanied by socio-economic factors (poverty, loneliness) and psychological issues (depression, stress) account for bad nutrition condition. The most common problems arising from the bad eating habits of the elderly include malnutrition and obesity. Malnutrition is more common in hospitalized patients and among the residents of care homes. It is closely connected with chronic diseases (such as cancer or neurological disorders) and the medicines taken. Obesity is more common among the elderly living in their own homes and may lead to serious metabolic diseases (diabetes, hypertension) [5]. This paper, analysing health behaviour in the context of the assessment of the state of nutrition among the hospitalized elderly, was undertaken because such knowledge is becoming more and more important.

Aim of the study

The aim of this paper was to assess the effect of health-related behaviour on nutrition among the hospitalized elderly.

Material and Methods

The study was conducted on a population of 151 patients hospitalized between August and December 2015, in accordance with the rules and regulations of the Helsinki Declaration. The study population comprised people: over 60 years old, both sexes, in the initial stages of hospitalization, in the stable period of illness, with maintained verbal contact, lack of communication disorders, and conscious consent.

The study was conducted using a diagnostic survey, which consisted of questions on demographic and social characteristics, the Health Behaviour Inventory, and the Mini Nutritional Assessment.

The Health Behaviour Inventory consists of 24 statements describing different types of health behaviour. By considering the frequency of individual behaviours indicated by the respondents, the researcher establishes the general intensity of health behaviour and the categories of these behaviours: good eating habits, prophylactic behaviour, positive attitude and health practices. Each statement is rated on Likert's 5-point intensity scale. Particular areas of health behaviour are analysed as the mean number of points in each category [6].

The Mini Nutritional Assessment is a simple tool which was developed for early detection of the risk of malnourishment. The respondent can score a maximum of 30 points. A score over 24 points is interpreted as a good state of nutrition, which does not require dietary intervention, scores between 17 and 23.5 points indicate a risk of malnourishment and a score below 17 points indicates malnourishment of the respondent [7].

Statistical analysis was performed using the SPSS programme. Descriptive statistics (arithmetical mean, minimum maximum and standard deviation) were used to analyse the variables. The Shapiro-Wilk test was used to assess the consistency of normal distribution of the variables with quantitative features. Due to no consistency of normal distribution of the variables, the Mann-Whitney U test was used when the grouping variable had two values and the Kruskal-Wallis test for analysis of a nominal variable of the grouping variable with a larger number of categories. In order to determine the differences between the groups, a chi-squared test was performed for nominal variables. Statistical significance for the presence of differences and the strength of correlation between the variables was set at $p < 0.05$.

Results

Out of 151 subjects (69 women, 82 men), the mean age for women was significantly higher than in the case of men (72.83 ± 9.37 vs. 68.94 ± 7.27 years, p = 0.01). The marital status also differed significantly between the sexes, with more men being married (79.3% vs. 43.5%), but at the same time more women declaring being widowed (42.0% vs. 12.2%) and either single (8.7% vs. 4.9%) or divorced/separated (5.8%, vs. 3.7%, p = 0.01). The results of the analysis of living conditions differed significantly between the sexes, with twice as many women living alone (33.3% vs. 14.6%) or with children (17.4% vs. 6,1%), and the men more frequently living with their wives and children (42.7% vs. 15.9%), with their wives (32.9% vs. 30.4%), or with other people (3.7% vs. 2.9%, p = 0.01). The level of education also differed significantly between the sexes. Women had secondary (42.0% vs. 23.2%), higher (26.1% vs. 25.6%), or primary (11.6% vs. 9.8%) education, while among men the most common was vocational education (41.5% vs. 20.3%, p = 0.02).

The general indicator of health behaviour was significantly higher among women (88.78 ± 13.82 vs. 83.55 ± 12.93; p = 0.01). The analysis of health behaviour categories differed significantly between the sexes in: good eating habits, prophylactic behaviour – Table 1.

Good eating habits, which included the type of food consumed, were statistically significantly more frequently displayed by women than men, and covered: the amount of fruit and vegetables consumed, ensuring proper nutrition, avoiding eating salt and salty foods, and eating wholegrain bread. Prophylactic behaviour, which included following a doctor's recommendations and getting information about health and diseases, was significantly more frequent among women. There were no statistically significant differences between the sexes in positive attitude, which included avoiding strong emotions, stress, and tensions. In the health practices category, which included habits relating to sleep, recreation and physical activity, women significantly more frequently than men limited smoking tobacco – Table 2.

Table 1. Health behaviour categories among the study population

Health behaviour categories	Women	Men	p
	Mean ± SD	Mean ± SD	
Good eating habits	3.63 ± 0.75	3.24 ± 0.70	0.01
Prophylactic behaviour	3.78 ± 0.73	3.47 ± 0.68	0.01
Positive attitude	3.76 ± 0.68	3.71 ± 0.59	NS
Health practices	3.62 ± 0.66	3.50 ± 0.71	NS

SD – standard deviation, NS – not statistically significant, p value – for Mann-Whitney U test

Table 2. Health behaviour of the study population

Health behaviour Mean ± SD		Women	Men	p
		Mean ± SD		
Good eating habits	I eat a lot of fruit and vegetables.	3.87 ± 0.98	3.59 ± 0.89	0.02
	I limit my intake of such food products as animal fats, sugar.	3.33 ± 1.23	3.09 ± 1.17	NS
	I ensure I'm well-nourished.	3.78 ± 1.10	3.43 ± 1.01	0.03
	I avoid eating food with preservatives.	3.55 ± 1.25	3.17 ± 1.37	NS
	I avoid salt and food with large amounts of salt.	3.70 ± 1.30	3.02 ± 1.24	0.01
	I eat wholegrain bread.	3.54 ± 1.35	3.17 ± 1.09	0.03
Prophylactic behaviour	I prevent colds.	3.96 ± 1.08	3.77 ± 1.07	NS
	I have the number for emergency medical services.	4.06 ± 1.37	3.62 ± 1.60	NS
	I follow the doctor's recommendations, which are based on my examinations.	4.30 ± 0.97	4.13 ± 1.03	NS
	I undergo medical examination regularly.	4.10 ± 1.11	3.73 ± 1.21	0.04
	I try to find out how others avoid diseases.	2.55 ± 1.25	2.24 ± 1.11	NS
	I try to get medical information and understand the causes of health and disease.	3.72 ± 1.29	3.29 ± 1.31	0.03
Positive attitude	I take the advice of people concerned with my health seriously.	3.45 ± 1.30	3.41 ± 1.12	NS
	I avoid depressing situations.	3.62 ± 1.19	3.55 ± 1.12	NS
	I try to avoid strong emotions, stressful situations, and tensions.	3.35 ± 1.12	3.54 ± 0.98	NS
	I have friends and a stable family life.	4.45 ± 0.98	4.37 ± 0.92	NS
	I avoid such feelings as anger, anxiety, and depression.	3.55 ± 1.06	3.22 ± 1.13	NS
	I think positive.	4.16 ± 0.90	4.20 ± 0.87	NS
Health practices	I have enough rest.	3.62 ± 1.13	3.48 ± 1.14	NS
	I avoid overworking myself.	3.22 ± 1.22	3.30 ± 1.19	NS
	I control my body weight.	3.04 ± 1.36	2.74 ± 1.31	NS
	I have enough sleep.	3.75 ± 1.18	3.79 ± 1.02	NS
	I avoid smoking tobacco.	4.67 ± 0.95	4.18 ± 1.39	0.01
	I avoid over-exertion.	3.43 ± 1.09	3.51 ± 1.11	NS

SD – standard deviation, NS – not statistically significant, p value – Mann-Whitney U test

The assessment of the state of nutrition of the elderly study population showed a risk of malnourishment in over half of the women studied, and malnourishment in men – Table 3.

Table 3. State of nutrition of the study population

Minimal nutritional assessment	Sex				p
	Women		Men		
	N	%	N	%	
Well-nourished	0	0.00	6	7.3	0.04
At risk of malnutrition	40	58.0	38	46.3	
Malnourished	29	42.0	38	46.3	

p value – Chi2 test

The study results did not show any significant differences between the general indicator of health behaviour and the assessment of the state of nutrition. A significant difference was shown between subjects with good eating habits and the assessment of the state of nutrition – Table 4.

Table 4. Health behaviour categories vs. state of nutrition

Health behaviour	Minimal Nutritional Assessment			p
	Well-nourished	At risk of malnutrition	Mal-nourished	
	Mean ± SD			
Good eating habits	2.75 ± 0.29	3.36 ± 0.77	3.55 ± 0.71	0.02
Prophylactic behaviour	3.33± 0.76	3.57 ± 0.76	3.68 ± 0.67	NS
Positive attitude	3.47 ± 0.39	3.71 ± 0.65	3.79 ± 0.62	NS
Health practices	3.72 ± 0.38	3.50 ± 0.70	3.61 ± 0.71	NS

p value – Kruskal-Wallis test

In good eating habits, significant difference was shown between subjects who ate a lot of fruit and vegetables and the assessment of the state of nutrition – Table 5.

Table 5. Good eating habits vs. state of nutrition

Good eating habits	Minimal Nutritional Assessment			p
	Well-nourished	At risk of malnutrition	Mal-nourished	
	Mean ± SD			
I eat a lot of fruit and vegetables.	2.83 ± 0.75	3.58 ± 0.93	3.96 ± 0.89	0.01
I limit my intake of such food products as animal fats, sugar.	2.50 ± 0.84	3.18 ± 1.25	3.28 ± 1.17	NS
I ensure I'm well-nourished.	3.33 ± 0.82	3.45 ± 1.08	3.78 ± 1.04	NS
I avoid eating food with preservatives.	2.17 ± 0.75	3.31 ± 1.34	3.49 ± 1.31	NS
I avoid salt and food with large amounts of salt.	3.00 ± 0.63	3.26 ± 1.32	3.45 ± 1.33	NS
I eat wholegrain bread.	2.67 ± 0.52	3.38 ± 1.32	3.34 ± 1.14	NS

p value – Kruskal-Wallis test

There were no statistically significant differences between the categories: detailed prophylactic behaviour, health practices and the assessment of the state of nutrition. The results of the assessment of the state of nutrition were significantly higher in subjects with positive attitude – Table 6.

Table 6. Positive attitude vs. state of nutrition

Positive attitude	Minimal Nutritional Assessment			p
	Well-nourished	At risk of malnutrition	Mal-nourished	
	Mean ± SD			
I take the advice of people concerned with my health seriously.	3.83 ± 0.98	3.56 ± 1.20	3.24 ± 1.21	NS
I avoid depressing situations.	3.50 ± 1.05	3.56 ± 1.17	3.61 ± 1.15	NS
I try to avoid strong emotions, stressful situations, and tensions.	3.50 ± 0.55	3.37 ± 1.11	3.54 ± 1.02	NS
I have friends and a stable family life.	4.00 ± 1.10	4.36 ± 0.94	4.49 ± 0.94	NS
I avoid such feelings as anger, anxiety, and depression.	2.83 ± 0.41	3.23 ± 1.10	3.58 ± 1.13	NS
I think positive.	3.17 ± 1.17	4.15 ± 0.88	4.30 ± 0.80	0.03

p value – Kruskal-Wallis test

The analysis of the correlation of the variables used in the study showed a positive effect of good eating habits on the state of nutrition, which indicates that the state of nutrition of the population studied improved when they began to develop good eating habits – Table 7.

Table 7. Health behaviour vs. state of nutrition

Health behaviour according to the Health Behaviour Inventory	Minimal Nutritional Assessment (in points)	
	R	p
Good eating habits	0.236	0.01

R – Spearman's rank correlation coefficient, p value – for chi2 test

Significant correlations were shown between pro-health behaviour and state of nutrition in the study group – Table 8.

Table 8. Health behaviour vs. state of nutrition

Health behaviour – detailed questions	Minimal Nutritional Assessment	
	R	p
I eat a lot of fruit and vegetables.	0.30	0.01
I ensure I'm well-nourished.	0.19	0.01
I avoid eating food with preservatives.	0.18	0.02
I have friends and a stable family life.	0.16	0.04
I have enough sleep.	0.16	0.04
I avoid such feelings as anger, anxiety, and depression.	0.17	0.03

R – Spearman's rank correlation coefficient, p value – Chi2 test

Discussion

The general indicator for health behaviour determining the attitude towards health, and acquired during the course of life, was shown to be higher among women in our study population of subjects over 60 years old. These results are corroborated by the results reported by Juszczyński, who studied a population of adults [6], and Muszalik et al., who studied elderly residents of Białystok [8]. Moreover, a study by Smoleń et al. reported a high indicator of health behaviour among the elderly attending Third Age University lectures [9]. Individual health behaviour categories showed that women take better care of their health than men. Significant differences between the sexes were noted in good eating habits and prophylactic behaviour. In the present study and in the study by Smoleń et al. [9] prophylactic behaviour included: regular medical examinations, following a doctor's recommendations and broadening knowledge about the causes of health and diseases. The discrepancy between the sexes in health behaviour was also corroborated in a study by Sygit-Kowalkowska, where women were the group performing more pro-health activities than men in the good eating habits category [10]. In the study, the good eating habits followed more frequently by women were eating more fruit and vegetables and wholegrain bread, ensuring proper nutrition, and avoiding salt and salty food. Smoleń et al. also reported a high intake of wholegrain bread, fruit and vegetables as good eating habits among the elderly. Furthermore, the study showed that the elderly limit the intake of animal fats, carbohydrates, salt, and food with preservatives [9]. The diet of the elderly should consist of a proper amount of unrefined carbohydrates, cereals and pulses, as well as fresh fruit and vegetables. Regular intake of dairy products, fish, animal proteins and eggs is recommended in order to ensure the appropriate level of animal products [11]. The state of nutrition affects the human body at every age, and in the elderly, due to their preferences and diseases experienced, often requires increased monitoring. The wrong diet and bad eating habits, lack of physical activity, lack of sleep, addictions (e.g. smoking cigarettes, excessive drinking) as well as lack of control over one's own health are factors which account for circulatory system diseases [3,5,11].

Moreover, the study showed that subjects with positive attitude had better results in the assessment of the state of health. Elderly subjects with positive attitude, stable family life and getting enough sleep had better results in the assessment of the state of health. The effects of positive attitude, including avoiding stressful situations, strong emotions, stress and tensions, and depressing situations, positive attitude and stable family life were shown among an elderly population in the study by Smoleń et al. [9]. In the study by Sygit-Kowalkowska, positive attitude was in a statistically significant relationship with being associated with a Social Home or a Third Age University [10].

Conclusions

1. Women take part in more pro-health activities, have higher health behaviour indicator scores and display a higher intensity of good eating habits and prophylactic behaviour than men.
2. Assessment of the state of nutrition of those elderly participants who ensure their proper nutrition, eat fruit and vegetables, and avoid food with preservatives was better.
3. Positive attitude is correlated with the assessment of the state of nutrition.
4. Well-nourished status can be observed among the elderly who have a positive attitude, avoid anger, anxiety and depression, and have friends and a stable family life.

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Correspondence address:
Dr n. med. Grażyna Puto
Collegium Medicum Uniwersytetu Jagiellońskiego
Wydział Nauk o Zdrowiu, Instytut Pielęgniarstwa i Położnictwa
Zakład Pielęgniarstwa Klinicznego
ul. Kopernika 25
31-501 Kraków
Phone: (+48) 607 455 551
E-mail: grazyna.puto@uj.edu.pl

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THE FREQUENCY OF THE SELF-EXAMINATION OF TESTICLES AMONG MEN IN SELECTED SOCIO-DEMOGRAPHIC CONDITIONS

CZĘSTOŚĆ SAMOBADANIA JĄDER WŚRÓD MĘŻCZYZN W WYBRANYCH UWARUNKOWANIACH SOCJODEMOGRAFICZNYCH

Grzegorz Józef Nowicki[1 A–G]
Barbara Ślusarska[1 A, D–F]
Agnieszka Bartoszek[1 D, E]
Katarzyna Kocka[1 D, E]
Marta Łuczyk[2 D, E]
Zdzisława Szadowska-Szlachetka[2 D, E]
Alina Deluga[1 D, E]

1. Department of Family Medicine and Community Nursing, Faculty of Health Sciences, Medical University of Lublin, Poland
2. Department of Oncology and Environmental Health Services, Faculty of Health Sciences, Medical University of Lublin, Poland

A – przygotowanie projektu badania | study design, **B –** zbieranie danych | data collection, **C –** analiza statystyczna | statistical analysis, **D –** interpretacja danych | interpretation of data, **E –** przygotowanie maszynopisu | manuscript preparation, **F –** opracowanie piśmiennictwa | literature review, **G –** pozyskanie funduszy | sourcing of funding

SUMMARY

Background: Testicle cancer constitutes 1.6% of malignant neoplasms in men. It is the most common tumor in men aging 20–44 years. It is worrying that the analysis of epidemiological data from the last three decades indicates a threefold increase in the incidence of this cancer. Regular testicular self-examination is an effective and cheap way to diagnose cancer.

Aim of the study: Evaluation of declared rate of testicular self-exam in adult working men in the context of selected socio-demographic factors.

Material and methods: The evaluation was conducted between June, 2014 and March 2015 on 224 working men. Diagnostic survey was used as a research method. The questionnaire used as the research tool was elaborated by the authors. The evaluated men were asked to estimate how often they examine their testicles. In the following questions included in the survey, they were asked about socio-demographic details and family history of cancer. The participation in the study was anonymous and voluntary.

Results: As declared, testicular self-exam is performed once a month only by 17.41% of surveyed men, 28.13% of men perform the exam once in a few months, and 54.46% do not do it at all. Socio-demographic factors that significantly influenced the frequency of testicular self-exam included: education of the father, and family history of cancer (father or siblings) ($p < 0.05$).

Conclusions: Regular testicular self-examination is performed by a small percentage of adult men. There is a need to inform young healthy men about the prevention of testicular cancer, within the field of health promotion.

KEYWORDS: testicular cancer, testicular self-exam, male sex

STRESZCZENIE

Wstęp: Nowotwór złośliwy jądra stanowi 1,6% zachorowań na nowotwory złośliwe u mężczyzn, a wśród osób w wieku 20–44 lata jest najczęściej występującym nowotworem. Niepokojącym jest fakt, że analiza danych epidemiologicznych z trzech ostatnich dekad wskazuje na trzykrotne zwiększenie zachorowalności na ten nowotwór. Skutecznym i tanim sposobem rozpoznania raka jądra jest regularne samobadanie jąder.

Cel pracy: Poznanie deklarowanej częstości samobadania jąder w grupie dorosłych mężczyzn pracujących, w zależności od wybranych cech socjodemograficznych.

Materiał i metody: Badania właściwe zostały przeprowadzane od czerwca 2014 do marca 2015 roku wśród 224 pracujących mężczyzn. Metodą badawczą był sondaż diagnostyczny, a narzędziem badawczym – kwestionariusz ankiety własnego autorstwa. Badanych poproszono o zaznaczenie, z jaką częstością wykonują samobadanie jąder. W kolejnych pytaniach kwestionariusza oceniano cechy socjodemograficzne oraz rodzinne występowanie nowotworów. Udział w badaniu był anonimowy i dobrowolny.

Wyniki: Samobadanie jąder raz w miesiącu deklaruje tylko 17,41% ankietowanych mężczyzn, 28,13% wykonuje je raz na kilka miesięcy, a 54,46% – wcale. Czynnikami socjodemograficznymi istotnie wpływającymi na częstość wykonywania samobadania jąder były: wykształcenie ojca oraz występowanie choroby nowotworowej u ojca lub rodzeństwa ($p < 0,05$).

Wnioski: Regularne wykonywanie samobadania jąder zgłasza niewielki odsetek dorosłych mężczyzn. Istnieje potrzeba szerszego upowszechniania wiedzy na temat profilaktyki nowotworu jądra wśród zdrowych mężczyzn w obszarze działań promocji zdrowia.

SŁOWA KLUCZOWE: rak jądra, samobadanie jąder, płeć męska

Background

Testicular cancer constitutes 1.6% of malignancies in men, and it is the most common neoplasm in men egging 20–44 years (25% in this age group). It is worrying that the analysis of epidemiological data from the last three decades indicates a threefold increase in the incidence of this cancer. In 1980, in Poland there were 380 recorded cases of testicular cancer, whereas in 2010 the number of cases rose to as high as 1094 [1]. Most of them are germ cell tumors, approximately 50% of them constitute seminomas, and the remaining 50% are seminomas with cell types of several different histological types. The most common symptoms of testicular cancer include painless enlargement of a part or the entire testicle (the testicle is hard, significantly heavier and painless) [2]. So patients experience pain in the scrotum or in the perineal region [3].

Early diagnosis of testicular cancer enables to cure almost 90% of patients. Testicular cancer gradually becomes a social issue that affects men in the productive age and at the time of the largest responsibility for the family. Diagnosis and treatment of this type of cancer results not only in somatic disorders, but also causes mental and social issues, as well as changes patient's approach towards work, marriage (especially sexual behavior) and interpersonal relationships.

Aim of the study

Evaluation of the declared frequency of testicular self-exam in adult working men in the context of chosen socio-demographic factors.

Material and methods

The evaluation was conducted between June, 2014 and March 2015 in 224 working men. The study was conducted on 224 adult working men. The mean age in the evaluated group amounted to 34.34 (SD = 5.87), whereas most of men aged 31–40 years (56.70%; n = 127). Most of the surveyed men lived in urban areas (59.37%; n = 133) and had high-school education (43.75%; n = 98). Other sociodemographic characteristic was presented in Table 1.

Table 1. Sociodemographic characteristics of the study group

Variable			n (%)
Age *mean 34.34 (SD = 5.87)*:	20–30 years		68 (30.36)
	31–40 years		127 (56.70)
	41–50 years		26 (11.61)
	≥ 51 years		3 (1.33)
Place of residence:	Village		91 (40.63)
	City		133 (59.37)
Education:	Occupational		33 (14.73)
	Average		98 (43.75)
	Higher		93 (41.52)
Father's education:	Occupational		95 (42.42)
	Average		108 (48.21)
	Higher		21 (9.37)
Monthly net income per family member:	Up to 500 PLN		14 (6.25)
	501–1000 PLN		39 (17.41)
	1001–1500 PLN		31 (13.84)
	≥ 1501 PLN		97 (43.30)
	I refuse to answer		43 (19.20)
Occurrence of cancers in the family:	Mother	Yes	41 (18.30)
		No	183 (81.70)
	Father	Yes	27 (12.05)
		No	197 (87.95)
	Siblings:	Yes	10 (4.46)
		No	214 (95.54)

Diagnostic survey was used as a research method. The questionnaire used as a research tool was elaborated by the authors.

In the first question the evaluated men were asked to estimate how often they examine their testicles. They could chose out of the following answers: once a month, once every few months and not at all. In the following questions included in the survey, there were asked about socio-demographic details and family history of cancer. Evaluated sociodemographic characteristic included: age, place of residence (city / village), education (vocational / secondary / higher), father's education (vocational / secondary / higher) and monthly net income per family member (up to 500 PLN / 501–1000 PLN / 1001–1500 / ≥ 1501 PLN). When the patient had a family his-

tory of cancer, he was asked for whether the mother, father or sibling had a cancer. Surveyed men were to choose yes or no for every family member.

The results were analyzed statistically. Non-measurable parameters were presented as the count and percentage. The χ^2 was used to detect a correlation in qualitative parameters. The values $p < 0.05$ were considered statistically significant for differences and correlations. Database and statistical analysis was conducted using the Statistica 9.1 software (StatSoft, Poland).

Ethical requirements

The study was conducted with approval of the Bioethics Committee of Medical University in Lublin (KE-0254/281/2013) and according to the requirements of the Helsinki Declaration. The participation in the study was anonymous and voluntary. Every participating man was informed about the purpose of the study and how to fill out the questionnaire, then he signed the consent form.

Results

Declared frequency of testicular self-exam

Obtained results indicate that 17.41% (n = 39) evaluated men declare to perform testicular self-examination once a month, 28.13% (n = 63) once every few months, and the vast majority, constituting 54.6% (n = 122) of all evaluated men, admits that they do not perform self-exam. Family history of cancer in mother was declared by 18.30% (n = 40), 12.05% (n = 27) in father, and 4.46% (n = 10) in siblings.

Sociodemographic determinants of declared frequency of testicular self-examination

The statistical analysis revealed a statistically significant correlation between declared frequency of testicular self-exam and father's level of education (p = 0.049). Men, whose fathers had higher level of education, more often reported that they perform testicular self-examination once a month (33.33% n = 7) whereas, men whose fathers have secondary level of education more often reported that they perform the self-exam once every few months (35.19%, n = 38). The surveyed men, whose fathers have vocational education, declared more often that the others declared that they do not perform the testicular self-exam (60%; n = 57).

No statistically significant differences were observed in correlation with other sociodemographic parameters such as: age, place of residence, education, and netto income per family member ($p > 0.05$). Detailed data was presented in Table 2.

Family history of cancer and the declared frequency of testicular self-exam

The statistical analysis performed indicate men, whose father (37.04%; n = 10) or siblings (60%; n = 6) have or had cancer, more often declared to perform testicular self-exam once a month than respondents without family history of cancer (father – 14.72%; n = 29, siblings = 15.42%; n = 33 ($p < 0.05$).) No statistically significant relationship was detected between cancer in mother and declared frequency of testicular self-examination ($p > 0.05$). Detailed data is presented in Table 3.

Discussion

Self-examination plays a crucial role in diagnostics of testicular cancer. It is available for everyone, cheap and is effective in detection of neoplastic changes [5]. Detection of testicular cancer at an early stage results in almost a 100% chance of survival. Every man should examine his testicles by himself under warm shower, when the scrotum is soft and stretched making it easier to detect abnormalities. Enlargement and change in the texture of testicles, palpable uneven surface or

Table 2. Sociodemographic determinants of declared frequency of testicular self-examination

Variable		Once a month [n (%)]	Once in a few months [n (%)]	Not at all [n (%)]	Statistical analysis
Age	20–30 years	13 (19.12)	16 (23.53)	39 (57.35)	$\chi^2 = 3.588$; $p = 0.732$
	31–40 years	20 (15.75)	41 (32.28)	66 (51.97)	
	41–50 years	5 (19.23)	5 (19.23)	16 (61.54)	
	≤ 51 years	1 (33.33)	1 (33.33)	1 (33.33)	
Place of residence	Village	20 (21.98)	24 (26.37)	47 (51.65)	$\chi^2 = 2.227$; $p = 0.328$
	City	19 (14.29)	39 (29.32)	75 (56.39)	
Education	Occupational	3 (9.09)	8 (24.24)	22 (66.67)	$\chi^2 = 3.133$; $p = 0.536$
	Average	18 (18.37)	30 (30.61)	50 (51.02)	
	Higher	18 (19.35)	25 (26.88)	50 (53.76)	
Father's education	Occupational	15 (15.79)	23 (24.21)	57 (60.00)	$\chi^2 = 9.528$; $p = 0.049$
	Average	17 (15.74)	38 (35.19)	53 (49.07)	
	Higher	7 (33.33)	2 (9.52)	12 (57.14)	
Monthly income	Up to 500 PLN	6 (42.86)	3 (21.43)	5 (35.71)	$\chi^2 = 8.940$; $p = 0.348$
	501–1000 PLN	4 (10.26)	14 (35.90)	21 (53.85)	
	1001–1500 PLN	5 (16.13)	9 (29.03)	17 (54.84)	
	≤ 15001 PLN	16 (16.49)	27 (27.84)	54 (55.67)	

Table 3. Family history of cancer and the declared frequency of testicular self-exam

Prevalence of cancer in the family		Once a month [n (%)]	Once in a few months [n (%)]	Not at all [n (%)]	Statistical analysis
Mother	Yes	10 (24.39)	11 (26.83)	20 (48.78)	χ^2= 1.732; p = 0.420
	No	29 (15.85)	52 (28.42)	102 (55.74)	
Father	Yes	10 (37.04)	6 (22.22)	11 (40.74)	χ^2= 8.234; p = 0.016
	No	29 (14.72)	57 (28.93)	111 (56.35)	
Siblings	Yes	6 (60.00)	2 (20.00)	2 (20.00)	χ^2= 13.433; p = 0.001
	No	33 (15.42)	61 (28.50)	120 (56.07)	

a nodule, as well as a "heavy testicle" are easy to notice by the patient. The entire exam is short and easy to perform by oneself [6].

According to the study of Moore and Topping [7] conducted on 203 students in the University of Huddersfield, only approximately 32% of the participants knew that men should examine their testicles, while 22% performed testicular self-examination, and 68% said that testicular self-examination should be performed regularly. In the study performed by Khadr and Oakeshott on 250 men aged 18 to 50 years, 91% were aware of the risk of testicular cancer, and 49% of them examined their testicles in the past year, while only 22% claimed to examine their testicles once a month. In the cited studies, the factors that determined whether men were examining their testicles or not, included age below 35 years, level of knowledge, family history of testicular cancer and active participation in one of the social campaigns. Studies performed by Kędra et al. [9] on 150 men, adults and school-boys as well, showed that only 8% of respondents perform testicular self-examination on a regular basis, 34% examined their testicles irregularly, and 32% of them did not do it at all. Whereas, study conducted by Pietraszek et al. [10] on the group of 198 young men, aging 17–29, as many as 79.8% have never performed testicular self-examination, 17.7% declare that they perform the examination irregularly, and 2.5% of them examine their testicles every month. In our study, 17.41% of men declare that they perform examination once a month. 54.46% of respondents do not examine their testicles at all. The factors that significantly influenced the frequency of testicular self-exam included: education of the father, and family history of cancer (father or siblings) ($p < 0.05$).

It seems that an important factor determining the frequency of self-examination is the knowledge about this tumor and the technique of testicular examination. As indicated in the study performed by Baran et al. [11] on 300 men, the level of knowledge regarding testicular cancer and its prevention is low. The questionnaire assessing the knowledge on testicle anatomy, worrying symptoms and factors that predispose to testicular cancer included 12 questions. The evaluated men usually answered correctly the first 5 questions. In addition, it was found that men, who knew about the self-examination technique gave correct answers to more questions – 7. However, in studies conducted by Piróg et al. [12] on 131 medical students and non-medical students in order to evaluate their knowledge using the Likert scale (0–5), medical students assessed their knowledge at 3.1 whereas non-medical students on 1.6. Students most often indicated the interned, press or television as a source of knowledge about testicular cancer. Medical professionals were indicated the least frequently. On the other hand, a general practitioner was indicated as the most desirable source of knowledge. The factors that significantly influenced the frequency of testicular self-exam included: education of the father, and family history of cancer (father or siblings). In case of father's level of education, it may be related to instructions fathers give to their sons about testicular self-examination. Whereas, the correlation with family history of cancer may result with more knowledge the family members obtained from the medical professionals, patient's leaflets and general interest of cancer prophylaxis as well as the fear of cancer.

In summary, based on available studies, and the studies performed by the authors of this work, it can be concluded that the knowledge of men on testicular cancer and its prevention is low, and testicular self-examination is performed by a small percentage of men. Education in this field should become a part of the curriculum at school from the very beginning, because as epidemiological studies show, testicular cancer concerns young men aging 20–44 years [1] In addition to the standard forms of health education for cancer prevention, modern forms of social campaigns should be addressed to young people that can be implemented by social media, which in an easy-going and friendly way promote prevention of testicular cancer overcoming the barrier of fear and shame among men [13]. Many years of experience in organizing social campaigns regarding education and prevention breast and cervix cancer show that such programs increase the awareness level in women, which also reflects in concrete actions undertaken for early detection of cancer. Information and educational campaigns regarding testicular cancer are often performed only once and information about them and the very problem of testicular cancer is rarely addressed in media that reach a large audience. In our study, we wanted to focus on prevention of testicular cancer and justify the need to implement a complexed health promotion in local societies using multi-directional and interdisciplinary approaches of health education.

Conclusions

1. Only a small percentage of men declares regular testicular self-exam.

2. Socio-demographic factors that influenced the frequency of testicular self-exam included: father's higher level of education, and family history of cancer (father or siblings).

3. It is necessary to intensify comprehensive informative and educational activities regarding prophylaxis of testicular cancer in men.

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Correspondence address:
Grzegorz Józef Nowicki, DHSc,
Zakład Medycyny Rodzinnej i Pielęgniarstwa Środowiskowego
Katedra Onkologii i Środowiskowej Opieki Zdrowotnej
Uniwersytet Medyczny w Lublinie
ul. Staszica 6; 20-081 Lublin
Phone: (+48) 81 44 86 810
E-mail: gnowicki84@gmail.com

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ATTITUDES TOWARDS EUTHANASIA IN THE CONTEXT OF FEAR OF DEATH AMONG PHYSIOTHERAPISTS AND CAREGIVERS OF PATIENTS WITH PARESIS

POSTAWY WOBEC EUTANAZJI W KONTEKŚCIE LĘKU PRZED ŚMIERCIĄ WŚRÓD FIZJOTERAPEUTÓW I OPIEKUNÓW PACJENTÓW Z NIEDOWŁADAMI

Alicja Głębocka[A–G]

Department of Psychology and Humanities,
Andrzej Frycz Modrzewski Krakow University, Poland

A – przygotowanie projektu badania | study design, **B –** zbieranie danych | data collection, **C –** analiza statystyczna | statistical analysis, **D –** interpretacja danych | interpretation of data, **E –** przygotowanie maszynopisu | manuscript preparation, **F –** opracowanie piśmiennictwa | literature review, **G –** pozyskanie funduszy | sourcing of funding

SUMMARY

Background: The permissibility of euthanasia raises many moral dilemmas, dividing the general public on this matter. Attitudes towards euthanasia depend on socio-cultural (age, beliefs) and individual factors (personality traits or working in medical professions).

Aim of the study: The aim of the study was to establish attitudes towards euthanasia and the level of anxiety before death among people in close contact with persons suffering from paresis. The hypotheses assumed that contact with disabled patients, who require constant care, and the type of such contact, modify the perceived fear of death and attitudes towards euthanasia.

Material and methods: Two clinical groups were involved in the study: physiotherapists dealing with stroke rehabilitation, family caregivers permanently taking care of close relatives of cerebral stroke survivors. The results of the two groups were compared to those of the control group, who were individuals with no personal experience in the care of patients with paresis. Attitudes towards euthanasia were measured in three dimensions: information support, liberal attitudes and conservative attitudes.

Results: The results showed no intergroup differences in two dimensions: liberal attitude and the fear of death. Physiotherapists were the least conservative in their attitudes in comparison to other participants and they appreciated the information support more than participants from the control group.

Conclusions: The results indicated that everyday contact with the patients suffering from paresis can increase conservative attitudes toward euthanasia but only among caregivers.

KEYWORDS: attitudes, euthanasia, fear of death, Terror Management Theory

STRESZCZENIE

Wstęp: Dopuszczalność eutanazji budzi wiele dylematów moralnych, dzieląc opinię publiczną na jej zwolenników i przeciwników. Wśród determinantów postaw wobec eutanazji wyróżnia się czynniki społeczno-kulturowe (przekonania, wiek) oraz indywidualne (cechy osobowości, wykonywanie zawodów medycznych).

Cel pracy: Celem prezentowanych badań było ustalenie postaw wobec eutanazji oraz poziomu lęku przed śmiercią u osób mających stały kontakt z osobami z niedowładami. Przyjęte hipotezy zakładały, że kontakt z chorymi niepełnosprawnymi, którzy wymagają stałej opieki, oraz rodzaj tego kontaktu modyfikuje odczuwany lęk przed śmiercią i postawy wobec eutanazji.

Materiał i metody: W badaniach wzięły udział dwie grupy kliniczne: fizjoterapeuci zajmujący się na co dzień rehabilitacją chorych po udarach mózgowych i bliscy chorych po udarach mózgowych, którzy sprawują nad nimi

stałą opiekę. Wyniki obu grup porównywano w wynikami grupy kontrolnej, którą stanowiły osoby niemające żadnych doświadczeń osobistych w opiece nad pacjentami z niedowładami. Postawy wobec eutanazji mierzono w trzech wymiarach: wsparcia informacyjnego, postawy liberalnej oraz postawy konserwatywnej.

Wyniki: Uzyskane rezultaty wykazały brak różnic międzygrupowych w dwóch wymiarach: postawy liberalnej oraz lęku przed śmiercią. Najmniej konserwatywną wobec eutanazji grupą okazali się fizjoterapeuci, oni także bardziej niż badani z grupy kontrolnej doceniali znaczenie wsparcia informacyjnego.

Wnioski: Osiągnięte wyniki pozwoliły wnioskować, że codzienny kontakt z obłożnie chorymi może wzmacniać konserwatywne postawy wobec eutanazji, ale tylko w grupie opiekunów.

SŁOWA KLUCZOWE: postawy, eutanazja, lęk przed śmiercią i umieraniem, Teoria Opanowywania Trwogi

Background

Attitudes towards euthanasia

The concept of *euthanasia* comes from a Greek word *euthanatos*, meaning *a good death*. The goal of euthanasia is to bring death to patients who are no longer able to withstand the physical suffering caused by the disease. The literature of the subject distinguishes between active euthanasia, i.e. voluntary, in which the patient deliberately decides about his/her own death, and passive - devoid of volunteering, where the decision to stop the treatment is made by doctors [1]. In active euthanasia, a death causing substance is administered, in passive euthanasia the treatment is stopped or never taken. The determining factor for the cessation of treatment is patient's condition, which is no longer improving and treatment can only contribute to suffering of a patient. In some countries, these issues can be dealt with in the last will, in which each person can indicate how they would like to be treated if they were not able to make a conscious decision. Euthanasia, understood as the right to die, is a source of controversy and has both numerous opponents and followers. The former emphasize that no one has the right to decide about ending human life, while the latter argue that besides the absolute right to lead life, its quality also counts, and that unbearable suffering justifies the decision to end a life. The problem of euthanasia and the question of attitudes towards it, is of a great interest to science, and research is often conducted by those who, by virtue of their profession (doctors, nurses, medical students), are forced to resolve moral dilemmas associated with euthanasia. A study conducted on physicians has shown that their position on this issue depends primarily on age, beliefs; mainly religious, and a country of their residence. [3,4]. Younger Australian doctors have been more "open" to euthanasia than older ones [5], whereas in the Netherlands, younger doctors have been more likely to discuss euthanasia with their patients [6]. Regarding religious beliefs, most studies confirm a negative correlation between religious beliefs and the consent to euthanasia. There are, however, studies that point to a moderate, but statistically significant positive relationship between religiousness and acceptance of euthanasia. [7]. Other studies conducted by the National Health Service (NHS) in the UK have shown that physicians with strong religious beliefs are less eager to change the law which banns euthanasia [8]. As far as a place of living is concerned, one can say that the attitude towards euthanasia is more positive among medical staff in those countries where active euthanasia is permitted, such as the Netherlands and Belgium. A study carried out among Belgian doctors showed that, although the researchers differed in their approach to euthanasia, they have allowed it to be performed [3].

On the other hand, studies conducted in Germany revealed that the level of acceptance of euthanasia by physicians depends on the nature of the disease and it is higher in case of terminally ill than when in concerns incurable patients, whose life is not endangered [12]. In addition, a direct contact of doctors and nurses with a terminal patient is conducive in reducing conservative attitudes towards euthanasia [13]. It seems that the key to determine the mechanism for shaping attitudes towards euthanasia in this case may be the fear of death.

Fear of death

Fear of death, classified as a category of existential fears, is a universal and inevitable phenomenon that becomes a source of suffering when an individual becomes aware of its irreversible and ultimate nature. Science distinguishes some existential fears of: loneliness, sense of enslavement, senselessness and emptiness, and fear of death. Most commonly fear of death includes: the fear of one's own death, somebody else's death and dying of another person [14]. Death and dying, analyzed in relation to one another, as well as the loved one, carry many consequences of a psychological nature. Certainly an individual is attempting to reduce such anxiety – mastering fear, as noted by: Tom Pyszczynski, Jeff Greenberg and Sheldon Solomon, creators of Terror Management Theory. In their view, the fear of death can occur on a conscious and unconscious level. Baka points out that other researchers share this view, adding that there is a reversed relationship between conscious and unconscious anxiety – the weaker the conscious fear, the stronger the unconscious one, and vice versa. Terror Management Theory says that there are two types of adaptation processes that allow for the control of the fear of death: direct, which involves a conscious attempt to remove thoughts of death from the center of attention and symbolic one that enables the activation of anxiety buffers by upholding the belief in

the rightness of the accepted worldview, while maintaining and raising self-esteem [15,16]. Numerous studies conducted by psychologists confirm that in terms of commonness of the fear of death, people show greater acceptance for their own system of values and worldview, they become more extreme in their opinions, and more critical in evaluating others. Among the most frequently cited causes of the fear of death, people list their fear of separation from their loved ones and the fear of physical suffering associated with dying [17].

Aim of the study

The purpose of the study was to determine whether experiences in taking care of people with disabilities – after traumatic brain injuries and strokes, has influence in attitudes towards euthanasia and experiencing death anxiety.

The following research hypotheses were adopted: 1. The clinical groups (physiotherapists and caregivers) will appreciate information support more than the control group. 2. The physiotherapists will present the most liberal attitudes towards euthanasia. 3. The caregivers of the disabled will present the most conservative attitudes towards euthanasia. 4. The physiotherapists and loved ones will have a higher level of the fear of death. 5. Fear of death will strongly correlate with conservative attitudes.

Material and methods

The study was based on the Questionnaire on Attitudes Towards Euthanasia by Alicja Głębocka and Agnieszka Gawor [18]. The method consists of three scales: the first, called the Information Support Scale, consists of 12 statements that measure the level of acceptance of health care workers' efforts to fully inform a patient and their family about his or her health condition and planned treatment regimens. The communication of such information should be done with respect to patient's right, in an empathetic manner and devoid of manifestations of dehumanization. The following items are among the claims of this scale: 1. A physician should ensure that adequate information is provided concerning the need to discontinue treatment; 2. A psychologist should prepare a family before they receive the information about the need to discontinue given treatment.

The second scale consists of 9 statements that measure the acceptance of liberal beliefs about euthanasia, for example: 1. It is up to the human being to decide whether he or she wants to be life-sustained and neither law nor ethics nor religion should interfere; 2. If a terminally ill patient wishes to not be life-sustained, the treatment should be stopped and they should be let to die.

The third scale measures conservative attitudes and consists of 7 statements, for example: 1. At all costs, you must keep each patient alive without paying attention to financial and social costs; 2. Persons who have helped the sick in committing suicide, should be severely punished.

In addition, the Associative Scale for the Study of the Hidden Fear of Death by Wisław Łukaszewski was used in the study. This tool measures the number of death related associations in two variants: 1. The fragments of the 24 words are given, which the subject is to complete: e.g., tr...[dea...], nag...[gra...], ...gon [...th]. For each supplementation indicating death, e.g. dead body, gravestone, death, the subject receives 1 point. The task of the subject is to add a word that they associated with the one given in the scale e.g. silence, enemy, kiss. If the words refer to death - grave or dead silence, deadly enemy or kiss of death, the subject receives 1 point.

Participation in the study was voluntary and anonymous, and the program of the study received a positive evaluation of the Research Projects Committee of the Department of Psychology and Humanities at Frycz Modrzejewski Krakow University.

The study involved 70 people, including 42 women and 28 men. 23 subjects were physiotherapists, who every day deal with the rehabilitation of people with neurological injuries, such as cerebral stroke or severe brain injury caused by traffic accidents. The second group was the relatives of patients with stroke or brain injury who needed constant care. The third group of subjects was treated as a control group, because it consisted of those who did not have medical profession, nor took care of severely ill, disabled relatives.

The average age of the subjects was 36.81 ± 8.77 years. Due to the specificity of the group, the caregivers were statistically significantly older ($M = 43.81 \pm 13.42$, $p < 0.05$) than the physiotherapists ($M = 34.66 \pm 9.08$) and the control group ($M = 35.55 \pm 14.65$). Of all the subjects, 68% lived in the city, the rest in the country, 68% were in a relationship, 27% had no partner, 5% did not answer the question about close interpersonal relations. The average time of looking after a severely ill, disabled relative was about 3.8 years.

Results

Analysis of the results started with the Multivariate Analysis of Variance MANOVA (for the factor I – patient's care time: the therapists vs. family vs. control group and factor II – sex: women vs. men) and three scales measuring attitudes towards euthanasia. Significant primary effect was obtained for the care factor [Wilk's lambda = 0.723, $F(6,106) = 3.10$; $p = 0.007$; $\eta 2 = 0.15$] and a negligible main effect for the sex factor [Wilk's lambda = 0.903, $F(3.70) = 1.87$; $p = 0.14$]. Post-hoc analysis using Fischer's NIR test showed that the physiotherapists were most likely to appreciate the importance of information support ($M = 4.57 \pm 0.31$) than the families ($M = 4.35 \pm 0.51$) and the control group ($M = 4.24 \pm 0.69$; $p < 0.05$). On the scale of liberal attitudes, there were no significant differences in grouping (the means for groups

were respectively 3.49 ± 0.95 – the physiotherapists, 3.36 ± 0.77 – the family of patients and 3.39 ± 0.66 – the control group) The greatest support for conservative attitudes towards euthanasia was obtained in the family (M = 3.20 ± 0.74), significantly different from the control group (M = 2.70 ± 0.52 $p < 0.05$) and the physiotherapists (M = 2.5 ± 0.60 $p < 0.05$).

In another analysis, it was examined whether the contact with people with disabilities, who require being taken care of, modifies the level of anxiety of the fear of death i.e. it differentiates the groups in terms of associations with death. There were no statistically significant differences – the average number of associations was 3.47 ± 2.16 in the physiotherapists, 2.81 ± 1.96 in the family, and 3.42 ± 3.01 in the control group ($p > 0.05$).

Correlational analysis has shown that information support positively correlates with a liberal attitude and negatively with a conservative attitude. The liberal attitude negatively correlates with a conservative attitude. With the fear of death positively correlates only the scale of information support (Table 1).

Further correlation studies have shown that attitudes towards euthanasia do not correlate significantly with the age of the subjects. Age, however, proved to be a significant correlation of the fear of death ($r = 0.38$; $p < 0.05$), as confirmed by other studies suggesting that older people are less afraid of death than young people.

Discussion

The accepted research hypotheses have been mostly confirmed. The first hypothesis stating that the clinical groups (rehabilitators and families of physically disabled people) will be more appreciative of information support than the control group has been confirmed. Particularly the physiotherapists, as well as the families of patients, expressed their full approval to inform patients and their families about the patient's condition and treatment methods. They fully understood the role of the subjective approach to patients and their relatives from the side of medical professionals. Despite the statistically significant differences, all the subjects highly valued the importance of information support. This result may be a guideline for people developing training programs for medical workers: physicians, nurses, medical rescuers and rehabilitators, regarding the need for effective communication with patients and prevention of dehumanisation [19].

The second hypothesis stating that the physiotherapists will show the most liberal attitudes towards euthanasia has not been confirmed. The results did not significantly differentiate the examined groups. This means that there is no reason to believe that daily work with a suffering, struggling patient with disabilities modifies attitudes that allow the use of euthanasia. Again, reference should be made to the indications of the individual groups, since acceptance of the liberal attitude towards euthanasia was not as great as of information support, but it was still higher than the average for the method adopted in the scale. Thus, it can be said that the subjects expressed rather positive attitudes towards passive and active euthanasia [18].

The hypothesis claiming that families of people with disabilities will show the most conservative attitudes towards euthanasia has also been confirmed. People who care for their disabled loved ones were the most conservative in attitudes towards euthanasia. The results obtained can be interpreted in at least three ways. First, they were due to age differences – caregivers were significantly older than physiotherapists and the subjects from the control group. Previous research has shown that there is a strong correlation between age and conservative attitudes [13]. Elderly people are also more religious, so it is difficult for them to accept the possibility of taking away anyone's life – compare GUS 2015 report [20]. Caregivers were also able to perceive their loved ones as severely ill, but not terminally ill, whose health and quality of life will improve in the future [12]. They could also accept the illness of a loved one – to reconcile with it and to develop effective custody mechanisms. It is likely that the average length of care was up to 4 years. The least conservative in their minds were the physiotherapists. Their attitude could be derived from professional experience: every day they not only meet with human suffering, but also with death. Similar results were obtained in the study of medical staff in intensive care units. They were also less conservative than physicians and nurses working in the wards, where they were not constantly in contact with death and dying [13].

Another hypothesis, according to which the physiotherapists and the patient's families are characterized by higher levels of fear of death has not been confirmed. It is difficult at this stage to speculate on the reasons for obtained results. Perhaps such differences do not exist – people who come into everyday contact with the seri-

Table 1. Correlation coefficients between attitudes towards euthanasia, fear of death and patient's care time

	Information support	Liberal attitudes	Conservative attitudes	Fear of death	Patient's care time
Information support	1.00	0.29*	-0.30*	0.28*	0.11
Liberal attitudes	0.29*	1.00	-0.54*	-0.00	0.10
Conservative attitudes	-0.30*	-0.54*	1.00	0.01	0.02
Fear of death	0.28*	-0.00	0.01	1.00	-0.07
Patient's care time	0.11	0.10	0.02	-0.07	1.00

* – $p < 0.05$

ously ill, though they are in a situation that encourages the activation of the fear of death, simply reduce it effectively. For the regulation of death anxiety, the investigators could use the mechanisms described in Terror Management Theory or as indicated by Łukaszewski [14,15]. Perhaps the lack of difference is the consequence of the use of the wrong research method – projection methods raise a lot of controversy amongst researchers, but in the case of this study, the use of the questionnaire scale could trigger an autonomous factor that would result in the disclosure of "the ideal self" or "the ought self" instead of "the actual self", which was definitely to be avoided. In the end, the lack of difference could have been determined by the selection of the research group – it is known that older people fear death much less than younger people, which was also confirmed in the present study [14]. In order to resolve these doubts, further studies should be carried out involving older physiotherapists or younger caregivers, and thus ensure the homogeneity of the clinical and control group. However, reaching such subjects is extremely difficult, as the rehabilitation of neurologically ill patients is usually done by young physiotherapists, and home care for patients with paresis is mostly done by older people.

The last hypothesis, which assumed that the fear of death would correlate strongly with conservative attitudes, was not confirmed. It turned out that the fear of death correlated significantly only with the scale of information support. Probably collecting information on the health status of severely ill people (relatives and patients) promotes the activation of the fear of death, raising awareness of its inevitability [14]. Although this phenomenon may seem seemingly dangerous to the human psyche, modern psychology shows that open attitude to disease, its symptoms, mechanisms and therapies is more conducive to recovery than to the avoidance of information or denial of disease.

Conclusions

To summarize the research presented, it should be stated that it has shown a strong, positive attitude towards information support that medical staff should provide to patients and their families. It has also revealed the advantage of liberal attitudes over conservative ones and stronger conservative attitudes towards euthanasia in the caregivers group. The study did not give a clear answer whether the fear of death modifies attitudes towards euthanasia. This hypothesis will be verified in further experimental research that will allow to determine whether or not in the case of commonness of death, according to the assumptions of the Terror Management Theory, existing attitudes are reinforced and self-righteous view of acceptability of euthanasia are rejected. Everyday contact with sick people can strengthen conservative attitudes towards euthanasia, but only in the group of caregivers.

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Correspondence address:
Alicja Głębocka
Krakowska Akademia im. Andrzeja Frycza Modrzewskiego
Wydział Psychologii i Nauk Humanistycznych
Katedra Psychologii Klinicznej
ul. Herlinga-Grudzińskiego 1
30-705 Kraków
E-mail: aglebocka@afm.edu.pl

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THE KNOWLEDGE OF WOMEN WITH EPILEPSY ON MOTHERHOOD

WIEDZA KOBIET CHORYCH NA PADACZKĘ NA TEMAT MACIERZYŃSTWA

Ilona Jasnos[1 A–C]
Aleksandra Cieślik[1 B,D]
Joanna Wanot[2 B,E]
Justyna Sejboth[3 B,F]
Dariusz Szurlej[3 B,F]
Piotr Gurowiec[4,5 B]

[1] Department of Neurological and Psychiatric Nursing, School of Health Sciences, Medical University of Silesia in Katowice, Poland

[2] Department of Anaesthesia and Intensive Nursing Care, School of Health Sciences in Katowice, Medical University of Silesia in Katowice, Poland

[3] Department of Anaesthesia and Intensive Therapy, School of Health Sciences, Medical University of Silesia in Katowice, Poland

[4] Nursing Faculty, Opole Medical School, Poland

[5] Institute of Occupational Medicine and Environmental Health in Sosnowiec, Poland

A – przygotowanie projektu badania | study design, **B –** zbieranie danych | data collection, **C –** analiza statystyczna | statistical analysis, **D –** interpretacja danych | interpretation of data, **E –** przygotowanie maszynopisu | manuscript preparation, **F –** opracowanie piśmiennictwa | literature review, **G –** pozyskanie funduszy | sourcing of funding

SUMMARY

Background: Epilepsy is one of the most common neurological conditions. Approximately half of the 50 million suffering from epilepsy are women. Although the pregnancy in the course of epilepsy is considered a high risk pregnancy, based on many observations, it is estimated that the chance of delivering a healthy child by a woman with epilepsy exceeds 90%. However, the risk of congenital defects is 2–3 times higher than in healthy women. It is mostly caused by antiepileptic drugs.

Material and methods: The study was conducted on 139 women with epilepsy, aging 18–40 years, who were under supervision of the neurology clinic in the Silesia voivodeship. The studies were conducted using the survey elaborated by the authors for women in reproductive age with epilepsy, based on the questionnaire published by Polish Center of Epilepsy for Women.

Results: Most of the surveyed women have had epilepsy for longer than 10 years (52.52%). The smallest number of women has been suffering from epilepsy for less than a year (7.19%) A majority of respondents were treated with monotherapy (51.8%). Almost half of the respondents did not have a child (57.55%). According to 76.26% of respondents epilepsy is not a contraindication for having children. A statistically significant correlation was demonstrated ($p = 0.048$) between education and the desire to get information about contraception and its impact on epilepsy.

Conclusions: 1/3 of interviewed women with epilepsy has insufficient knowledge of responsible motherhood and it concerns mostly women with the lowest level of education. Most women suffering from epilepsy become interested in issues related with motherhood only after they become pregnant whereas, women with at least secondary education are more interested in issues of procreation and responsible motherhood.

KEYWORDS: epilepsy, pregnancy, folic acid

STRESZCZENIE

Wstęp: Padaczka jest jedną z najczęstszych chorób neurologicznych. Na całym świecie cierpi na nią ok. 50 mln osób, z czego połowa to kobiety. Pomimo że ciąża w przebiegu epilepsji zaliczana jest do ciąż wysokiego ryzyka, na podstawie wielu obserwacji przyjmuje się, że szansa urodzenia zdrowego dziecka przez kobietę z padaczką

wynosi ponad 90%, ale ryzyko wystąpienia wad wrodzonych jest 2–3-krotnie wyższe niż w przypadku ciąży u kobiety zdrowej. Wynika to głównie z faktu stosowania leków przeciwpadaczkowych.

Materiał i metody: Badaniami objęto 139 kobiet chorych na padaczkę, w wieku od 18 do 40 lat, będących pod opieką poradni neurologicznych na terenie województwa śląskiego. Badania przeprowadzano przy pomocy autorskiego kwestionariusza ankiety dla kobiet chorych na padaczkę w wieku rozrodczym, opracowanego na podstawie kwestionariusza ankiety udostępnionego przez Ogólnopolskie Centrum Padaczki Dla Kobiet.

Wyniki: Wśród ankietowanych przeważały kobiety z czasem trwania choroby ponad 10 lat – 52,52%. Najmniej liczną grupę (7,19%) stanowiły kobiety chorujące krócej niż 1 rok. Wśród ankietowanych przeważały kobiety, u których stosowano monoterapię (51,8%). Ponad połowa respondentek nie miała potomstwa (57,55%). W opinii 76,26% respondentek padaczka nie stanowi przeciwwskazania do posiadania potomstwa. Wykazano statystycznie znamienną zależność (p = 0,0479) pomiędzy wykształceniem a chęcią uzyskania informacji o antykoncepcji i jej wpływie na padaczkę.

Wnioski: 1/3 ankietowanych kobiet chorych na padaczkę ma niedostateczną wiedzę na temat świadomego macierzyństwa i dotyczy to przeważnie kobiet z najniższym wykształceniu. Zainteresowanie większości kobiet chorych na padaczkę zagadnieniami związanymi z macierzyństwem pojawia się dopiero po zajściu w ciążę, przy czym kobiety z co najmniej średnim wykształceniem wykazują większe zainteresowanie zagadnieniami prokreacji i świadomego macierzyństwa

SŁOWA KLUCZOWE: padaczka, ciąża, kwas foliowy

Background

Epilepsy is one of the most common neurological conditions. Approximately 50 million of people around the world suffers from it and half of them are women. In Germany, approximately 400 thousand of women have epilepsy and for every 1000 pregnancies 3–4 women are suffering from epilepsy. In the USA the number of women in reproductive age suffering from epilepsy amounts to approximately 500 thousand [3]. It is assumed that in Poland epilepsy affects over 400 thousand of people (approx. 1% of the entire population), and women with epilepsy constitute approximately 0.5–1% of all pregnant women [4.5]. Although pregnancy in the course of epilepsy is considered a high risk pregnancy, based on many observations, it is estimated that the chance of delivering a healthy child by a woman with epilepsy exceeds 90%. The risk of birth defects is 2–3 times higher than in healthy women, which is mostly caused by antiepileptic drugs. Many women, despite epilepsy, decide to have children however, almost 1/3 decide not to. [5] It is the result of insufficient knowledge. A survey conducted in 2002 by Bella et al. on British women with epilepsy indicated that 38–48% of women were informed about contraception, pregnancy planning and the role of folic acid [6].

The aim of the study

The aim of this study was to determine the level of knowledge on procreation and motherhood in women with epilepsy.

Material and methods

The study was conducted on 139 women with epilepsy, aging 18–40 years, who were under supervision of the neurology clinic in the Silesia voivodeship. The studies were conducted using the survey elaborated by the authors for women in a reproductive age with epilepsy, based on the questionnaire published by Polish Center of Epilepsy for Women (the consent of the Head of the Center, Dr Joanna Jędrzejczak, MD was obtained). The survey was conducted once and the time to fill the questionnaire did not exceed 20 minutes. Statistical analysis was performed using Statistica v.7.1. PL provided by StatSoft. In analysis, the statistical significance was set at $p(a) < 0.05$. Alfa-Cronbach statistics were used to evaluate the reliability of the questionnaires. Reliability of internal compliance for patients (a-Cronbach) was estimated at 0.724.

Results

The number of single women slightly predominated in the study (51.8%). The highest number of respondents – 46.04% had secondary education. The vast majority of respondents did not work, – some were on pension for handicapped (35.25%), some did not work (17.99%), and some continued education (23.02%). The highest number of working people was in the group of women with higher education, which was statistically significant ($p < 0.001$).

Most of the surveyed women have had epilepsy for longer than 10 years (52.52%). The fewest number of women has been suffering from epilepsy for less than a year (7.19%). A majority of respondents were treated with monotherapy (51.8%). Only 20.89% of women were under supervision of a gynecologist on regular bases. Almost half of the respondents did not have a child (57.55%). In the group of women with children, most women had one child that is 23.74%, 14.39% two children and 4.32% had three children. According to 76.26% of respondents, epilepsy is not a contraindication for having children. The women with basic level

of education knew the least about pregnancy planning. 56.83% spoke with their attending physicians about possible pregnancy and only slightly over 1/3 of them received comprehensive information on maternity. Less than half of the respondents (43.88%) learned about folic acid supplementation in the reproductive age from a physician. 33.09% of surveyed women took folic acid and B group vitamins were taken nearly by half of the respondents. Women with a higher level of education significantly more often used folic acid for prophylaxis ($p = 0.009$). Only slightly over 1/3 of the respondents talked about contraception with their doctors. In comparison to the other respondents, a lower percentage of women with higher education did not know anything about hormonal contraception. A statistically significant relationship was demonstrated ($p = 0.048$) between education and willingness to get information about contraception and its impact on epilepsy. The most interested in this topic were women with secondary (50%) and higher education (42%). Only 1/4 (25.9%) of the respondents gave a correct answer to the question about the percentage of healthy children born by women with epilepsy. Whereas, 17.27% of women stated that only less than half of patients with epilepsy will give birth to a healthy child. Women with higher education presented significantly more knowledge ($p = 0.012$) on this subject.

On the other hand, the question of whether antiepileptic drugs may cause congenital defects of the fetus was not answered by almost half of respondents. Women with vocational education knew the least about teratogenic effect of some anti-epileptic drugs. All women with higher education knew that the dose must be determined by the attending physician before pregnancy. More than half (53.96%) of the surveyed women believed that seizures could affect the developing fetus. Women with secondary (70%) and higher education (62%) were more likely ($p = 0.007$) to look for more information about the effects of antiepileptic drugs on the fetus. As many as 36.69% of surveyed women, regardless of their education, did not know what are the delivery options in women with epilepsy. As many as 30.94% of women claimed that the pregnancy has to end with a caesarean section and 32.37% that it does not have to.

More than half of respondents (51.8%) could not answer the question of whether a woman with epilepsy can breastfeed. The other women gave almost as many positive answers as negative ones (25.9% and 22.3% respectively). There was no statistically significant correlation between the level of education and the level of knowledge on this matter. 69.06% of respondents said that it is necessary to provide information on safe childcare to women with epilepsy, while 12.95% of respondents did not find it necessary. Women, who already had children were asked to assess, if they received sufficient information on safe childcare. None of the respondents answered 'yes' to this question. 70.5% of the surveyed women indicated attending physicians as the source of knowledge about pregnancy, 31.65% indicated available literature, 29.5% online guides, 17.98% leaflets and 6.47% nurses or obstetricians. There was a statistically significant relationship between the sources of information used, such as books, internet, or leaflets and women's education level. First two sources were used mostly by women with higher education, whereas women with vocational education used the two least frequently. Leaflets were used significantly more often by women with secondary education. 85.61% of respondents said that women with epilepsy expect to get the most information from their attending physicians, 17.27% from guides, 14.39% from media, 10.79% from associations for epilepsy, 7.91% from family and 7.19% from nurses and obstetricians. To the question of when a woman with epilepsy should receive information on maternity issues, the women responded as follows: long before planned pregnancy – 46.76%, immediately after diagnosis – 37.41%, when asked – 23.74%, just before birth – 22.3%, at the beginning of pregnancy – 1.44%.

To the question of whether epilepsy did affect, does affect, and will affect the decision about getting pregnant women responded as follows: 53.24% said "yes", 28.78% said "no", and 17.9% did not know.

Discussion

Although women with epilepsy have more than 90% chance of having a healthy baby, their knowledge of maternity seems to be insufficient. Two surveys carried out in the United Kingdom on 795 and 2000 British women with epilepsy in reproductive age revealed that these women do not have sufficient knowledge on procreation. The respondents expressed the need for greater interest and information on contraception, pregnancy and interactions of antiepileptics and contraceptives [5,6,7]. German surveys showed that women with epilepsy did not receive information regarding responsible motherhood, although they were interested in it. At the same time almost 1/3 of surveyed women with epilepsy in this country assessed their knowledge on motherhood issues as good or very good [2,8]. Similarly, the Canadian study showed low level of knowledge about the effects of epilepsy on pregnancy [9]. So far, only one survey has been conducted in Poland to evaluate the knowledge of women with epilepsy on this disease and its effect on maternity. This study was conducted in 2003 by the Polish National Epilepsy Center for Pregnant Women in Epileptology Foundation. The survey developed by the Center also constituted the basis for this study. The demographic characteristics of the women surveyed in our study were similar to the characteristics of women in the study conducted by the National Epilepsy Center. One third of women in our study were familiar with issues regarding contraception, which was 10% more than in the survey carried out by Polish National Center for Epilepsy. Women received Information about contraception from their doctor in both studies [10]. The women with epilepsy surveyed in

South America probably did not have such information, since 80% of them admitted that they do not now any form of contraception. Sixty percent of them declare at the same time that their partner uses condoms [11]. It is known that anti-epileptic drugs that induce microsomal enzymes in the liver interact with contraceptives and therefore may reduce their effectiveness. Thus, the choice of proper contraception requires a close cooperation between the neurologist and the gynecologist [12]. In the presented study, although 1/3 of surveyed women knew that a woman with epilepsy can use hormonal contraception, they did not know that it may interfere with antiepileptic drugs. As many as 65% of surveyed American women and half of the American women in the reproductive age did not have such information [7,13]. Women in Norway were better informed on this subject, as 71% of women treated with hepatic enzyme-inducing antiepileptic drugs knew that hormonal contraception may be ineffective in their case, and nearly half of them received this information from their neurologist [14]. It is not recommended to make any changes in pharmacological treatment of patients with epilepsy [1,3,15]. More than 80% of the respondents in our study were aware of the need to establish treatment before pregnancy and to follow medical recommendations, and this result was similar to the percentage reported in the study carried out by the Polish National Center for Epilepsy [10]. In both studies, nearly 60% of women consulted their neurologist before the pregnancy. In both studies, almost 10% of respondents considered epilepsy to be a contraindication for having a child [10]. The problem of pregnancy planning in epileptic women is also present in other countries. 1/5 of surveyed women in Norway and 1/4 in Germany decided not to have children because of epilepsy [8,14]. In England less than half of the surveyed women planned their pregnancy and in the United States nearly half of pregnancies in epileptic women were unplanned [11,16]. In a study conducted in Latin America, about 60% of pregnant women knew about the need to plan pregnancy, but most of them get information they needed only after they became pregnant [11]. Nearly half of respondents in both surveys carried out in Poland and over a half surveyed American women, did not know about teratogenicity of antiepileptic drugs [10,13]. Folic acid administered at the appropriate dose before planned pregnancy seems to minimize the risk of neonatal nervous system defects [16]. In our study and the survey carried out by the Polish National Center for Epilepsy less than half of the surveyed women knew about the need of folic acid supplementation at least 3 months before planned pregnancy and during the first 3 months of pregnancy.

In both studies, only 1/3 of patients used folic acid [10]. The higher education of women with epilepsy was, the more often folic acid they used. The same result was obtained in the Norwegian study [18]. In the study conducted in Buenos Aires, 90% of them did not know about the benefits of folic acid [11].

Approximately half of the respondents did not know about the delivery options in epileptic women. These results were similar with obtained in the survey performed by the Polish National Center for Epilepsy [10]. Although epilepsy is not an indication for caesarean section (except in cases with frequent seizures), a study carried out in Łódź by the Institute of Mother›s Health Center observed that pregnant women with epilepsy were more likely than the controls to perform caesarean section based on other indications than obstetric ones. [2,11]. Also in the Norwegian study, there was a greater incidence of cesarean section in women with epilepsy than in the controls [18].

Natural feeding brings unquestionable benefits to both the baby and the mother. Only a small fraction of most of the drugs used by the breastfeeding mother penetrate to the breast milk and breastfeeding additionally protects the newborn from withdrawal syndrome [17]. In the discussed study, almost half of the respondents did not know, whether they could breastfeed their babies. The same result was obtained in the study of the Polish National Epilepsy Center [10]. In addition, the surveyed women who have already had children claimed that they have not previously received information on safe childcare and believed that such information was necessary. In the British study, almost half of women were informed about safe childcare and most women stressed their usefulness [19]. Whereas, women who participated in the German survey expressed their concern about safety of their children during seizures and were afraid that seizures may scare their children [8].

The women surveyed in our study stressed the need for availability of different information sources regarding their condition and motherhood, and the main outsources of information included doctors and nurses, literature, online guides and leaflets. German studies additionally suggested to additionally perform special course and trainings regarding epilepsy [8]. Norwegian women with epilepsy in addition to information from neurologists, willingly used advices of general practitioners, friends and relatives, as well as leaflets, media and patient organizations [14].

Conclusions

1. One third of the interviewed women with epilepsy have insufficient knowledge of responsible motherhood and this is true mostly for women with the lowest education.
2. Most women suffering from epilepsy become interested in issues related with motherhood only after they become pregnant whereas, women with at least secondary education are more interested in issues of procreation and responsible motherhood.

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Correspondence address:
Piotr Gurowiec
Państwowa Medyczna Wyższa Szkoła Zawodowa w Opolu
ul. Katowicka 68
45-060 Opole
Phone: (+48) 77 44 10 882, (+48) 605 183 246
E-mail: piotr73-1973@tlen.pl

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EVALUATION OF THE EFFECTIVENESS OF SELF-MASSAGE IN DYSMENORRHEA

OCENA EFEKTYWNOŚCI AUTOMASAŻU W REDUKCJI BÓLU MENSTRUACYJNEGO KOBIET

Anna Dobrzycka[1 A,B,C,D]
Iwona Wilk[2 A,D,E]

[1] PhD Studies, Physiotherapy Faculty, University School of Physical Education in Wroclaw, Poland
[2] Cosmetology Department, Physiotherapy Faculty, University School of Physical Education in Wroclaw, Poland

A – przygotowanie projektu badania | study design, **B –** zbieranie danych | data collection, **C –** analiza statystyczna | statistical analysis, **D –** interpretacja danych | interpretation of data, **E –** przygotowanie maszynopisu | manuscript preparation, **F –** opracowanie piśmiennictwa | literature review, **G –** pozyskanie funduszy | sourcing of funding

SUMMARY

Background: Primary menstrual pain affects approximately 45–95% of women between 20–25 years of age. A non-invasive method in reducing menstrual pain by relaxing muscle tension is a massage. It brings the structural tension to normal levels and restores correct blood flow in the pelvic region.

Aim of the study: The aim of this study was to test the usefulness of a self-massage in reducing the primary menstrual pain.

Material and methods: Out of 180 female students, 34 women aged 19–30 were qualified for the study with the use of a survey. Pittsburgh Sleep Quality Index questionnaire and visual analog pain scale (VAS) were used for the assessment before and after the therapy. Women in the experimental group performed tensegrity self-massage a few days before the onset of bleeding for two menstrual cycles. Results were analyzed using Student's t test and one-way analysis of variance (ANOVA).

Results: Applying the self-massage statistically proved to significantly reduce the perception of pain ($p = 0.001$) and the number of days with pain ($p = 0.007$) in the experimental group. Within this group, the difference was noted in all participants except one. In addition, a third measurement was taken in order to assess the duration of the effect. The result of the average pain and number of days of pain after the extension was higher than in the second evaluation, but significantly lower than before the experiment. The significance was in accordance with the evaluation of pain, $p = 0.002$ and number of days $p = 0.03$. Evaluation of the quality of sleep in the experimental group was significantly better ($p = 0.04$) than before treatment.

Conclusions: Self-massage reduces primary menstrual pain in women and can be used as an assisted form of self-therapy. It improves the quality of sleep.

KEYWORDS: massage, dysmenorrhea, physical therapy

STRESZCZENIE

Wstęp: Pierwotny ból menstruacyjny dotyczy około 45–95% kobiet od 20. do 25. roku życia. Metodą nieinwazyjną w jego redukcji poprzez rozluźnienie mięśni jest masaż. Dzięki niemu dochodzi do normalizacji napięcia struktur oraz przywrócenia poprawnego ukrwienia w obrębie miednicy mniejszej.

Cel pracy: Badanie miało na celu sprawdzenie przydatności automasażu w redukcji pierwotnego bólu menstruacyjnego.

Materiał i metody: Spośród 180 studentek za pomocą ankiety wstępnej zakwalifikowano do badań 34 kobiety w wieku 19–30 lat. Do oceny przed terapią i po niej użyto kwestionariusza jakości snu Pittsburgh oraz wizualno-analogową skalę bólu (VAS). Kobiety z grupy eksperymentalnej przez dwa cykle menstruacyjne wykonywały automasaż tensegracyjny kilka dni przed wystąpieniem krwawienia.

Wyniki: Po zastosowaniu automasażu nastąpiło istotne zmniejszenie odczuwania bólu ($p = 0{,}001$) oraz liczby dni z bólem ($p = 0{,}007$) w grupie eksperymentalnej. Mediana w grupie eksperymentalnej przed terapią wynosiła

w wizualno-analogowej skali bólu 6, a po terapii 2. W obrębie tej grupy różnicę zauważono u prawie wszystkich kobiet – z wyjątkiem jednej. Dodatkowo dokonano trzeciego pomiaru w celu sprawdzenia czasu trwania efektu automasażu. Średni ból i liczba dni z bólem po przedłużeniu były wyższe niż w drugiej ocenie, jednak istotnie niższe niż przed eksperymentem (p = 0,002 oraz liczby dni p = 0,03). Ocena jakości snu w grupie eksperymentalnej była znamiennie lepsza (p = 0,04) niż przed zastosowaniem terapii.

Wnioski: Automasaż redukuje pierwotny ból menstruacyjny kobiet i może być stosowany jako forma autoterapii wspomaganej. Automasaż wpływa również korzystnie na jakość snu.

SŁOWA KLUCZOWE: masaż, bolesna miesiączka, fizjoterapia

Background

It is estimated that 45–95% of women report pain during menstruation. Primary menstrual pain, which is the one that occurs without coexisting disease in the pelvis, usually affects women between 20–25 years of age [1]. This is a significant problem, as about 20% of them report that the pain prevents them from performing daily activities [2]. They give up going to school or work, have problems with participating in social life, during learning and physical activity [3]. It directly and negatively affects their quality of life, mood and sleep [4,5]. Although, so far the causes of primary menstrual pain have not been found, there are many hypotheses on this subject. It is believed that the pain is generated by overproduction of prostaglandins. Among other things, they cause the stimulation or inhibition of uterine smooth muscle contraction as well as ischaemia. Reduced blood flow during menstruation, in turn, contributes to pain [1]. Young women usually cope with that pain on their own [6] and only 6% of them consult a doctor for a medical advice [7]. Pharmacological agents, and most commonly nonsteroidal anti-inflammatory medications such as naproxen, diclofenac or ibuprofen are commonly used and fairly effective treatments. However, about 15% of women do not react to them at all, and the rest is exposed to the side effects of their consumption [2,8]. The second most commonly used treatment is oral hormonal therapy. Certainly, these medications can indirectly ease pain by reducing the amount of and shortening bleeding time [9]. It is worth remembering, however, that oral contraception also entails the risk of side effects and an increased risk of cardiovascular disease such as hypertension and venous thromboembolism [10]. Application of warm compresses and transcutaneous electrical nerve stimulation (TENS) have positive effects on primary menstrual pain [11]. Currently used and based on scientific research are methods such as: acupuncture, acupressure [12], acupuncture with vitamin K [13] and physical exercise [14]. Most of these methods are used after the onset of symptoms, what leads to the creation of a pre-treatment and preventing measure of experiencing pain. A non-invasive method in reducing menstrual pain by relaxing muscle tension is tensegrity massage, which brings the structural tension to normal levels and restores correct blood flow in the pelvic region. So far, little work has been done to describe the use of tensegrity massage in this type of ailment. The last research project, based on this type of therapy, was published ten years ago [15]. In other experiments the massage was applied locally [16–18]. This prompted the authors to explore the subject and attempted to determine its usefulness in alleviating symptoms of primary dysmenorrhea syndrome. Due to the increasing pace of life of young women and their greater independence and awareness of their own body and health, a medical massage has been used in the study, which can be performed by the patients themselves at home.

Aim of the study

This study was to test the usefulness of self-massage in reducing the primary menstrual pain.

Material and methods

Preliminary study involved a group of 180 students of the Academy of Physical Education and the Medical University of Wroclaw aged 19–30. Out of this group, 34 women aged 20–30, who met these criteria for inclusion in the study were enrolled: regular menstrual pain, no hormonal contraception, no experience of labor, no experience of pelvic inflammatory disease, no endometriosis, adenomia, sarcoma and dyspareunia. Subsequently, the women were randomly assigned to the experimental group (17 participants) and the control group (17 participants) (Figure 1). The epidemiological aspect was a decisive one in choosing the age groups. The lack of hormonal contraception was also taken into account, in order to avoid the presence of a disturbing factor, due to its therapeutic purpose. Pittsburgh Sleep Quality Index (PSQI), which included parameters such as difficulties in falling asleep, difficulties in maintaining sleep continuity, daytime functioning, sleep disorders and sleep-related questions, were used to evaluate the quality of sleep in one room with the person being examined. The pain was measured by a questionnaire that included a visual-analog scale (VAS). The first assessment of the subjects was performed after the end of the last menstrual cycle. The calculations were made using the Statistica 12 computer program from Stat-Soft company. Student t-test and one-way analysis of variance (ANOVA) were used to evaluate the differences between variables.

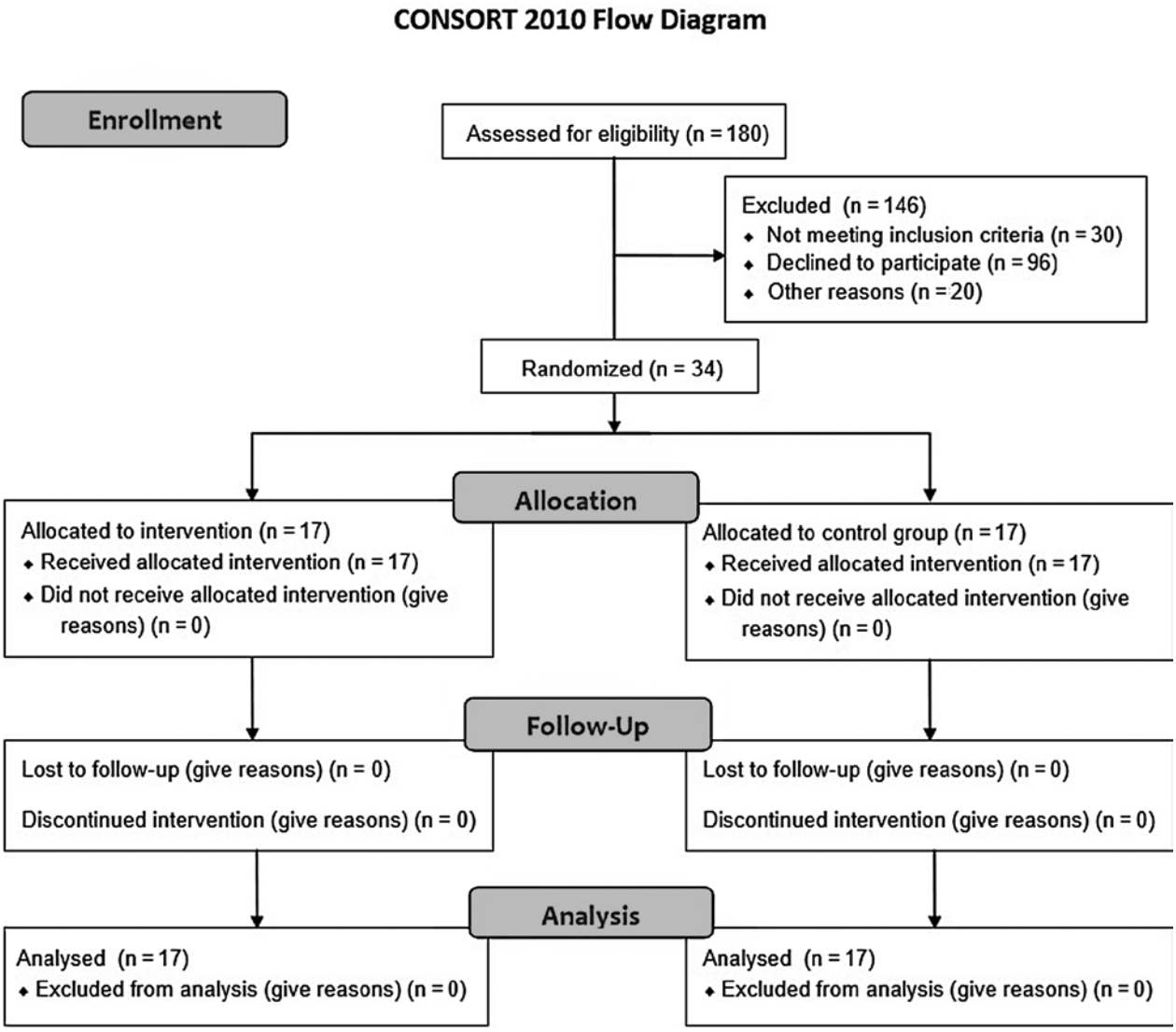

Figure 1. Flow chart showing participants in the study

Methodology of the massage

The massage was performed in a sitting position. Ischiadic tubers were based on the edge of a stool or chair. Lower limbs were parallel, flexed in hip, knee and ankle joints at an angle of 90 degrees. The torso was erect and the head in an intermediate position. Each technique was performed for 2 minutes on a given side of the body. The massage resulted in normalization of muscle tension and increased arterial blood flow through the upper and lower gluteal arteries, which are the wall branches of the internal iliac artery. Techniques were performed in the right order (Table 1).

The massage was applied for two cycles (3 days in each) starting 6 days before the first day of bleeding. At the end of bleeding in the second cycle, the women from both the study and control group completed the

Table 1. Description of the purpose of performing specific massage techniques for respective structures

Purpose	Structure	Technique
Elastic deformation and normalization of the tension of the massaged structure; Facilitate blood flow from the upper and lower gluteal artery.	Thoracolumbar fascia	Circular movement
	Gluteus medius muscle	Transverse kneading
	Quadratus lumborum muscle	Rubbing
	Lliolumbar muscle	Point rubbing on the lesser trochanter of the femur
	Piriformis muscle	Point rubbing on the greater trochanter of the femur
	Adductor muscles of the tight	Transverse kneading
	Gluteus maximus muscle	Rubbing around the plate of iliac crest

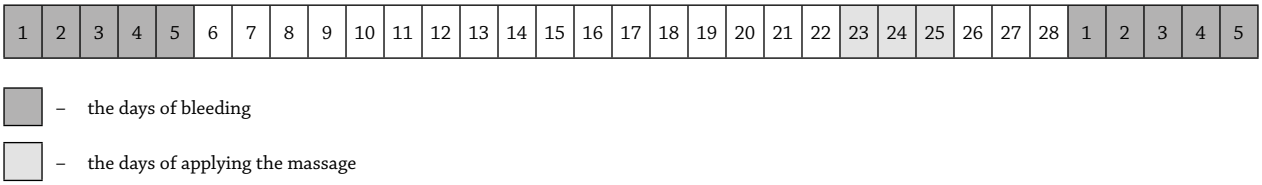

Figure 2. Diagram of the days of applying the massage

survey again. In order to test the effect of the therapy, a person from the experimental group was evaluated after the third cycle from the start of the study. The selection of massage days is shown in Fig. 2.

Results

After applying self-massage the reduction in the perception of pain (p = 0.001) and the number of days with pain (p = 0.007) in the experimental group turned out to be statistically significant. Within this group, the difference was observed in all the women except one. There was also a significant difference in the degree of pain in the second measurement between the experimental group and the control group (p = 0.01). The median in the experimental group prior to therapy was in the visual-analog scale of pain 6, and after therapy 2. In the control group, the median did not change. Both the first and second measurements were respectively on the pain scale 5 and the number of days with pain was 3. Within the treatment group, a third measurement was performed to check the duration of the self-massage effect. The average pain and number of days with pain after prolongation was higher than in the second assessment, but significantly lower than before the experiment. Significance was based on pain assessment (p = 0.002) and number of days (p = 0.03). The result is shown in Fig. 3 and Fig. 4.

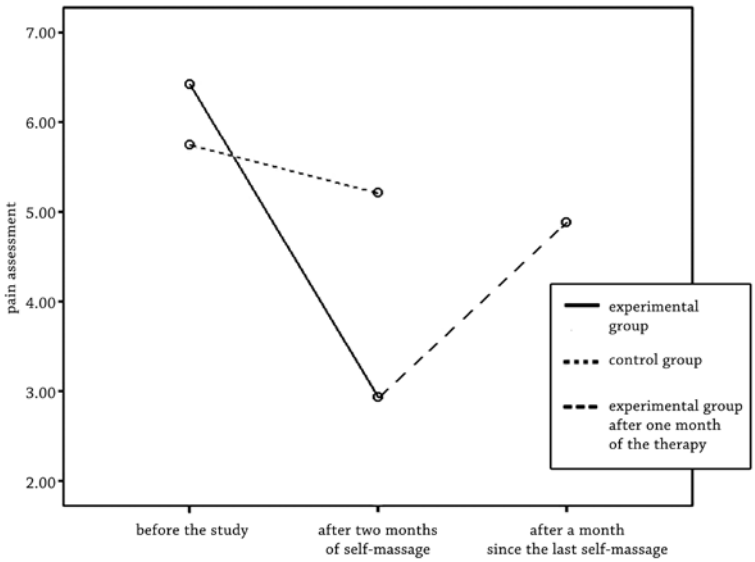

Figure 3. Change in the assessment of pain in the experimental and control group

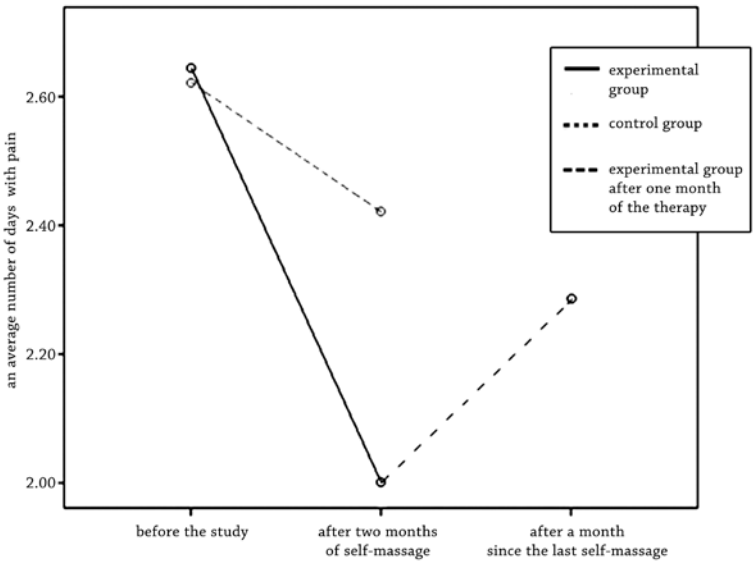

Figure 4. Change in the number of days with pain in the experimental and control group

After analyzing the data collected from the sleep quality questionnaire before and after the experiment, the positive effect of the therapy in the experimental group was noted (p = 0.04). There was no statistically significant change in the control group.

Discussion

Occurrence of primary menstrual pain is quite a common problem among young women. Treatment is primarily based on pharmacotherapy or the use of alternative medicine [2]. However, during the therapy it is worthwhile to focus on what causes the pain rather than on its existing symptoms. Based on the assumption that the cause is an abnormal blood flow during menstruation, it is definitely right to resort to soft tissue therapies. Recent reports suggest that the use of deep transverse massage of spinal muscles and lumbar traction reduces primary menstrual pain [16]. Bakhtshirin and co-authors investigated the effect of

massage using olive oil and lavender oil. Both groups experienced a decrease in perceived pain during menstruation [17]. In another research project, Azima and co-authors also observed a beneficial effect of massage on reducing such ailments by performing isometric massage or exercises. A definite improvement, however, occurred especially through the application of the first factor [18]. Efficacy on soft tissues is confirmed by the study, because after its use in the experimental group the pain was significantly reduced in 94% of the subjects. It can therefore be said that this is a promising method in reducing menstrual pain. Certainly, research related to the use of massage for this purpose should be continued and implemented in a larger group of patients. The number of people was limited mainly due to the lack of willingness to participate in the study and use of oral hormonal contraception. An additional factor that increased the risk of error was the lack of possibility to apply the massage by an independent therapist, as the women in the study group performed the massage themselves. Nevertheless, this is a form of therapy that can be used as an additional treatment to the particular benefit of patients who want to cope with their ailments on their own. In addition, the massage is an easy and enjoyable tool and does not carry almost any financial costs.

Conclusions

Self-massage reduces primary menstrual pain and can be used as a form of assisted therapy, particularly for patients who want to cope with their ailments on their own. Its partial effect persists during the next cycle and improves sleep quality.

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Correspondence address:
Julianna Dobrzycka
ul. Ćwiklińskiej 8
64-100 Leszno
Phone: (+48) 725 798 731
E-mail: juliannadobrzycka@gmail.com
E-mail: iwona.wilk@awf.wroc.pl

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ASSESSMENT OF THE NUTRITIONAL HABITS OF JUNIOR HIGH SCHOOL STUDENTS FROM THE KŁOMNICE DISTRICT IN RELATION TO OBESITY

OCENA NAWYKÓW ŻYWIENIOWYCH MŁODZIEŻY GIMNAZJALNEJ Z GMINY KŁOMNICE W ASPEKCIE WYSTĘPOWANIA OTYŁOŚCI

Ewa Malczyk[A–F]
Marzena Zołoteńka-Synowiec[D,E]
Beata Całyniuk[D,E]
Marta Misiarz[D,E]
Joanna Rybak[A,B,D,F]

Institute of Health Sciences,
University of Applied Sciences in Nysa, Poland

A – przygotowanie projektu badania | study design, **B –** zbieranie danych | data collection, **C –** analiza statystyczna | statistical analysis, **D –** interpretacja danych | interpretation of data, **E –** przygotowanie maszynopisu | manuscript preparation, **F –** opracowanie piśmiennictwa | literature review, **G –** pozyskanie funduszy | sourcing of funding

SUMMARY

Background: Puberty is a time when many changes occur in the body of a young person. It is also the time when nutritional habits are developed or modified. Healthy dietary choices are of particular importance for normal development during adolescence and are also predictive of future health.

Aim of the study: The aim of this study was to assess the nutritional habits of junior high school students from the Kłomnice district with a focus on obesity.

Material and methods: The study was carried out using 280 randomly selected secondary school students attending schools in Kłomnice, Częstochowa in the Silesian province. The research was carried out using a questionnaire comprising questions about gender, age, weight and height of the body and nutritional habits.

Results: The nutritional habits of high school students from the Kłomnice district were evaluated to be low. Girls more frequently than boys had developed improper eating habits. Irregularities in the diet of the surveyed high school children are: incorrect number of meals a day, irregular food consumption, snacking between meals, adding too much sugar to hot beverages, infrequent consumption of milk and dairy products, coarse grains, vegetables, fruits and legumes and a high frequency of meat and sweets consumption. The nutritional habits of junior high school students from Kłomnice were at a sufficient level. Girls more often than the boys showed improper eating habits. Irregularities in the diet of the students in the study were: improper amount of food consumed during the day, irregular food consumption, snacking between meals, adding too much sugar to hot beverages, infrequent consumption of milk and dairy products, coarse grains, fish, vegetables, fruits and legumes and a high frequency of meat and sweets consumption.

Conclusions: It is recommended that continuous nutritional education of children and adolescents is implemented in order to improve diet and thereby reduce the risk of obesity in the future.

KEYWORDS: eating habits, high school students, obesity

STRESZCZENIE

Wstęp: Okres dojrzewania to czas, w którym zachodzą liczne zmiany w organizmie młodego człowieka. Jest to również czas kształtowania nawyków żywieniowych lub ich modyfikacji. Właściwe wybory żywieniowe mają

szczególne znaczenie dla prawidłowego rozwoju młodego człowieka, a także implikują jego stan zdrowia w przyszłości.

Cel pracy: Celem pracy była ocena nawyków żywieniowych młodzieży gimnazjalnej z gminy Kłomnice w aspekcie występowania otyłości.

Materiał i metody: Badanie zostało przeprowadzone wśród przypadkowo wybranych 280 gimnazjalistów uczęszczających do szkół w gminie Kłomnice, powiecie częstochowskim, w województwie śląskim. Narzędziem badawczym był autorski kwestionariusz ankiety składający się z pytań o płeć, wiek, masę i wysokość ciała oraz nawyki żywieniowe.

Wyniki: Nawyki żywieniowe młodzieży gimnazjalnej z gminy Kłomnice były na poziomie dostatecznym. Dziewczęta częściej niż chłopcy wykazywały nieprawidłowe nawyki żywieniowe. Nieprawidłowości w sposobie żywienia badanych gimnazjalistów to: nieprawidłowa liczba spożywanych posiłków w ciągu dnia, nieregularne spożywanie posiłków, pojadanie między posiłkami, zbyt duża ilość cukru dodawana do gorących napojów, zbyt mała częstotliwość spożywania mleka i produktów mlecznych, gruboziarnistych produktów zbożowych, ryb, warzyw, owoców, nasion roślin strączkowych, a zbyt duża mięsa i słodyczy.

Wnioski: Wskazana jest ciągła edukacja żywieniowa dzieci i młodzieży w celu wyeliminowania błędów żywieniowych, a przez to zmniejszenia w przyszłości ryzyka otyłości.

SŁOWA KLUCZOWE: nawyki żywieniowe, młodzież gimnazjalna, otyłość

Background

Obesity is defined as a state of excess fat and is associated with many debilitating and life-threatening disorders [1]. Worldwide, the incidence of obesity is increasing at an alarming rate. According to the WHO global estimates in 2014, over 1.9 billion adults aged 18 and above were overweight and over 600 million were obese. The overweight accounted for 39% of the adult population (38% men and 40% women), and obese for 13% (11% men and 15% women). Since 1980, the number of obesity cases has more than doubled [2]. It is estimated that by the year 2025, the number of overweight and obese adults will increase to 2.7 billion, of which 177 million adults will need treatment due to severe obesity [3].

The incidence of obesity is increasing in most countries in the world, affecting men and women, but also children and adolescents. Obesity in childhood is one of the most serious public health challenges of the 21st century. In 2014 more than 41 million children around the world under the age of five were overweight or obese [2]. Among young people aged 5 to 17 about one in ten is overweight. It is estimated that by 2025 there will be 177 million of overweight five to seventeen-year-olds and 91 million will be obese [4].

In Europe, obesity affects one in three boys and one in five girls between the ages of 6 and 9. According to the World Health Organization, no other chronic disease is so widespread among school children [5].

Poland also has an upward trend in the incidence of excess body weight. More than 22% of children are overweight or obese, while one in five is at school age [6]. According to a study conducted in the school year of 2013/2014, the percentage of 11–15-year-olds with excess body weight and obesity was 14.8% (12.4% and 2.4%. respectively). Definitely more often the problem of excess body weight occurred in boys than girls (19.2% and 10.4%) [7].

Most young people do not grow out of obesity. About four out of five obese adolescents will continue to have problems with excess body weight in adulthood [4. 8]. It is estimated that the current generation of teenagers will be the first generation with expected shorter lifespan than their parents [3].

The health effects of obesity are well documented. Obesity increases the risk of developing type 2 diabetes, fatty liver, asthma, sleep apnea, skeletal-muscle, orthopedic disorders and cardiovascular diseases [3. 4]. Obesity also lowers the quality of life for young people and it is associated with a variety of emotional and behavioral problems including discrimination by peers, low self-esteem and worse learning outcomes [8].

In addition to genetic, psychological and economic factors, the development of obesity is also largely influenced by a lifestyle, mainly nutritional habits and physical activity. According to the World Health Organization, nutritional habits conductive to obesity are: high frequency of consumption of fast food and sweetened beverages and too little intake of fruits and vegetables, but also lack of physical activity and a sedentary lifestyle. Poor nutritional habits contributes to energy imbalance between the amount of energy delivered (eating too many high-calorie products) and its expenditure (limitation of physical activity) [4. 8].

Aim of the study

The aim of the study was the assessment of nutritional habits of junior high school students from the district of Kłomnice in relation to obesity.

Material and methods

The study was conducted at the end of 2014 (in autumn-winter period) among 280 junior high school

students (137 boys and 143 girls) attending schools in the district of Kłomnice. Częstochowa county in Silesian province.

The selection of subjects for the study was deliberate and the criteria for inclusion were as follows: attendance at one of the junior high schools in the district of Kłomnice, age from 13 to 15, good health, consent to participate in the survey and fill out a questionnaire. The exclusion criteria were: age below 13 and above 15, poor health and chronic conditions requiring a diet therapy, which could affect the nutritional habits of the respondents.

The research tool was an authoritative questionnaire consisting of questions about gender, age, body weight and height, and questions about nutritional habits. Prior to the study a validation of the questionnaire was performed.

Based on the collected data. i.e. body weight and height, a BMI was calculated for each test subject. Obesity and excess body fat among students were diagnosed based on BMI centile charts for a specific age and gender under OLAF project [9].

The nutritional habits of the respondents were assessed on the basis of their answers. For each correct answer 1 point was awarded. All the correct answers to the question (or the final score for all the questions) were summed up and presented as percentages for the whole group of surveyed students and broken down by gender. The results were interpreted as follows: proper eating habits required to provide at least 75% of the correct answers, satisfactory – 74–50%, sufficient – 49–25%, and improper – less than 25%.

The hypothesis of a proper distribution of BMI was verified using the Shapiro-Wilk test. Variables having a distribution close to a proper distribution were analyzed by ANOVA variance, otherwise Kruskal-Wallis ANOVA test was used. Calculations included a mean, standard deviation, median, minimum and maximum BMI for the study group with respect to gender. The evaluation of the relationship between age, nutritional status based on BMI, gender and dietary habits was performed by calculating the test coefficient of $\chi 2$ with Yates' correction considering as significant the values at $p < 0.05$. The statistical analysis was based on the Statistica 10.0 program.

Results

The statistical analysis did not show gender or age differentiation in the study group. The boys accounted for 48.9%, and girls – 51.1% of the total. The number of students at the age of 13 (1st grade) was 94 (33.6%), 14 (2nd grade) – 89 (31.8%) and 15 (3rd grade) – 97 (34.6%).

The average BMI of the boys was 20.8 [kg/m^2] and the girls 19.4 [kg /m^2]. Gender statistically significantly differentiated the value of this indicator ($p < 0.001$).

More than 70% of the respondents had proper body mass and statistically significantly more often these were the girls than the boys (83.2% vs. 60.6%). More students were overweight and obese than underweight (18.9% vs. 9%). Obesity and excess body fat were significantly more common among the boys than the girls (27.0% vs. 6.3%. 5.1% vs. 0.0%. respectively).

The nutritional habits of both the girls and the boys, according to the established criteria, were at a sufficient level (Table 2). The study group of adolescents, irrespective of gender, showed improper eating habits in 14 areas. Less than 25% of the correct answers were responses to questions about: the number of meals consumed during the day (20.4%), the frequency of afternoon tea (16.4%), or snacking between meals (19.3%). Irregularities also included: the most commonly consumed type of bread (10.7%), the frequency of coarse grains (2.1%), meat (18.6%) and fish consumption (20.4%). No less than 2 cups of milk a day consumed 15% of the respondents, while 20.4% consumed dairy products a few times a day. Only 4.3% of respondents declared eating vegetables 4–5 times a day,

Table 1. Characteristics of the study group

Parameter N (%) 280 (100.0)		**Total**	**Boys**	**Girls**	***p*-value**
		N (%)	**N (%)**	**N (%)**	
		137 (48.9)	**143 (51.1)**	**0.6726**	
Age [years]	13	94 (33.6)	51 (37.2)	43 (30.10	0.254
	14	89 (31.8)	45 (32.8)	44 (30.8)	0.807
	15	97 (34.6)	41 (30.0)	56 (39.1)	0.134
BMI [kg/m^2]	mean value ± SD	20.1 ± 2.83	20.8 ± 3.25	19.4 ± 2.16	< 0.001
	median	19.9	20.5	19.4	
	range (min-max)	13.3–28.7	14.0–28.7	13.3–24.8	
Body Mass Index (BMI)	underweight	25 (9.0)	10 (7.3)	15 (10.5)	0.468
	proper body weight	202 (72.1)	83 (60.6)	119 (83.2)	< 0.001
	overweight	46 (16.4)	37 (27.0)	9 (6.3)	< 0.001
	obesity	7 (2.5)	7 (5.1)	0 (0.0)	0.019

SD – standard deviation; p – comparison of Chi^2 test with Yates correction or Kruskal-Wallis ANOVA test at $p < 0.05$

and 17.9% of students – 2–3 servings per day. A small percentage of the respondents (8.9%) consumed legumes at least once a week. Only 13.6% of junior high school students did not added sugar to hot beverages, and 9.6% rarely or never ate sweets. Junior high school students, both boys and girls, showed one proper dietary habit. Nearly all of them (92.9%) ate lunch every day (95.6% of the boys, 90.2% of the girls).

Considering the gender of the respondents, statistically significantly more often the girls than the boys gave the correct answers to questions about: frequency of the second breakfast (60.8% vs. 43.1%, p = 0.004), frequency of supper consumption (85.7% vs. 71.5% p = 0.034), frequency of meat consumption (27.3% vs. 9.5%, p < 0.001), the most commonly consumed beverage (85.3% vs. 64.2%, p < 0.001) and the amount of sugar added to beverages (18.9% vs. 8.0%, p = 0.013). On the other hand, more frequently the boys than the girls gave the correct answered to questions concerning: frequency of the first breakfast (66.4% vs. 52.4%, p = 0.024), consumption of meals at fixed time (46.0% vs. 23.8%, p < 0.001), consumption of breakfast before going to school (64.2% vs. 47.6%, p = 0.007), an appropriate milk consumption (24.8% vs. 5.6%, p < 0.001), the frequency of fish consumption (27.7% vs. 13.3%, p= 0.004), and the correct amount of liquids (68.6% vs. 30.1%, < 0.001). Varying responses were due to the gender of respondents, the girls showed incorrect eating habits in terms of regularity of meals (23.8%) and the frequency of fish consumption (13.3%), while the boys in terms of the frequency of meat consumption (9.5%). The girls showed proper eating habits in the aspect of the frequency of supper consumption (85.7%) and the type of the most frequently consumed bever-

Table 2. Evaluation of dietary habits by gender

Survey questions (the correct answer)	Total N = 280		Boys N = 137		Girls N = 143	
	%	eval.	%	eval.	%	eval.
How many meals do you eat during the day? (5)	20.4	improper	18.2	improper	22.4	improper
How often do you eat your first breakfast? (daily)	59.3	satisf.	66.4*	satisf.	52.4*	satisf.
How often do you eat your second breakfast? (daily)	52.1	satisf.	43.1*	suffic.	60.8*	satisf.
How often do you eat dinner? (daily)	92.9	proper	95.6	proper	90.2	proper
How often do you have afternoon tea? (daily)	16.4	improper	20.4	improper	12.6	improper
How often do you eat supper? (daily)	65.0	satisf.	71.5*	satisf.	85.7*	proper
Do you eat meals at fixed times? (yes)	34.6	suffic.	46.0*	suffic.	23.8*	improper
Do you eat breakfast before going to school? (yes)	55.7	satisf.	64.2*	satisf.	47.6*	satisf.
What do you usually eat for the first breakfast? (milk soup and/or a ham sandwich with vegetables)	45.0	suffic.	45.3	suffic.	44.8	suffic.
What time do you eat dinner? (2–3 hours before bedtime)	78.6	proper	83.2	proper	74.1	satisf.
Do you ever snack at night? (no)	68.2	satisf.	64.2	satisf.	72.0	satisf.
Do you snack between meals? (no)	19.3	improper	19.7	improper	18.9	improper
What type of bread do you usually eat? (wholemeal)	10.7	improper	8.0	improper	13.3	improper
Do you eat coarse grains? (yes. several times a week)	2.1	improper	2.9	improper	1.4	improper
Do you drink milk and in what quantities? (yes. not less than 2 glasses a day)	15.0	improper	24.8*	improper	5.6*	improper
Do you eat dairy products? (yes. several times a day)	20.4	improper	24.8	improper	16.1	improper
Do you eat meat or meat products? (yes. several times a week)	18.6	improper	9.5*	improper	27.3*	suffic.
How often do you eat fish? (at least 2 times a week)	20.4	improper	27.7*	suffic.	13.3*	improper
How often do you eat vegetables? (4–5 times a day)	4.3	improper	3.6	improper	4.9	improper
How often do you eat fruits? (2–3 times a day)	17.9	improper	18.2	improper	17.5	improper
Do you eat legumes? (yes. at least once a week)	8.9	improper	7.3	improper	10.5	improper
How much liquid you drink a day? (1.5–2.0 L)	48.9	suffic.	68.6*	satisf.	30.1*	suffic.
What drinks do you drink most often? (mineral water)	75.0	proper	64.2*	satisf.	85.3*	proper
How many teaspoons of sugar do you add to hot drinks? (I don't add sugar)	13.6	improper	8.0*	improper	18.9*	improper
How often do you eat sweets? (rarely or never)	9.6	improper	6.6	improper	12.6	improper
Do you add salt to dishes served on a plate? (no)	59.6	satisf.	54.7	satisf.	64.3	satisf.
How often do you eat fast food? (rarely or never)	71.1	satisf.	75.2	proper	67.1	satisf.
Final score (mean value)	37.2	suffic.	38.6	suffic.	36.8	suffic.

Legend: % – percentage of the correct answers; N – group size; proper – correct eating habits, satisf. – satisfactory eating habits, suffic. – sufficient eating habits, improper – improper eating habits; * statistical significance at p < 0.05

age (85.3%), the boys with respect to the time of supper (83.2%) and the frequency of fast food products consumption (75.2%).

Discussion

Regular consumption of well-balanced meals, correct choice of food products and physical activity guarantee the proper development and health of a young person. However, in the era of dynamic progress of civilization that promoters the consumer's lifestyle, observance of the above mentioned rules is difficult. Irregular consumption of meals that leads to snacking in between, excessive consumption of sweets, fast food and sweetened beverages and low physical activity what is partially caused by a considerable share of additional activities in the free time. It all results in having a sedentary lifestyle which causes continued positive energy balance and, as a consequence, lead to weight gain. In addition, a serious problem in the context of obesity is the consumption, by children and adolescents, of meals with law-density of nutrients in which nutritive products are replaced by less valuable ones. For example, in a child's daily diet sweets or sweetened drinks often serve as a replacement for milk, dairy products, vegetables and fruits, which are a valuable source of vitamins and minerals, necessary for the proper development and functioning of a young organism. Thus, improper eating habits promote the development of chronic non-communicable diseases, including obesity.

The Institute of Food and Nutrition recommends eating 4 to 5 meals a day. However, in the case of school children, rational diets point to the need to eat five meals a day [10]. Consumption of fewer meals results in an increase in the amount of a serving portion and is conducive to snacking between meals, thereby increasing the risk of developing excess body fat and obesity [11–13]. The majority of the school children in the study consumed four meals a day (40.4%). In a study by Roszko-Kirpszy et al. (14), the majority of children from Podlasie province also consumed four meals a day, but their percentage was significantly higher than in our own study (over 80.0%). Only 20.4% of the respondents from the district of Kłomnice consumed five meals a day. Similar results were obtained by Krajewska et al. [15] researching children aged 4–18 hospitalized for being overweight and obese. Only 18.8% of the girls and 30.5% of the boys consumed the recommended number of daily meals. Definitely more, about 74% of children aged 10–12 from Udanin, in a study by Wyki et al. [10], declared that they eat 5 meals a day. It should also be noted that in our own study more than 30% of teens surveyed consumed only 3 or fewer meals a day. Similar results were obtained by Wanat et al. [16], Wojtyla-Bucior et al. [17], Kocka et al [18] and Głębocka and Kęska [13].

The first and most important meal of the day is breakfast. It provides the body, after a night-long break, with the energy and nutrients it needs to handle daily activities. Breakfast promotes the harmonious mental and physical development of children and adolescents [19]. It also reduces the risk of obesity [20]. Nearly 60% of the respondents consumed the first breakfast every day and statistically significantly more often they were boys than girls. The girls in turn definitely more often did not eat breakfast in general (16.8% vs. 5.8%, $p = 0.007$). The results obtained are confirmed by studies conducted by Lazerii et al. [21] and Piotrowska et al. [22], where the girls more often than the boys skipped the first meal. In other studies, the percentage of adolescents consuming the first breakfast ranged from 63% to 83% [11,22–24]. It is also important to notice that the first breakfast should be eaten in the morning, before leaving the house. Own research has shown that only 55.7% of respondents followed this rule, and most of them were boys. Wołowski and Jankowska [24] obtained similar results. On the other hand, Wanat et al. [16] studied 100 students aged 13–15 from Chełmek and showed that only 40% of them consumed breakfast every morning before going to school.

The right choice of products and foods for the first breakfast is also of great importance in terms of the role that this meal plays in nutrition. Nearly every second respondent opted for breakfast with milk soup and/or sandwiches with cheese or ham and some vegetables. The other young people ate donuts, sweet buns and other products (e.g. pancakes, sandwiches with chocolate cream) for their first breakfast.

Dinner is the only meal that was eaten by almost all the teenagers (92.9%). In the studies of Zimna-Walendzik et al. [23], every 12-year-old consumed dinner, while in the Piotrowska et al. study [22] only 79.2% of students aged 13–14 ate dinner every day.

In our own study, afternoon tea was consumed only by one is six junior high school respondents, which could have been the result of consuming too much for dinner. More of the respondents ate supper (65%), and more often they were girls than boys. Similar percentage of adolescents, in a study by Piotrowska et al. [22], consumed supper, with the difference that they were more likely to be boys (76.8%) than girls (51.2%).

Most of the young respondents (78.6%) ate dinner at the time which was in accordance with the principles of sound nutrition, i.e. 2–3 hours before bedtime. Slightly poorer results were obtained in a study by Marcysiak et al. [25], as only 37% of the respondents consumed supper following this rule. It can be assumed that thanks to the habit of eating supper as well as choosing the right time of its consumption, 68.2% of the students from Kłomnice municipality did not snack at night.

One of the most important principles of rational nutrition is the consumption meals at fixed time [19]. Irregulararities interfere with secretion of insulin, contributing to the development of excess body fat and obesity [26]. Own research has shown that only 34.6% of students eat meals regularly. Similar results were obtained by Wołowski and Jankowska [24], Krajewska

et al. [15] and Głębocka and Kęska [13]. Nearly twice as often the boys rather than girls consumed regular meals. The results obtained are confirmed in studies conducted by Kocka et al. [18], in which 44.1% of the boys and 22.0% of the girls consumed regular meals.

The result of irregular meals' consumption among the junior high school students in Kłomnice, in addition to insufficient number of them, was snacking between meals. 80.7% of the respondents confessed to that, regardless of their gender. Krajewska et al. [15] reported a slightly better outcome, with 78.9% of girls and 68.7% of the boys snacking between meals. Unfortunately, the most popular products among the students surveyed were sweets (52.1%). Several times a day these types of products were consumed by more than 25% of the students, and consumed once by 35% of the respondents. There was no person who did not eat sweets among the respondents. Similar results were obtained by Głębocka and Kęska [13], examining the diet of 12-year-old pupils from Warsaw and Zamość. In these studies, it was observed that a significant percentage of teenagers reached for sweets daily and even several times a day. Other food items that were eaten by teenagers from Kłomnica were salty snacks (19%). Similar results were obtained by Ziółkowska et al. [27]. In their survey, 63.5% of respondents used this type of product. Better results were obtained by Krajewska et al. [15], only 32.4% of children and adolescents ate sweets. Those surveyed by Wojtyla-Bucior et al. [28] and Krajewska et al. [15] frequently chose products such as vegetables, fruits and yogurt. Consuming too much sweets and salty snacks combined with insufficient physical activity can result in having excess body fat or obesity.

In rational nutrition, the frequency of dark bread, coarse grains, legumes, vegetables and fruits is important. These products are the source of complex carbohydrates, as well as vitamins, minerals and fibre, to ensure proper functioning of the body and also have meliorative role in the prevention of obesity [19]. Unfortunately, the alarmingly high proportion of young people surveyed rarely consumed these products. At the recommended frequency, dark bread consumed only 10.7% of pupils, coarse grains 2.1%, legumes 8,9%, and vegetables and fruits respectively 4.3% and 17.9% of the students. The results of Głębocka and Kęska [13] also confirmed that a large proportion of young people do not consume adequate amounts of coarse grain products, vegetables and fruit. In a study by Kocka et al. [18] the respondents predominantly consumed vegetables and fruits; 1 to 3 times a week. Better results were obtained by Wojtyła et al. [29], showing that 53.9% of the respondents consumed vegetables for each meal.

Limited intake of milk or milk products can lead to abnormalities in skeletal mineralization and to osteoporotic fractures in adulthood [16]. It may also be important in the regulation of body weight [[13]. Milk and its products are a valuable source of calcium, protein, and also vitamin B_2. In our own study, more than half of the students stated that they consumed milk but only in small quantities. Milk consumption was reflected in consumption of dairy products, as most of the respondents consumed these types of products once a day or rarely. Głębocka and Kęska [13] achieved satisfactory results, as more than half of children declared to eat dairy products in 1–2 meals a day. In turn, Krajewska et al. [15] showed that as many as 32.9% of hospitalized overweight and obese children did not consume milk or its products.

Meat, poultry, sausages, fish and eggs are a source of wholesome protein and heme iron. They should be present at least in one meal a day, and meat and poultry several times a week [16]. In our own studies, as in Kolarzyk et al. [30], most respondents declared daily consumption of meat and meat products, whereas in the study by Wanat et al. [16] reported that 90% of teens consumed more than 2–3 times a week.

Fish are also a rich source of unsaturated omega-3 fatty acids and are recommended to be eaten at least 2 times a week. Only one in five of the questioned junior high school students in Kłomnica consumed them at the right frequency. The obtained result is confirmed by a study carried out by Brontowska et al. [31], where 22.3% of the surveyed junior high school students consumed fish 2–3 times a week.

An undesirable eating habit is the frequent consumption of fast food products that are primarily a source of fat and salt. In our own research, no person has stated that they do not consume this type of product. It is comforting, however, that the majority consume them rarely. Definitely worse results revealed a study by Stankiewicz et al. [32] conducted among children and youth of small towns and villages under the study of the Polish Project of 400 cities, which show that young people often eat fast food products.

In our own study, the majority of junior high school students' surveyed sweetened hot beverages (coffee, tea) with at least two teaspoons of sugar, probably exceeding 10% of the energy delivered from added sugars [34], thereby increasing the risk of developing obesity and other metabolic diseases.

A mistake which is often repeated is adding salt to pre-prepared meals. This may have a negative impact on health, especially when one also eats fast food products, salty snacks and sweets. Such eating habits increase the risk of obesity and metabolic diseases. The respondents from the junior high school of Kłominca showed a better nutritional habit in terms of adding salt to pre-prepared meals. Almost 60% of the students did not add salt to the food prepared for consumption. Definitely worse results achieved Ilow et al. [35], in a study where less than 14% of girls and boys never added salt to dishes.

The junior high school student make many nutritional mistakes. There may be a number of reasons leading to improper nutrition. It can only be assumed that this is due to inadequate nutritional knowledge, not only of the students surveyed but also of their parents, since they have been developing their children die-

tary habits since early childhood. In the future, junior high school students who copy improper eating habits may be among those at increased risk of chronic non-communicable diseases, including obesity [36]. Therefore, the major task of public health institutions should be continuous education on proper nutrition for both children and parents.

Conclusions

1. The nutritional habits of junior high school students from the district of Kłomnice, regardless of their gender, were at a sufficient level.
2. The girls more often showed improper eating habits in comparison to the boys.
3. Abnormalities in the diets of the studied junior high school students concerned: the number and regularity of meals consumed during the day, snacking between meals, adding sugar to hot beverages, frequency of consumption of milk and dairy products, coarse grain products, meat, fish, vegetables, fruits, legumes and sweets.
4. Continuous nutrition education of children and adolescents is recommended in order to eliminate nutritional mistakes and thereby reduce the risk of obesity in the future.

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Correspondence address:
Ewa Malczyk
ul. Armii Krajowej 7
48-300 Nysa
Phone: (+48) 609 145 308
E-mail: ewa.malczyk@pwsz.nysa.pl

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HEALTH-ORIENTED BEHAVIOURS OF SECONDARY SCHOOL STUDENTS – A STUDENT AND TEACHER EVALUATION

ZACHOWANIA PROZDROWOTNE MŁODZIEŻY LICEALNEJ W OCENIE UCZNIÓW I ICH NAUCZYCIELI

Dorota Hraca[A-F]

Center of Gynecology, Obstetrics and Neonatology in Opole, Poland

A – przygotowanie projektu badania | study design, **B –** zbieranie danych | data collection, **C –** analiza statystyczna | statistical analysis, **D –** interpretacja danych | interpretation of data, **E –** przygotowanie maszynopisu | manuscript preparation, **F –** opracowanie piśmiennictwa | literature review, **G –** pozyskanie funduszy | sourcing of funding

SUMMARY

Background: Health-oriented behaviours are actions taken to promote health and to prevent illness. These are behaviours whose purpose is to improve the environment around the human being, and thus to create conditions conducive to healthy living.

Aim of the study: The aim of the study was to investigate the real patterns of health-oriented behaviours among high school students and to evaluate these behaviours in students and teachers.

Material and methods: The study included 100 students (16–19 years of age) attending a general secondary school and 30 teachers employed at the same institution. The author chose to conduct a diagnostic survey with the use of a questionnaire. The research tool used in the study was a questionnaire prepared by the author, containing 12 questions, addressed to both students and teachers. The questionnaire was based on four research themes: eating habits of high school students, frequency with which they undertake physical activity, manners of dealing with stress, and ways in which they affect the behavior of their peers.

Results: The results of the study indicate that young people of today are more aware of health-oriented behaviors. Studies have shown that 92% (92) of students are physically active, 77% (77) consider they have healthy eating habits; 90% (90) of the students stated that they cope with stress by listening to music and taking part in sport. The vast majority (as many as 84% (84)), think that stimulants are very harmful. The teachers considered that most of the students have healthy habits.

Conclusions: The knowledge of high school students about health-oriented behaviors is satisfactory. Most students put this knowledge into practice through physical activity, healthy eating, avoiding drugs, and finding ways to cope with stress. According to the teachers, students are fully aware of positive and negative phenomena related to health and of how they can affect them.

KEYWORDS: health-promoting behaviours, healthy lifestyle, youth

STRESZCZENIE

Wstęp: Zachowania prozdrowotne to działania podejmowane w celu promocji zdrowia, służące zapobieganiu chorobom, oraz zachowania, których celem jest poprawa otaczającego człowieka środowiska, a co za tym idzie – stwarzanie warunków sprzyjających zdrowiu.

Cel pracy: Poznanie rzeczywistego obrazu zachowań prozdrowotnych młodzieży licealnej oraz ocena tych zachowań przez uczniów i nauczycieli.

Materiał i metody: Do badania zakwalifikowano 100 uczniów w wieku 16–19 lat uczęszczających do liceum ogólnokształcącego oraz 30 nauczycieli zatrudnionych w tej placówce. Wykorzystano metodę sondażu diagnostycznego, w której zastosowano technikę ankiety. Narzędzie badawcze stanowił autorski kwestionariusz ankiety, który zawierał 12 pytań zarówno dla uczniów, jak i nauczycieli. Ocena ankietowanych została dokonana na podstawie pytań, które dotyczyły czterech obszarów badawczych: sposobu odżywiania się młodzieży licealnej, czę-

stości podejmowania aktywności fizycznej, metod radzenia sobie ze stresem przez młodzież oraz używek, które mogą wpływać na zachowanie młodzieży.

Wyniki: Wyniki przeprowadzonych badań wskazują na dużą świadomość młodzieży dotyczącą zachowań prozdrowotnych. Badania wykazały, że 92% (92) uczniów jest aktywnych fizycznie, zdrowe odżywianie deklaruje 77% (77). 90% (90) uczniów stwierdziło, że radzi sobie ze stresem przez słuchanie muzyki i uprawianie sportu. Zdecydowana większość młodzieży – aż 84% (84) – uważa, że używki są bardzo szkodliwe. W opinii nauczycieli większość uczniów przejawia zachowania prozdrowotne.

Wnioski: Szkoła to właściwe miejsce eliminacji nierówności w zakresie zdrowia młodych ludzi. Środowisko szkolne powinno dostrzec swoje możliwości w kształtowaniu zachowań zdrowotnych oraz budować pozytywne relacje z młodzieżą i ich rodzicami.

SŁOWA KLUCZOWE: zachowania prozdrowotne, zdrowy styl życia, młodzież

Background

Health-promoting behaviours are actions undertaken to promote health, to prevent illnesses, and any behaviour aimed at improving the conditions of the surrounding environment, so that they are conducive to health [1]. Pro-health behaviours can be divided according to different criteria. Beata Tobiasz-Adamczyk, referring to other authors, distinguished five groups of healthy behaviour. The first group includes abstaining from stimulants, i.e. smoking, taking drugs or drinking alcohol. A substance that is defined as the one that affects the body (mostly the central nervous system) [2].

The second group comprises activities having a positive effect on health (physical exercise, proper hygiene and adequate sleep). In addition, physical activity is closely related to nutrition. Active people may consume more calories without increasing the risk of cancer or cardiovascular disease [3]. A reasonable diet is a diet that is consistent with the recommendations of nutritional science and takes into account genetic, cultural and social determinants [4].

The third group concerns eating habits: a balanced diet, adequate composition and quantity of food intake, macronutrients and micronutrients. Applying a proper diet also helps to reduce the risk of a number of disease.

Another group includes driving vehicles in a manner adapted to the weather conditions, i.e. driving safely.

The fifth group is a preventive action to preserve health. These include visiting the doctor and consuming vitamins that strengthen the body's immune system [1].

Health-promoting behaviours also include coping with stress as a preventive behaviour. Stress is regarded as a negative phenomenon. It is one of the factors leading to health problems and increased level of tension [5]. Stressor stimuli may be extrinsic – physical (e.g. heat or cold) or interpersonal difficulties and intrinsic (e.g. pain) which produce a typical pattern of response. We distinguish between psychosocial and physical-biological stressors, short-lived (acute), long-term (chronic). They come from the environment (exogenous) and from inside of the human body (endogenous) [6]. The way of perceiving pro-health behaviours can influence their realization. This is especially important in adolescents who, after the entry into adulthood, will make their own decisions about their behaviour.

The defined perception of health-promoting behaviours by young people is a good starting point for their possible modification through school interactions. The genetic resources and the modelling process are important in shaping individual properties. The most important pattern is the attitudes presented by parents. Teachers are also the source of many patterns of behaviour for the youth. Another element that influences perception of behaviour is educational programs for young people. They allow them to develop their skills, teach about health issues, provide knowledge about addictive substances, help to solve interpersonal problems, and make the right decisions [7].

Aim of the study

The aim of the study was to identify the real image of health-promoting behaviours of secondary school pupils and to evaluate those behaviours by the pupils and the teachers.

Material and methods

The study included 100 secondary school pupils and 30 teachers employed at the facility. Among the adolescents aged 15–19, 30% (30) were in the age range up to 16, 38% (38) – between 17 and 18 years old, 32% (32) pupils were 19. 56% (56) were girls, 44% (44) – boys. Most of the youth surveyed – 90% (90) lived in the city.

For the purpose of the study the school was chosen randomly from the general secondary schools of the Opolskie Voivodship, classes were also randomly selected. The participation of the young people and the teachers in the study was voluntary. No refusal has been reported. The study used a diagnostic survey method, in which a survey technique was selected, the research tool was the authors' questionnaire for both the youth and the teachers.

The questionnaire for the pupils included metric, gender, age and place of residence and 12 main questions, including closed, open, semi-open, and conjugal questions (with the possibility to choose any number of responses). The questions concerned four main research areas: 1) secondary school pupils' eating habits, 2) frequency of physical activity, 3) methods of coping with

stress, and 4) stimulants that can influence young people's behaviour. The questionnaire for teachers also included metric questions and 12 main questions.

The study was conducted in April 2016 personally by the author of the work under conditions that ensure the anonymity and independence of the answer. All respondents agreed to participate in the study.

Results

Most of the respondents – 91% (91) indicated gyms, fitness and aerobics, as a part of their physical activity. The least popular – 44% (44) was handball, football, volleyball and basketball. In the opinion of the teachers, the largest number of respondents (83%) go to the gym, fitness and aerobics, and 50% (50) play handball, football and basketball.

The largest number of respondents – 85% (85) eat vegetables and 20% (20) of them eat sweets. According to the teachers most pupils eat vegetables and fruits, while the least eat sweets.

Most of the pupils surveyed – 92% (92) – believe that stress can be offset by doing sport, while 18% (18) say eating is a good way to cope with stress. According to the teachers, the best way to handle stress is through sports.

82% (82) of pupils believe that the rational nutrition and exercise help in coping with stress, 10% (10) of which are rural residents and 72% (72) are city dwellers. 10% (10) of pupils claim that rational nutrition and exercise do not help in dealing with stress, while 8% (8) of the surveyed pupils said that it is hard to determine whether diet and exercise help in coping with stress. Among teachers, 90% (27) of them think that rational nutrition and physical exercise help to deal with stress, 7% (2) claim that it does not, 3% (1) state that it is hard to say. All the teachers have confirmed that pupils know how stimulants affect their health, since the issue has been repeatedly presented to them. In their opinion 95% (95) of pupils do not smoke (8% of them are rural residents and 87% are city dwellers), 2% (2) are smokers and 3% (3) smoke occasionally.

According to the study, 53% (16) of teachers do not notice that pupils smoke cigarettes, 37% (11) of teachers confirm that they do, 10% (3) of teachers denied that they do. 96% (96) of pupils indicate that they do not drink alcohol (10% of them are rural residents and 86% are city dwellers), 1% (1) indicate that they drink alcohol occasionally, 3% admit to drink alcohol. 53% (16) teachers do not notice that pupils drink alcohol, 44% (13) denies drinking 3% (1) say that they do.

Discussion

The results of the present study showed that the majority of pupils (92%) of randomly chosen general secondary schools in Opole province, regularly practice physical activity. Dominant type of activity is gym, fitness and aerobics. Declarations of the youth are similar to the opinions of the teachers of this secondary school. A study conducted in 2010 by Dziubak and Dziedzic, Mierzwa [8] among 125 secondary school pupils found that the forms of physical activities of pupils were running – 64% (80) volleyball and basketball – 60% (75), and swimming – 48.8% (61). According to the above, 69.9% of pupils watch television, 56.8% (73) use computers, and 56.8% (71) read books. In the study conducted in 2013 by Orkusz and Babiarz in which 168 secondary school pupils took part, of whom 63.9% (107) of girls and 61.7% (103) of boys declared having regular physical activity [9]. As reported by Wojtyła et al. [2011], the majority of adolescents in Poland (59% of boys and 71% of girls) do not achieve the recommended level of physical activity [10].

Table 1. The declared type of physical activity practiced by pupils

No.	Answers	Number of responses [%]
1	I go running	65
2	I go to the pool	66
3	I go to the gym, fitness, aerobics	91
4	I ride a bike	75
5	I play football, handball, basketball, volleyball	44

Table 2. Teachers' opinion on the type of sport being practiced by the pupils

No.	Answers	Number of responses [%]
1	They go running	63
2	They go to the pool	67
3	They go to the gym, fitness, aerobics	83
4	They ride a bike	77
5	They play football, handball, basketball, volleyball	50
6	They don't practice sport	17

Table 3. Group of products consumed by pupils and teachers' knowledge on this subject

No.	Answers	Number of responses [%]
1	Grain products	75
2	Vegetables	85
3	Fruits	84
4	Milk and milk products	60
5	Meat	44
6	Sweets	20

Table 4. Teachers' knowledge of the group of products consumed by the pupils

No.	Answers	Number of responses [%]
1	Grain products	67
2	Vegetables	83
3	Fruits	83
4	Milk products	60
5	Sweets	17

In our study 91% (91) of the pupils considered going to the gym as the most popular form of physical activity, 75% (75) opted for cycling, 66% (66) – swimming, 65% (65), running – 44% (44) and team games. The progress of civilization and socio-environmental factors increasingly affect the formation of norms, values and social rules in perception of physical activity. Determining factors include socio-economic status, health condition, and family relationship towards activity, sports and leisure infrastructure in the place of residence, traditions, customs and the level of knowledge about health.

Our research has shown that 77% (77) of secondary school pupils declare eating healthy food. In the opinion of 73% (21) teachers of this secondary the pupils prefer a healthy diet. The study on adolescents' health-promoting behaviours conducted by Paczuski in Łódz in 2015, among 86 of secondary school respondents, showed that the diet of 43% (36.9) is not proper 29.1% (25) respondent considered it proper and 27.9% (24) were undecided [11]. Nutrition and physical activity studies were conducted by Anna Bochenek and Anna Grobowiec in 2011 and 2012 at the general secondary schools in Janów Lubelski, Biała Podlaska and Łuków. 324 respondents participated in the study. [11]. When asked about the meals that they consume during the day, the respondents answered that: 82.4% (266) of them eat breakfast, 24.5% (79) sometimes eat it and 14.3% (46) never do. If case of milk, dairy products and fats the consumption is high. The studies by Orkusz and Babiarz showed that 45.4% (76) of girls and 86.7% (145) of boys reported having irregular or not having breakfast at all. Fast-food products are eaten by 25.6% (43) of the youth surveyed [9]. Chęciński et al. [2013] also showed in the study conducted among 495 secondary school pupils that 67.2% (332) of them eat fast food sporadically, and 6.1% (301) of those surveyed eat it daily. The highest percentage of pupils in our study, as many as 90% (90), stated that they coped with stress while practicing sport and listening to music. Sport, as a way of fighting the stress by secondary school pupils, was indicated by 83% (25) of teachers. A similar study was conducted by Paczuski in Łódź in 2015. When 87 respondent were asked about ways of coping with stress, as many as 70.9% (61) indicated listening to music, 58.1% (50) talking to a close person and 41.8% (36) – practicing sport.

Our research shows that 84% (84) of the pupils consider stimulants to be very harmful. 100% (30) secondary school teachers have confirmed that pupils are aware of the negative effect that they have on health. Paczuski›s studies documented high levels of pupils' knowledge abbot the effect that stimulants have on health. In a survey conducted in 2006–2007 in Ciechanów among 217 pupils, 21.7% (60) of those surveyed had a one-time contact with drugs [13]. The analysis of studies conducted on 1263 pupils in Gorzów Wielkopolski in 2006 showed that 31.9% (402) of the pupils admitted using psychoactive substances [14]. Similar results were obtained in Gdańsk, where 29% (34) of the pupils admitted to at least one-time use of a psychoactive substance, and the most commonly used drug was marijuana. A nationwide survey conducted in 2005 showed that 31.5% of secondary school pupils had experience with drugs [16].

The analysis of research in the secondary school in Lodz in 2015 shows that most of the pupils – 67.4% (57) do not smoke, 19.8% (17) smoke several times a week, 3.2% (3) a month. Secondary school pupils are knowledgeable about excessive alcohol consumption and its effects. 32% (27) do not drink, 22.7% (19) do not drink at all, 16% (14) drink once a month. 95% (95) declare to be non-smokers, 2% (2) smoke, 3% rarely smoke (3). The teachers' opinion is different. According to 10% (3) of them the pupils do not smoke, 53% (16) of teachers are unable to determine whether they smoke, and 37% (11) say that they do. The differences also affect the consumption of alcohol. 96% (96) of pupils do not drink alcohol, 1% (1) drink occasionally, 3% (3) drink alcohol. Only 44% (13) teachers denied that pupils drink alcohol, 53% (16) teachers did not notice that pupils drank alcohol, and 1% (1) confirmed that they drink alcohol.

The continuation of a research in this field would require the analysis of other age groups. An attempt to identify conditions for cohabitation in adolescents, and a development of structural models describing the mechanisms of stress-related interdependencies, and health-protecting resources would enrich the substance of the research.

Conclusions

Schools are an ideal place to eliminate inequalities in youth's heath and it should recognize its potential in shaping healthy behaviours and building positive relationships with young people and their parents.

1. It is advisable to prepare interesting offers of sports and recreational activities in the centres near the school. Besides, regular meetings should be held in order to engage pupils and teachers to promote and teach them about new forms of activities. It is also recommended that PE teachers make use of their subject's potential and the opportunity to place the content of health education in a new core curriculum.
2. Appropriate nutritional behaviours should relate to whole families, therefore educational programs and workshops should be directed to schools and families.
3. Despite the awareness of the negative impact of stimulants, it is advisable to implement educational programs aimed at reducing or preventing negative impact of sedentary lifestyle, smoking and using unhealthy substances.
4. According to the teachers, health-promoting education is recommended among young people and their parents in order to shape appropriate health behaviours and to correct mistakes that already have been made in this area.

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Correspondence address:
Dorota Hraca
Strzelniki 32/3
49-330 Łosiów
Phone: (+48) 502 128 134
E-mail: dorota.hraca@interia.pl

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THE KNOWLEDGE OF STUDENTS IN OPOLE MEDICAL SCHOOL ON HONORARY BLOOD DONATION AND TRANSFUSION MEDICINE – ANALYSIS OF OWN RESEARCH

WIEDZA STUDENTÓW PAŃSTWOWEJ MEDYCZNEJ WYŻSZEJ SZKOŁY ZAWODOWEJ W OPOLU DOTYCZĄCA HONOROWEGO KRWIODAWSTWA I LECZENIA KRWIĄ – ANALIZA BADAŃ WŁASNYCH

Sabina Czapla[1 A-F]
Joanna Śliwińska[1 A-F]
Teresa Niechwiadowicz-Czapka[1,2 A,C–E]

[1] Student of Nursing Faculty, member of Honor Blood Donors Polish Red Cross Club, Opole Medical School, Poland

[2] Nursing Faculty, tutor of Honor Blood Donors Polish Red Cross Club, Opole Medical School, Poland

A – przygotowanie projektu badania | study design, **B –** zbieranie danych | data collection, **C –** analiza statystyczna | statistical analysis, **D –** interpretacja danych | interpretation of data, **E –** przygotowanie maszynopisu | manuscript preparation, **F –** opracowanie piśmiennictwa | literature review, **G –** pozyskanie funduszy | sourcing of funding

SUMMARY

Background: The ultimate purpose of blood donation is to obtain blood from healthy donors for use by those who require a blood transfusion. This becomes possible due to a solid base of blood donors. Oftentimes, students are recruited as they represent a large potential pool of donors. The results of this survey indicate the areas that require focus in order to promote voluntary blood donation.

Aim of the study: To determine the amount of knowledge that Opole Medical School students have concerning blood donation and its treatment.

Material and methods: This research was performed using a diagnostic survey method. One hundred Opole Medical School students anonymously filled out a questionnaire concerning blood donation. Their answers were analyzed in an "R" statistic and PSPP program. The answer content was assessed with consideration for collegiate level, medical education, potential blood donation, and contact with blood donors.

Results: 85% of students think that their knowledge is average. 82% of students reported understanding that blood donation is non habit- forming, while 65% were aware there is no risk of blood overproduction in the case of regular donations. Approximately 22% of respondents were aware that blood donation has minimal risk for the donor, but half of the respondents had an incorrect understanding of donor privileges.

Conclusions: Students with medical education, senior level students and those who have contact with honor blood donors, do not have greater knowledge than other respondents. The greatest knowledge of blood donation and transfusion have these students who are actually honor blood donors.

KEYWORDS: blood donation, students, knowledge

STRESZCZENIE

Wstęp: Honorowe krwiodawstwo jest akcją społeczną mającą na celu pozyskiwanie krwi od osób zdrowych na rzecz osób wymagających transfuzji. Leczenie krwią możliwe jest dzięki stałej bazie krwiodawców. Propagowanie idei honorowego krwiodawstwa wśród studentów jest bardzo ważne, ponieważ są oni potencjalnymi dawcami

krwi. Wyniki badań ankietowych wskazują obszary wiedzy, na których w propagowaniu honorowego krwiodawstwa należałoby się szczególnie skupić, aby pozyskać nowych dawców.

Cel pracy: Poznanie wiedzy studentów PMWSZ w Opolu na temat krwiodawstwa i krwiolecznictwa.

Materiał i metody: W badaniach udział wzięło 100 studentów PMWSZ w Opolu. Zastosowano metodę sondażu diagnostycznego z wykorzystaniem autorskiego kwestionariusza ankiety.

Wyniki: 85% (85) badanych ocenia swoją wiedzę z zakresu krwiodawstwa jako średnią. 82% (82) jest świadomych, że oddawanie krwi nie uzależnia fizycznie. 65% (65) respondentów wie, że nie istnieje ryzyko nadprodukcji krwi w przypadku regularnego jej oddawania. 47% (47) ankietowanych zna zastosowanie krwi w lecznictwie. Tylko 22% (22) wie, że oddawanie krwi nie stwarza ryzyka dla dawcy. 50% (50) respondentów ma błędne informacje na temat przywilejów krwiodawców.

Wnioski: Największą wiedzę w zakresie krwiodawstwa i krwiolecznictwa mają honorowi dawcy krwi. Nie potwierdziły się hipotezy zakładające, że studenci lat programowo wyższych, osoby, które mają wykształcenie medyczne i studenci, których znajomi są honorowymi dawcami, mają większą wiedzę na temat krwiodawstwa.

SŁOWA KLUCZOWE: honorowe krwiodawstwo, studenci, wiedza

Background

Blood is one of the most necessary medicines. Development of blood donation enabled progress in many areas of medicine. Blood transfusions reduced perioperative and postoperative mortality. Blood treatment is only possible with a constant blood donor base.

In 99.8% of cases blood donation is honorary. There are only exceptional cases when it is paid. An honorary blood donor is a person who, at least once, donated blood honorarily.

According to the main principle of blood donation: "Minimum harm, maximum benefit", people, who have received blood transfusion or transfusion of blood preparations cannot donate blood within the first 6 months after transfusion, as well as the people, who had contact with patients infected with hepatitis virus, underwent diagnostic tests or endoscopic procedures and returned from countries with high incidence of HIV (Middle Africa, West Africa, Tailad), people with tattoo, who underwent acupuncture and body piercing [1].

Blood should be donated no sooner than 6 months after surgery, 4 weeks after the infectious disease, 2 weeks after influenza or flu-like infection, at least 2 weeks after antibiotic treatment and after infection with fever over 38 C.

On the day of blood donation, absences at the place of study or work is excused. The donors also are entitled to reimbursement of expenses of travel to the donation facility. All donors can also get their lab tests free of charge. As part of the promotion of honorary blood donations, honorary donors can also receive free ID cards with blood group (so called "Blood-cards")[2].

Since January 1, 2007 there is a new personal income tax relief (PIT). It allows to deduct the value of donated blood from the basic income tax (based on Low act. Art 26, Paragraph 1. Point 9 C , the Low Act, July 26, 1991 on individual income tax). The regulations on cash equivalent are used in order to determine the value of donation. Honorary donors also have the privilege allowing them to use health-care system without queueing.

Aim of the study

Evaluation of knowledge of students in Opole Medical School on honorary blood donation and transfusion medicine.

Material and methods

The study was conducted using the diagnostic survey with questionnaire consisting of 2 parts. The first part included variables and self-assessment questions related to honorary blood donation, while the second part comprised questions on knowledge on this subject. The survey was anonymous and voluntary. The study group included 100 students of Opole Medical School. The material was analyzed taking into account: year of study, medical education, which had 7% (7) of surveyed students, active blood donation and Contacts with honorable donors.

It was assumed that the following people have more knowledge on honorary blood donation and transfusion medicine:

1. Students of higher semesters
2. People who already have medical education
3. Honorary blood donors.
4. People whose friends are honorable blood donors

The statistical analysis was performed in the "R" environment, in PSPP program, with significance point set at $p < 0.05$.

Results

The questionnaire included questions relating to the various aspects of blood donations and risk for patients posed by transfusion medicine. The respondents had to answer, whether there is a risk of blood overproduction in case of regular donation. Most students chose the correct answer and assumed that this is just an urban legend, but 35% (35) has stated that such risk actually exists (Fig. 1).

The responded had also answer the question, of whether the donation may close physical addiction. 82% (82) of the respondents indicated the correct answer, and recognized it as an urban legend (Fig. 1).

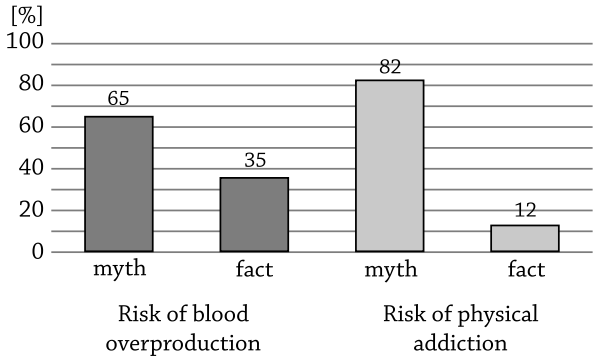

Figure 1. The answers of students regarding blood overproduction and physical addiction to blood donation

The students also answered the question, whether there is a risk of infection during blood donation. 38% (38) of students chose the correct answer, which is that there is no risk. Most respondents recognized that there was a risk of infection when donating blood. The students are mostly afraid of HBV and HIV infections.

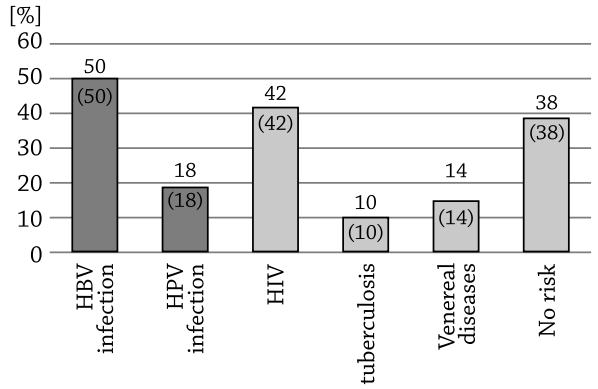

Figure 2. The level of knowledge of the students on risk of infection during donation

The students mostly estimated the amount of donated blood correctly. 60% (60) of them indicated that the volume of donated blood amounts to 450 mL (Fig. 3).

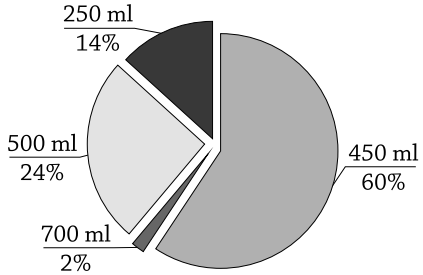

Figure 3. The answers of students to the questions about the amount of blood taken during blood donation

47% (47) of the respondents answered the question about the use of blood in treatment correctly (Fig. 4).

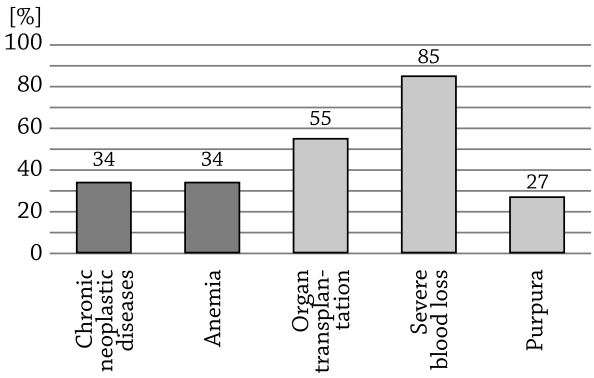

Figure 4. The knowledge of students on the use of blood in medical treatment

Half of the evaluated population is misinformed about privileges for honorary donors. As the examples of privileges the students mentioned discounts in public transportation (23%, 23 people) and lower prices of drugs (16%, 16 people). The students considered chocolate as one of the privileges incorrectly (43%, 43 people) as well as medical leave from work or school on donation day (36%, 36 people) and gadgets promoting honorary blood donation. 40% (40) of the surveyed students know about the possibility of annual tax deduction for the Distinguished Blood Donor (Fig. 5).

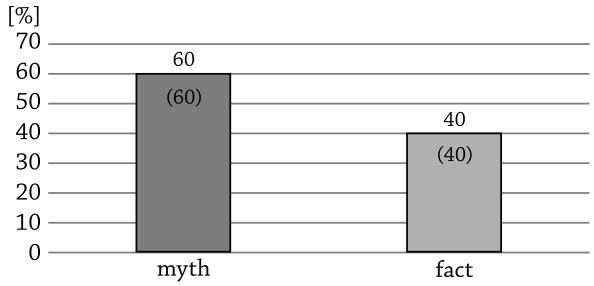

Figure 5. The answers of the students regarding the knowledge on possibility of annual tax deduction in honorary blood donors

The conducted studies did not present statistically significant differences in knowledge on blood donation between students of different years.

Tab. 1. The correlation between the year of the study and the knowledge on blood donation

Kruskal-Wallis test	
Variables	**Result**
Year of study – independent variable (grouping)	$X^2 = 0.934$ df = 3 P = 0.817
Knowledge about blood donation – dependent variable	

The results of the performed studies indicate that there are no statistically significant differences between the level of knowledge on blood donation and medical education (Tab. 2).

Tab. 2. Correlation between the level of knowledge on blood donation and medical education

Mann Whitney Test	
Variables	**Result**
Medical education – independent variable (grouping)	U = 403.500 P = 0.196

The study indicates that between people, who are not honorary blood donors, there are statistically significant differences in the level of knowledge on blood donation (Tab. 3).

Tab. 3. The correlation of knowledge on blood donation between blood donors and people, who do not donate blood

Mann Whitney Test	
Variables	**Result**
Honorary blood donation – independent variable (grouping)	U = 607.000 P = 0.000
The level of knowledge on blood donation – dependent variable	

Half of the respondents gave 6 to 8 correct answers. The median amounted to 7, which means that at least half of the respondents had that score.

The study indicates that there are no statistically significant differences between the level of knowledge on blood donation between people who, do not know, or know somebody, who is an honorary blood donor. 4)

Tab. 4. The correlation of having friends, who are blood donors and the level of knowledge about blood donation

Mann Whitney Test	
Variables	**Result**
Honorary donor among friends / family – independent variable (grouping)	U = 1133.500 P = 0.687
The level of knowledge on blood donation – dependent variable	

Discussion

Students comprise an important group of blood donors. Desire to help others is usually the main motivation of blood donation [3–6]. However, conscious blood donation should be also based on reliable knowledge, especially in medical students. Based on the conducted survey, 85% (85) of the students in Opole Medical School, assessed their knowledge on blood donation and transfusion medicine as intermediate and 11% (11), think that they are experts in this field. However, the analysis of more detailed questions did not confirm such a high self-esteem of the students. Mostly the knowledge on privileges for honorary blood donors and consequences of regular blood donation for health.

According to the diagnostic survey conducted in our University in 2008, many students, who were not donors (61.2% out of 85 surveyed people) were also afraid of potential adverse effects, the regular blood donation may have.

In comparison with the results of the survey conducted in 2008, at present the number of people, who cannot donate blood due to contraindications decreased. The percentage of students, who do not donate blood because of fear also decreased from 21% (21) in 2008 to 14% (14) in 2015. The number of students, who claim that they have never had a chance to donate blood decreased from 13% (11) in 2008 to 11% (11) at present. However, the percentage of people who are afraid of infection increased significantly from 23% (20) in 2008 to 62% (62) in 2015. Also, students who are afraid of getting addicted to blood donation is 9 times higher than in 2008[3]. However, it should be stressed that these studies were conducted on two different groups of respondents, which could have significantly affected the results of the comparison.

The study conducted by Kozlowska K. and Mayor-Kemp M. on the university students in Wrocław between 2009 and 2010 revealed similar results and the knowledge of these students was assessed as unsatisfactory. Students have the least knowledge about the benefits of being a donor [4]. Similarly to own study, the level of knowledge of blood donors in Wroclaw is higher in comparison to the people who never donated blood. Also the level of knowledge of the students at Opole Medical School was average, despite a positive attitude towards honorary blood donation. Many students did not know in what conditions and when they can donate blood.[5].

Health-related reasons were most common explanations, why the students refuse to donate blood. Similarly to the results obtained in the study conducted by students of Medical University in Lublin [6].

Concerns reported by the students regarding blood donation and risk of infections during donation result from insufficient knowledge about blood donation procedure.

The results of own research and studies conducted in the other universities indicate that students generally have a positive attitude towards honorary blood donation. This does not, however, translate into the percentage of people actively engaged in the honorary blood donation.

Conclusions

1. The actions undertaken to promote blood donation in Opole Medical School should be improved.
2. It is important to increase the knowledge of students about the risk for blood donors.
3. Knowledge of current privileges for honorary blood donors should be promoted.

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Correspondence address:
Sabina Czapla
ul. Zamknięta 2
46-375 Pludry
Phone: (+48) 512 523 341
E-mail: sabina.026@wp.pl

Teresa Niechwiadowicz-Czapka
Państwowa Medyczna Wyższa Szkoła Zawodowa w Opolu
ul. Katowicka 68
45-060 Opole
Phone: (+48) 601 393 775
E-mail: tecia7@onet.eu

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ART THERAPY IN NURSING

TERAPIA ARTYSTYCZNA W PIELĘGNIARSTWIE

Gergana Avramova[B,D–F]

Prof. dr. Assen Zlatarov University, Burgas, Bulgaria

A – przygotowanie projektu badania | study design, **B –** zbieranie danych | data collection, **C –** analiza statystyczna | statistical analysis, **D –** interpretacja danych | interpretation of data, **E –** przygotowanie maszynopisu | manuscript preparation, **F –** opracowanie piśmiennictwa | literature review, **G –** pozyskanie funduszy | sourcing of funding

SUMMARY

Illness, emotions, art and therapy – is there a connection between them? Is there a significant bond between nursing and art therapy and if there is one, how can we put it in practice?

The belief that the mind plays an important role in physical illness goes back to the earliest days of medicine. New molecular and pharmacological tools have made it possible to identify the network that exists between the immune system and the brain, and allows the two system to signal each other continuously and rapidly. Disruption of this communication in any way exacerbates the diseases that the immune system guards against. It is getting clear now for scientists how signals from the immune system can affect the brain and the emotional and physical responses it controls: the molecular basis of feeling sick. In all this, the boundaries between mind and body are beginning to blur.

The significance of these findings seems promising to extend the range of therapeutic treatments available for various disorders.

Nursing, as identified with keeping care for the patients during the process of healing, is facing the challenge to create and maintain a relationship with the patients. And this unity between nurses and patients should be built on the base of commitment, compassion, good will and empathy. The art of nursing is the heart of caring.

It is obvious in recent years, that there are great benefits in asking patients to connect themselves in any kind of art therapy. Artistic expression is an activity that involves the brain in ways that can be used to enhance therapeutic treatment and evaluation.

This article is showing that there is a bond between illness and emotions, and that art therapeutic methods can be used in nursing, in order to achieve better results in the process of healing.

Using art therapeutic methods in nursing practice gives a way to improve the well-being of the patients, to create a relationship filled with empathy, courage and compassion.

KEYWORDS: illness, emotions, nursing, art therapy

STRESZCZENIE

Choroba, emocje, sztuka i terapia – czy jest jakiś związek pomiędzy nimi? Czy istnieją powiązania pomiędzy działaniami pielęgniarskimi a terapią artystyczną? Jeśli tak, to jakie? Jak można je wprowadzić w życie?

Wiara w to, że umysł odgrywa ważną rolę w chorobie, sięga najwcześniejszych czasów medycyny. Nowe narzędzia molekularne i farmakologiczne umożliwiły poznanie powiązań pomiędzy układem odpornościowym a mózgiem oraz odkrycie mechanizmów umożliwiających ciągłą i szybką komunikację pomiędzy obydwoma układami. Zakłócenie tej komunikacji w jakikolwiek sposób nasila chorobę, z którą walczy układ odpornościowy. Obecnie naukowcy dowiadują się, jak sygnały pochodzące z układu immunologicznego mogą wpływać na mózg, oraz poznają reakcje emocjonalne i fizyczne, które są kontrolowane przez mózg – molekularną podstawę odczuwania choroby. W tym wszystkim granice pomiędzy umysłem a ciałem zaczynają się zacierać.

Znaczenie tych faktów jest obiecujące dla poszerzenia zakresu zabiegów terapeutycznych w różnych schorzeniach.

Pielęgniarstwo, utożsamiane z opieką sprawowaną podczas procesu gojenia, stoi przed wyzwaniem tworzenia i utrzymywania relacji z pacjentami. To uczucie jedności pomiędzy pielęgniarką a pacjentem powinno opierać się na zasadzie zaangażowania, współczucia, dobrej woli i empatii. Podstawą sztuki pielęgniarstwa jest troska.

W ostatnich latach oczywiste stały się korzyści płynące z zaangażowania pacjenta w jakikolwiek rodzaj terapii artystycznej. Ekspresja artystyczna jest czynnością, która angażuje mózg w sposób, który może zostać wykorzystany w celu zwiększenia efektów terapeutycznych, a także pozwala na ich ocenę.

Niniejsza praca pokazuje związek pomiędzy chorobą a uczuciami. Techniki terapii artystycznej mogą być stosowane w pielęgniarstwie celem osiągnięcia lepszych wyników leczenia.

Stosowanie metod terapii artystycznej w praktyce pielęgniarskiej jest sposobem na poprawę samopoczucia pacjentów oraz stworzenie związku przepełnionego empatią, odwagą i współczuciem.

SŁOWA KLUCZOWE: choroba, emocje, pielęgniarstwo, terapia artystyczna

1. The connection between nursing, emotions and healing

Nursing worldwide is for its professionals to ensure quality care for all, while maintaining their credentials, code of ethics, standards and competencies, and continuing their education.

The connection between nursing and illness is universal, for it is worldwide recognized for its professionals to initiate life-saving measures, improve and promote the health and well-being of the planet, ease pain, suffering, and loss. But is it possible to distinguish a general scope between nursing and art therapy?

Since the origins of the nursing profession with Florence Nightingale, nursing has been described as an art. According to Finfgeld-Connett, the art of nursing is grounded upon both empirical and metaphysical knowledge [1]. The foundation of empirical knowledge is research methodologies, or the science of nursing. Metaphysical knowledge is obtained through time and unique experiences in the nursing profession. The art of nursing blends the science of nursing with the philosophical holistic approach nurses implement to treat the patient as a whole, or the heart of nursing. The art of nursing is the heart of caring [2]. As it comes to caring, it is the Human Touch, that leads to compassion. The inner capacity to respond to the needs of individuals, the application of all the science known to give the utmost care the patient needs, is the art of nursing [3].

Although the ancient Greeks understood intuitively that emotions and health are one, it happened through the years, that the role of emotions in health and disease had been too often cast aside. It is obvious now, as some authors have observed, that the unspoken dogma of modern science is "if you can't measure it, it isn't real". [4] But finally, widespread advances in technology, enabling researchers to track the pathways of mind and immunity, do discover, that the brain and the immune system can and do communicate! Usually, all the symptoms of illness are described with the phrase "feeling sick" – this means that our awareness of being ill has a sensory component, such as pain, and emotional component, such as feeling sad.

2. The art of nursing

Art is vital – not just to instil hope, but to keep alive the ability to feel hope; not just to express love, but to keep alive the capacity to know love; not just to encourage empathy, but to keep alive the sensory responsiveness that empathy requires; not just to build relationships with and among others, but to keep alive the sensory discernment needed to ensure that whatever relationships we create are and will be mutually life-enabling.

Nursing is widely considered as an art and a science, wherein caring forms the theoretical framework of nursing. Nursing and caring are grounded in a relational understanding, unity, and connection between the professional nurse and the patient. Task-oriented approaches challenge nurses in keeping care in nursing. This challenge is ongoing as professional nurses strive to maintain the concept, art, and act of caring as the moral centre of the nursing profession. Keeping the care in nursing involves the application of art and science through theoretical concepts, scientific research, conscious commitment to the art of caring as an identity of nursing, and purposeful efforts to include caring behaviors during each nurse-patient interaction [5].

If we try to explore the art – which is the compassionate part of nursing and the science – which is the evidence practice of nursing, can we state that one is more important than the other? It is obvious, that one should be compassionate, fulfil the patient's' emotional needs and put their plan of care into action. So it can be said, that art and science of nursing should weight both equally [6].

The art of nursing is the perception of patient needs based on their expressed behavior. Unlike scientific knowledge, art puts the focus on how experiences feel and what they mean. This helps nurses connect with patients during care and is what some call being in true presence. This requires nurses to practice the skill of active listening and encourage communication that draws attention to patient, family and community values. When nurses practice true presence, they can determine what's most important to patients also by nonverbal feedback such as facial expressions, gestures. With this information, nurses can facilitate health by introducing new possibilities that may help patients enhance their quality of life. This allows nurses to intuitively understand how to deliver effective and satisfying care with both creativity and style. Nurses come prepared to meet patients with wide ranging skill sets that cover all aspects of the person: physical, mental, spiritual, cultural and emotional. By practicing these skills, nurses can develop innovative approaches to care [7].

The two major terms – art and science, have considerable significance for the practice of nursing.

Nursing has been called a "helping art" [8], also an "enabling, empowering or transforming art". Its aim, among other goals, is to produce favorable changes within clients through nursing services. The nurse uses sensitivity, intuition, imagination, resourcefulness, versatility and innovation. Each nurse is obliged to be caring, compassionate, competent person. The unique blend of ideals, values, integrity and commitment to the well-being of others makes each nurse a one-of-a-kind artist in nursing practice [9].

3. The essence of art therapy

Art therapy is based on the idea that the creative process of art making is healing and life enhancing and is a form of nonverbal communication of thoughts and feelings [10]. Like other forms of psychotherapy and counselling, it is used to encourage personal growth increase self-understanding and assist in emotional reparation. It has been employed in a wide variety of settings with children, adults, families and groups. It is a modality that can help individuals of all ages create meaning and achieve insights, find relief from overwhelming emotions or trauma, resolve conflicts and problems, enrich day life and create sense of well-being.

Art therapy supports the belief that all individuals have the capacity to express themselves creatively and that the product is less important than the therapeutic process involved. The therapist's focus in not specifically on the aesthetic merits of art making but on the therapeutic needs of the person to express.

Even the simplest drawing task offers unique possibilities for expression that compliments and in many cases helps the person to communicate what words cannot.

Because it is a relatively new field, there is still debate on how to define art therapy. Some therapists see it as modality that helps individuals to verbalize their thoughts and feelings, beliefs, problems and world views. By this definition, art therapy is an adjunct to psychotherapy, facilitating the process through both image making and verbal exchange with the therapist. Others see art itself as the therapy. That is, the creative process involved in art making, whether it be drawing, painting, sculpting or some other art form, is what is life enhancing and ultimately therapeutic.

4. The impact of art therapy

Describing how art therapy works to benefit individuals, we can point the researchers Haeyan, van Hooren and Hutchemaekers, who have identified the possible effects of art therapy on the recovery process in groups of adults, using Grounded Theory Approach. They were able to identify a set of five concepts that are as follows:

- Perception and self-perception; individuals reported that art expression helped them focused on the present moment, identify emotional responses and experience connections between emotion and body awareness.
- Personal integration; individuals felt that through expression of their experiences in art, identity and self - image were strengthened and more positivity was possible.
- Emotion and impulse regulation; individuals learned through art expression to modulate emotional responses, thus experiencing more freedom from them and to regulate emotions.
- Behavior change; many individuals reported that they learned to change their behavioral responses through the process of art expression.
- Insight and comprehension; individuals reported, that art expression helped them to put their emotions and non-verbal experiences into words.

Recent scientific findings about how images influence emotion, thoughts and well-being and how the brain and body react to the experience of drawing, painting or other art activities are clarifying why art therapy may be effective with a variety of populations. As science learns more about the connection between emotions and health, stress and disease, and the brain and immune system, art therapy is discovering new frontiers for the use of imagery and art expression in treatment [11].

The relationship between neuroscience and art therapy is an important one that influences every area of practice. Kaplan underscores the overall importance of scientific – mindness in the practice of art therapy, the significance of neuroscience to the field and the relevance of mind – body unity to mental imagery and artistic activity [11].

Art therapy is considered a mind-body intervention, although it has been used mostly as a form of psychotherapy rather than an intervention that modifies psychology symptoms and other aspects of health. Only recently research in art therapy is beginning to indicate why it can be used as a mind – body method [11].

5. The bond between nursing and art therapy

The human organism is an "open" system that seeks to remain unchanged under the constant influence of the substances and energy flowing into it – the so-called state of mobile equilibrium [12]. The emotions and health are bond together in a complex relation that should be maintained in a constant harmony. Therefore, the art of nursing is giving its supportive role in keeping the process of well – being during the medical treatment of the patients, helping to find balance between the body and the mind.

Medical applications of art therapy are a natural extension of the use of it with populations. The fundamental qualities that make the creative process empowering can be also used for those undergoing medical treatment. When the ill person engages in art making, he or she is in charge of the work – the materials to be used; the scope, intent and imagery; when the piece is finished; and whether it will be retained or discarded. Participating in creative work within the medical setting can help rebuild the patient's sense of hope, self – esteem, autonomy and competence while offering opportunities for safe and contained expression of feelings [13].

Conclusion

Art therapy in the medical setting offers the potential for humanizing the health care experience and empowers patients to engage their intuitive, creative wisdom in the work of getting well. Listening to patients and helping them find ways to tap their inner resources through art expression is the cornerstone of art therapy. It can be used in nursing to establish a bond of trust and reliance between the nurse and the patient, giving hope and courage in the process of healing.

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Correspondence address:
Gergana Avramova
Assistant Professor
Prof. Dr. Assen Zlataro University
Burgas, Republic of Bulgaria
E-mail: g.avramova@abv.bg

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   – Thomas S. A comparative study of the properties of twelve hydrocolloid dressings. World Wide Wounds [online] 1997 [cit. 3.07.1998]. Available from URL: http://www.smtl.co.uk/World-Wide-Wounds/.
d) Books/Monographs/Dissertations
   – Milner AD, Hull D. Hospital paediatrics. 3rd ed. Edinburgh: Churchill Livingstone; 1997.
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e) Chapter within a book
   – Weinstein L, Swartz MN. Pathogenic properties of invading microorganisms. In: Sodeman WA jun, Sodeman WA, ed. Pathologic physiology: mechanisms of disease. Philadelphia: WB Saunders, 1974: 457–472.
f) Conference proceedings
   – Harnden P, Joffe JK, Jones WG, editors. Germ cell tumours V. Proceedings of the 5th Germ Cell Tumour Conference; 2001 Sep 13–15; Leeds, UK. New York: Springer; 2002.

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- D – interpretacja danych (*interpretation of data*)
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