SELECTED HEALTH BEHAVIOURS OF NURSING STUDENTS

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ABSTRACT

Introduction: Health-promoting behaviours determining health depend on many factors: the stage of development of the individual and of the environment, education, and broadly understood media. The undertaking and expression of health behaviours by nursing students can imply their physical and psychological preparation for the profession and can be used in professional work in shaping these behaviour's among patients. The results presented herein constitute a continuation and expansion of the study on selected health behaviours of nursing students from the Faculty of Health Sciences at the Jagiellonian University and the sources of health knowledge they use in social media.

The aim of the study was to evaluate selected health behaviours of nursing students.

Material and methods: The study was conducted in 2021 among 110 students at the Faculty of Health Sciences at the Jagiellonian University. A diagnostic survey method was used in the study, and the authors' survey questionnaire, which contained 6 categories of questions, and Z. Juczynski's Health Behaviour Inventory were used to collect data. The results were developed using the IBM SPSS 26.0 package, and the significance level was adopted as $p \leq 0.05$.

Results: The average assessment of health behaviour in the study group was at an average level. Scores on the health behaviour subscales are as follows: proper eating habits – 3.51 (the students declared eating whole-grain products, vegetable fats, and limiting fast food), preventive behaviour's – 3.38, positive mental attitude – 3.46, and health practices – 3.16. Statistical analysis did not confirm the relationship between gender and place of residence and the health behaviours undertaken by the students. Respondents in the 21-22-year-old age group and second-year undergraduate students showed higher scores in positive mental attitude compared to the other respondents.

Conclusions: Health-promoting behaviours by nursing students should be strengthened to ensure that they are prepared for the profession in terms of the educational function.

Key words: health behaviour, nursing students, health.

INTRODUCTION

Health behaviours represent activities undertaken regardless of health status, in order to promote, protect, and maintain our health, despite uncertainty regarding their effectiveness [1]. Such behaviours are conditioned by beliefs, attitudes, values, knowledge, the opinion of the environment, health-relevant skills, health policies, legislation, and the availability and quality of health care [1, 2]. In addition, they are related to lifestyle [2] and health education, which contribute to caring for and increasing a sense of responsibility for health [1]. Health behaviours can be divided according to their benefits to health: pro-health [1] and anti-health [2]; health behaviours in prevention, illness, and rehabilitation [2]; as well as by health status [2]. Presentation of health behaviours by nursing students can build professional credibility [3]. In addition, improving health behaviours in the area of physical activity can also influence preparation for the profession [4].

The results presented herein constitute a continuation and expansion of the study on selected health behaviours of nursing students from the Faculty of Health Sciences at the Jagiellonian University and the sources of health knowledge they use in social media.

The aim of this study was to evaluate the health behaviours of nursing students of the Faculty of Health Sciences at the Jagiellonian University.

MATERIAL AND METHODS

Due to the COVID-19 pandemic, the survey of 110 first- and second-year nursing students of the undergraduate and graduate levels of the Faculty of Health Sciences at the Jagiellonian University was

conducted in 2021 online with the written approval of the Dean of the Faculty of Health Sciences and the consent of supervisors of each year group. The students, after being informed about the purpose and conduct of this study, how to fill out the research tools, as well as its voluntary nature and anonymity, agreed to participate in the study and filled out the research tools on their own.

The survey covered 67 students studying at the undergraduate level. First-year students represented 40 individuals (36.4%), second-year students represented 27 individuals (24.5%), and 43 students were at the graduate level. First-year students graduate level represented 20 individuals (18.2%), and second-year graduate level students represented 23 individuals (20.9%). The majority of respondents (95.5%) were women, and the remaining 4.5% were men. 58.2% of the respondents lived in rural areas. The average age of the respondents was 21.8 years. The largest number of respondents was over 22 years old (38.2%), and the smallest number were in the 21-22-year-old age range (29.1%). Individuals aged 19-20 years accounted for 32.7%.

A diagnostic survey was used in the study. The authors' survey questionnaire was used to collect data on nutrition, physical activity, prevention, mental health and health promotion, and the importance of social media in these areas. To assess the health behaviours undertaken by the respondents Z. Juczynski's Health Behaviour Inventory (HBI) with the following scale: 1 – almost never, 2 – rarely, 3 – occasionally, 4 – often, 5 – almost always. The possible score was in the range 24-120 points. Responses were summed to obtain the overall health behaviour index. A high score indicated a high intensity of health behaviour [5].

The research results were analysed using the IBM SPSS 26.0. The Kruskal-Wallis test was used. A significance level of $p \leq 0.05$ was adopted for all statistical calculations.

TEST RESULTS

Results based on the Health Behaviour Inventory

The mean score of the HBI among the surveyed students was 81.08 ±13.70, which, per standardized unit, corresponds to a level of 5th sten, representing a result classified as average. The highest values were obtained in the area of proper eating habits – 3.51, and the lowest in the category of health practices – 3.16 (Table 1).

Selected health-promoting behaviours of students based on the authors' survey questionnaire

The characteristics of selected health-promoting behaviours of respondents in the areas of nutrition, physical activity, preventive behaviours, and mental health hygiene are presented below (Table 2).

Analysis of the relationship between sociodemographic variables and study-related variables

Sex did not significantly differentiate the positive mental attitude (p = 0.399), preventive behaviours (p = 0.676), proper eating habits (p = 0.086), and health practices (p = 0.240) of the students.

Despite the small percentage of males in the study group, the relationship between gender and health behaviours was investigated, but the results obtained did not give rise to conclusions in this area. The level of significance (p) for the overall HBI score was 0.103. Place of residence also did not differentiate health behaviours in the categories of positive mental attitude (p = 0.839), preventive behaviours (p = 0.613), proper eating habits (p = 0.878), and health practices (p = 0.450). For the overall HBI score, p = 0.990.

Students between the ages of 21 and 22 years had higher values of positive mental attitude compared to younger and older respondents (Table 3).

Second-year undergraduate respondents were characterized by higher values of mental attitude area compared to other respondents. In addition, this group scored higher overall on the basis of HBI, but these differences can only be considered in terms of a statistical trend (Table 4).

DISCUSSION

Based on the HBI in the present study, the highest values in terms of reported health behaviours were obtained in the category of proper eating habits

Table 1. Mean scores of each category of the Health Behaviour Inventory (HBI) scale among respondents

Category of the HBI	M	Me	SD	Min	Max
Positive mental attitude (1-5)	3.46	3.50	0.68	1.50	5.00
Preventive behaviour (1-5)	3.38	3.33	0.65	1.33	4.83
Proper eating habits (1-5)	3.51	3.50	0.74	1.50	5.00
Health practices (1-5)	3.16	3.00	0.79	1.33	5.00
Total HBI (24-120)	81.08	80.00	13.70	41	107

M – mean, Me – median, SD – standard deviation, Min – minimum, Max – maximum

(3.51). Perhaps knowledge in this area formed in the family environment, the course of academic education, or through the media was easier to implement in terms of proper eating habits compared to regular preventive health care, maintaining a positive mental attitude, or health practices. Similar values were presented by Gujska *et al.* [6] and Walentukiewicz *et al.* [7] – 3.49 and 3.09, respectively. Lower values were obtained by Kropornicka *et al.* – 3.32 and 3.09 [8] and Kupcewicz *et al.* – 3.21 [9], and Czerski, who surveyed students in a major other than nursing – 3.07 [10], and higher values – 4.65 by Radosz *et al.* [11]. Most of the students surveyed declared proper eating habits. Similar findings were presented by Sander-Grabowska *et al.* [12], while in a study conducted by Nawrocka *et al.* students consumed whole-grain products in lower percentages and limited fats of animal origin [13]. In comparison, Hadaye *et al.* showed irregularity in meal intake, abnormal body weight, low vegetable and fluid intake, and malnutrition [14], and Abd El-Kader *et al.* showed the use of snacks between meals [15]. This study showed that the physical activity undertaken was not encouraging. Low levels of physical activity among nursing students were also presented by Sadłowska *et al.* [16], and Kim *et al.* [17], Hwang *et al.* [18], Fashafsheh *et al.* [19], and Cilar *et al.* [20] with a lack of regularity in this regard. The low physical activity of students and its low regularity may be related to poorly formed habits in this regard in the earlier period of health-promoting education. Meanwhile, the current reason may also be a high curriculum load and lack of time for regular physical activity. Despite their knowledge of the advantages, and the consequences of physical inactivity, the students failed to apply this knowledge in practice.

Prevention is extremely important in health behaviour. The students surveyed were most likely to have their blood pressure measured and their skin monitored. Students may be at risk of developing hypertension, as confirmed by Begley [21] and by Urióstegui-Flores *et al.* [22]. A study conducted by Özüm *et al.*, in this group of subjects emphasized the importance of education for skin self-examination [23]. Breast self-examination was not performed by half of the female students surveyed. Results with more favourable preventive behaviours in this regard were presented by Erbil and Bolukbas [24], Piaszczyk *et al.* [25], and Tomaszek *et al.* in a group of third-year female students [26]. The results of our own study showed that students do not perform testicular self-examination. Possibly, broader education would help change health behaviour – such conclusions regarding self-examination have already been presented by Shriver *et al.* [27]. Nearly half of the subjects controlled their cholesterol levels. Urióstegui-Flores *et al.* confirmed low HDL cholesterol levels in most of the nursing students surveyed [22]. Assessment of students' health behaviours by

Table 2. Selected health-promoting behaviours of surveyed nursing students

Selected health-promoting behaviours		*N*	%
Nutrition			
Controlling the number of calories consumed per day		21	19.0
Paying attention to the composition of products		68	62.0
Taking min. 2 litres of fluids per day		67	61.0
Recognizing vegetables and fruits as a dietary staple		47	43.0
Eating	Whole grains	86	78.0
	Two servings of dairy products per day	58	53.0
	Meat up to about 0.5 kg/week	37	34.0
	Vegetable fats in the diet	90	82.0
Avoiding	Animal fats	48	44.0
	Fast-food	77	70.0
Limiting	Intake of sweets, sugar	52	47.0
	Salt	63	57.0
Taking 5 meals a day with 3-4 h breaks		44	40.0
Physical activity			
Taking a walk instead of public transportation or a car		53	48.0
Taking the stairs instead of an elevator		67	61.0
Physical activity, min. 2.5 hours a week in the form of walking		61	55.5
Gym		11	10.0
Preventive examinations			
Visiting a gynaecologist once a year		69	66.0
Breast self-examination once a month by female students		45	43.0
Visiting a urologist and performing testicular self-examination once a month		0	0.0
Preventive examinations from venous blood, glucose measurement, and general urine examination once a year		63	57.0
Blood pressure measurement once a year		101	92.0
Cholesterol control once every 5 years		53	48.0
Systematic observation of nevi on the skin		80	73.0
Dental check-up once every 6 months		59	54.0
Mental health hygiene			
Sleep of 7-9 h/day		62	56.0
Frequent experience of stress		79	72.0
Use of psychological consultation		18	16.0
Coping with stress		88	80.0
Coping with stress	Mainly with psychological support from loved ones	78	70.9
	Pursuing hobbies	53	48.2
	Addictions	29	26.3

Table 3. Age vs. health behaviours undertaken by respondents

Age		Positive mental attitude (1-5)	Preventive behaviour (1-5)	Proper eating habits (1-5)	Health practices (1-5)	Total HBI (24-120)
19-20 years old *n* = 36	M	3.53	3.44	3.50	3.07	81.28
	Me	3.58	3.42	3.50	2.92	78.50
	SD	0.78	0.75	0.74	0.68	13.82
21-22 years old *n* = 32	M	3.62	3.42	3.58	3.22	83.06
	Me	3.75	3.42	3.67	3.25	83.00
	SD	0.56	0.55	0.68	0.85	12.86
Over 22 years old *n* = 42	M	3.28	3.31	3.46	3.19	79.40
	Me	3.33	3.25	3.42	3.08	78.50
	SD	0.64	0.64	0.80	0.84	14.31
Total *N* = 110	M	3.46	3.38	3.51	3.16	81.08
	Me	3.50	3.33	3.50	3.00	80.00
	SD	0.68	0.65	0.74	0.79	13.70
H Kruskal-Wallis		6.212	0.993	0.307	0.703	1.338
p		0.045	0.609	0.858	0.703	0.512

N – number of observations, M – mean, Me – median, SD – standard deviation, Min – minimum, Max – maximum

Table 4. Year of study vs. health behaviours undertaken by respondents

Year of study		Positive mental attitude (1-5)	Preventive behaviour (1-5)	Proper eating habits (1-5)	Health practices (1-5)	Total HBI (24-120)
1 (*n* = 40)	M	3.46	3.38	3.43	3.00	79.55
	Me	3.50	3.42	3.42	2.83	77.50
	SD	0.78	0.73	0.71	0.77	14.18
2 (*n* = 27)	M	3.81	3.56	3.70	3.43	87.04
	Me	3.83	3.67	3.67	3.33	89.00
	SD	0.55	0.54	0.70	0.79	12.52
4 (*n* = 20)	M	3.24	3.33	3.58	3.21	80.15
	Me	3.25	3.25	3.67	3.00	79.50
	SD	0.42	0.63	0.72	0.71	10.72
5 (*n* = 23)	M	3.25	3.24	3.36	3.09	77.57
	Me	3.33	3.17	3.33	3.00	78.00
	SD	0.66	0.64	0.85	0.86	15.08
Total (*N* = 110)	M	3.46	3.38	3.51	3.16	81.08
	Me	3.50	3.33	3.50	3.00	80.00
	SD	0.68	0.65	0.74	0.79	13.70
H Kruskal-Wallis		13.082	3.350	2.787	3.726	6.443
p		0.004	0.341	0.426	0.293	0.092

N – number of observations, M – mean, Me – median, SD – standard deviation, Min – minimum, Max – maximum

other authors also found, among others, inappropriate behaviours related to the use of unsafe weight loss methods [28], taking non-prescription medicines, and failing to perform periodic examinations, with varying justifications [15]. In comparison, Aranha *et al.*, assessing health-promoting behaviours, showed a good level of self-care among medical students, including nursing students [29]. In the study group, one-third of the students reported having sleep disorders, including difficulty falling asleep. Similar sleep problems were confirmed by students in a study by Piotrowski *et al.* [30]. The amount of time devoted to nighttime sleep by half of the students surveyed was 7-9 h/day, and in a study by Evans *et al.*, more than 1/3 slept less than 7 hours per night [31]. The study group admitted that they often experienced stress, which they coped with mainly through psychological support from loved ones, pursuing hobbies, and addictions. Unfortunately, the results also indicate undesirable behaviour, such as drug abuse, which can become a cause of addiction

with many negative consequences. Czyżowicz *et al.* reported that students in a stressful situation most often sought ways to solve the problem or expected support from loved ones [32]. Poor mental well-being and the risk of depression among students was noted by Cameron *et al.* [33]. It is worth considering that the pandemic may also be related to expressed health behaviours of students, as presented in the studies of Haggard *et al.* [34] and Suksatan *et al.* [35] reporting on feelings of stress. This study did not address the issue of health behaviour in the context of the COVID-19 pandemic. Drawing conclusions about students' health behaviours should always take into account their functioning in a given cultural system, economic conditions, knowledge, skills, and motivation to implement and sustain them.

The authors' own study showed that sex and place of residence were not related to health behaviours. Respondents aged 21-22 years and second-year undergraduate students obtained higher values in the positive mental attitude category compared to other students. Older students are better able to cope with stress and negative emotions than their younger counterparts, and therefore it is worth paying attention to this aspect at the initial stage of academic training, shaping effective methods of coping with stress and its consequences among students from the first year, which can translate positively into their mental condition in the course of their education and future professional work, which is also significantly mentally taxing. Nawrocka *et al.* showed that older students scored higher on good eating habits than younger respondents [13]. Differential and statistically significant levels of mental attitude and health habits were presented by Pawlak *et al.* [36], and Skowrońska reported that students' gender did differentiate the implementation of health practices [37]. Czerski showed that female students rated health practices highest and preventive behaviours lowest. However, male students scored highest in the area of positive mental attitude and lowest in the area of proper eating habits. Health behaviours were not dependent on the respondents' age [10].

Education of nursing students in the area of health behaviour is reasonable [38] due to the formation of appropriate health-promoting behaviours in patients [11]. Some authors suggest that it would be appropriate to develop health behaviour shaping programs easily accessible via the Internet [18].

RESEARCH LIMITATIONS

The authors of this study are aware that the student group is not very large and therefore cannot be considered representative, but the results obtained expand this area of research. The insignificant percentage of male students among the study group was mainly due to the specific nature of the faculty, as the decision to study nursing is mainly made by women. Perhaps conducting a study at several universities could broaden the group of men surveyed and give legitimacy to conclusions based on the results obtained, especially with regard to the analysis of the relationship between health behaviour and demographic variables. Conducting future research on a larger group of subjects could take into account the broader context of this issue, such as comparing health behaviours before, during, and after the pandemic in relation to educational stage.

CONCLUSIONS

The health behaviours of the surveyed nursing students can be described as average based on the HBI scores, and the most frequently expressed health-promoting behaviour was proper eating habits.

The health-promoting behaviours presented by nursing students should be shaped and reinforced in the course of their studies.

Disclosure

The authors declare no conflict of interest.

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