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Lifestyle, sleep quality, and overall mental health of nursing students

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Abstract

Introduction: Lifestyle is often a decisive factor influencing both, somatic health and mental health. The aim of the study was to evaluate the quality of life, sleep quality and general mental health of nursing students.

Material and method: The study used the diagnostic survey method. The study was cross-sectional. A questionnaire was used, which was made available to the respondents via the Internet. The survey included the demographic questionnaire, the Fantastic Life Inventory, the Pittsburgh Sleep Quality Questionnaire (PSQI) and the General Health Questionnaire (GHQ-30). A total number of 165 nursing students (151 female and 14 male), aged from 19 to 53, participated in the study. All calculations were made using version 24 of the SPSS statistical package.

Results: The general mental health of students, as measured by the GHQ-30 scale, was quite good – the mean score on the GHQ30 scale – M = 9.21 (SD = 7.80). The average lifestyle quality index in the Fantastic Life Inventory Scale (M = 34.99; SD = 6.19) indicated a high quality of lifestyle.

As many as 81% (N = 134) of the respondents followed the principles of rational nutrition and consumed a balanced diet, 92% (N = 152) did not abuse alcohol, 86% (N = 142) did not smoke, 93% (N = 154) had never used other psychoactive substances.

However, 57% (N = 94) of respondents did not undertake physical activity or undertook it on an insufficient level. Most of the subjects experienced sleep disturbances, the most common being difficulty falling asleep – 78.8% (N = 130), and waking up during the night or early in the morning – 70.3% (N = 116).

Conclusions: The quality of lifestyle and general mental health of the respondents was good. A significant influence of the quality of life on the occurrence of mental health disorders has been demonstrated.

Keywords: lifestyle, sleep quality, GHQ-30, nursing students, diet

Streszczenie

Wstęp: Styl życia jest często decydującym czynnikiem wpływającym na zdrowie, zarówno somatyczne jak i psychiczne. Celem badania była ocena jakości stylu życia, jakości snu oraz ogólnego stanu zdrowia psychicznego studentów pielęgniarstwa.

Materiał i metody: W badaniu zastosowano metodę sondażu diagnostycznego. Badanie miało charakter przekrojowy. Wykorzystano ankietę, która została udostępniona osobom badanym za pośrednictwem Internetu. Ankieta zawierała kwestionariusz demograficzny, Kwestionariusz Stylu Życia (Fantastic Life Inventory), Kwestionariusz Jakości Snu Pittsburgh (PSQI) i Kwestionariusz Ogólnego Stanu Zdrowia (GHQ-30). W badaniu udział wzięło 165 studentów pielęgniarstwa (151 kobiet i 14 mężczyzn), w wieku od 19 do 53 lat. Wszystkie obliczenia zostały wykonane przy użyciu pakietu statystycznego SPSS w wersji 24.

Wyniki: Ogólny stan zdrowia psychicznego studentów, mierzony skalą GHQ-30, był dosyć dobry-średnia punktacja w skali GHQ30 - M=9,21 (SD=7,80). Średni wskaźnik jakości stylu życia w Skali Fantastic Life Inventory (M=34,99; SD=6,19) wskazywał na wysoką jakość stylu życia.

81% (N=134) ankietowanych stosowało się do zasad racjonalnego żywienia i spożywało zbilansowaną dietę, 92% (N=152) nie nadużywało alkoholu, 86% (N=142) nie paliło papierosów, 93% (N=154) nigdy nie stosowało innych substancji psychoaktywnych.
Jednak 57% (N=94) badanych nie podejmowało aktywności fizycznej lub podejmowało ją na niewystarczającym poziomie. U większości badanych występowały zaburzenia snu, a najczęstszymi były trudności w zasypianiu-78,8%(N=130), oraz budzenie się w trakcie nocy lub przedwcześnie nad ranem 70,3% (N=116).
Wyniki: Jakość stylu życia i ogólny stan zdrowia psychicznego badanych był dobry.
Wykazano istotny wpływ jakości stylu życia na występowanie zaburzeń zdrowia psychicznego.

Słowa kluczowe: styl życia, jakość snu, GHQ-30, studenci pielęgniarstwa, sposób żywienia

Introduction

In recent years, there has been an increase in the number of studies on the impact of lifestyle on health. Their results indicate a significant relationship between the quality of lifestyle and health, both somatic and mental. Lifestyle usually significantly influences both the development and course of somatic diseases and mental disorders [1,2,3].

Healthcare professionals are a group of opinion makers in relation to health-related issues, including lifestyle. Often, the lifestyle of healthcare professionals is a role model for others.

In connection with the above, it is important to assess the quality of lifestyle including health care workers or future employees, i.e. students of medical faculties [1,2,3].

The results of the research on the lifestyle of students of medical and non-medical universities to date indicate the frequent occurrence of many negative behaviours in the field of rational nutrition, the amount of sleep, the use of psychoactive substances and physical activity [4,5,6,7].

The lifestyle includes elements such as: physical activity, diet, use of psychoactive substances, sleep quality, and stress levels. The choice of a good-quality lifestyle can be made when a person has an appropriate amount of knowledge on this subject [2].

Lifestyle is described as a characteristic of an individual behaviour that expresses person's philosophy of life. Another definition speaks of lifestyle as a choice of forms and types of behaviour. According to the World Health Organization (WHO), a lifestyle is a way of functioning that is based on the relationship between living conditions and patterns of behaviour determined by individual characteristics as well as social and cultural factors. The choice of a given lifestyle depends on the characteristics of the individual, i.e. cognitive and emotional traits as well as environmental and social factors [5,8,9,10].

Research results so far have indicated that the quality of lifestyle has a direct impact on our health. We can talk about different lifestyles: healthy or unhealthy, threatening or promoting health, pro-health or anti-health. A pro-health lifestyle is consciously taking actions aimed at increasing the health of the individual and the elimination of health-threatening behaviour. The following factors influence the creation of a specific lifestyle: education, income, nature of work, social origin, age and gender [10, 11].

Everyday stress, rush, and the multitude of tasks reduce the time students spend on improving or maintaining a healthy lifestyle. They often limit the time devoted to physical activity, rest and sleep [12].

Types of health behaviours

The WHO (1998) divided health-related behaviours into two groups: health-promoting behaviours and health-hazardous behaviours. Pro-health behaviours are all activities undertaken by an individual in order to strengthen, protect and maintain health. Health risk behaviours increase the likelihood of disease or health disorders.

Health-promoting behaviours usually include: taking care of the body and the environment, gaining an adequate amount of sleep and its quality, rational nutrition, physical activity adapted to one's abilities, avoiding excessive stress, the ability to deal with stress and the problems that cause it, not smoking, limiting consumption of alcohol, not using other psychoactive substances, not abusing drugs, avoiding risky behaviours, e.g. gambling, excessive use of the Internet, not wearing seat belts while driving a car. Health-promoting behaviours also include regular health checks [10].

Physical activity

Physical activity is considered a basic biological need that must be undertaken regardless of the period of life. It is also essential for a healthy lifestyle. It improves health and the quality of life while extending it, delays the aging process and is the basis for the prevention of various types of chronic diseases, including type II diabetes, cardiovascular diseases and obesity. Lack of physical activity contributes to the premature death of many people around the world. Systematic physical activity,

which has a positive effect on the mental and somatic state, results in maintaining the body's ability to exercise at an optimal level [10, 13].

Eating

Rational human nutrition, together with appropriate physical activity, is one of the most important group of pro-health behaviours. It affects both human development and the maintenance of good health. Healthy eating means proper habits associated with it, appropriate selection of the composition of meals, adjusted to the body's needs, along with the necessary nutrients, regular consumption of meals and the right amount of them [10, 1].

Sleep

Sleep is one of the most basic human physiological needs. It is a physiological state that reduces motor activity and abolishes interactions with the external environment. A person can quickly return from sleep to wakefulness through strong stimuli. In total, each person sleeps about 1/3 of their life, but the need for sleep is individual for each person, depending on age, health, type of work, season, lifestyle, and genetic conditions. Health-promoting behaviours related to sleep include an adequate amount of sleep, i.e. about 7-8 hours, going to bed at the same times, proper preparation for sleep, proper sleep conditions [10, 15, 16].

Stress

Stress is an inseparable companion of every person's everyday life, as well as a specific reaction to a strong stimulus called a stress factor or stressor.

In the nursing profession, its level is considered to be high due to a profession that holds a great responsibility for human life and health [6,17,18,19,20].

Use of psychoactive substances

The use of psychoactive substances (alcohol, nicotine, other psychoactive substances) can cause many health problems, both somatic and mental [7]. Common mental disorders associated with the use of psychoactive substances include addiction, mood disorders, anxiety disorders, psychotic disorders, and dementia [21].

Aim and method

The aim of the study was to determine the quality of lifestyle, sleep quality and general mental health of nursing students.

The method of a diagnostic survey was used in the study. The study was cross-sectional. The snowball method was used to collect the test results. An online questionnaire was used, made available on 28th January 2021 via social media, used by nursing students from all over the country. The survey questionnaire was created using Google. The link to the questionnaire was also sent via e-mail to students of nursing with a request to share it with other people studying in this field. The survey was completed on 15th April 2021. The respondents completed the questionnaire on their own in approximately 15 minutes on average. All the answers obtained remained confidential and the only people who had access to them were the researchers. The study protocol was approved by the Bioethics Committee at the Medical University of Lublin (identification code: KE-0254/8/2021).

The survey questionnaire included a sociodemographic part, the Pittsburgh Sleep Quality Questionnaire (PSQI), the Fantastic Life Inventory lifestyle questionnaire by Wilson, Nielsen and Cilisk for adaptation and validation by Beata Dobrowolska, as well as the General Health Questionnaire (GHQ-30) by David Goldberg Małyszczak in adapted from.

The Pittsburgh Sleep Quality Questionnaire evaluates the quality of sleep and its disturbances during the last month. This scale is used both in everyday clinical practice and in research. It consists of 10 questions with sub-items. The first four questions are about going to bed, getting up, waiting for sleep, and average sleep time. The remaining questions concern the frequency of individual factors influencing sleep, such as the number of awakenings at night due to breathing difficulties, pain, coughing, snoring, or waking up due to an inadequate temperature in the bedroom [22, 23, 24, 25].

The Fantastic Life Inventory questionnaire by Wilson, Nielsen and Cilisk, adaptation and validation by Beata Dobrowolska, examines lifestyle through questions from nine fields, physical, mental and social. It contains a total of 25 questions. FANTASTIC is an acronym that stands for: **F** - (Family and Friends) family and friends, **A** - (Physical Activity) physical activity, **N** - (Nutrition) nutrition, **T** - (Tobacco) tobacco, **A** - (Alcohol and other drugs) alcohol and others stimulants, **S** - (Sleep / Stress) sleep / stress, **T** - (Type of personality) personality type, **I** - (Insight) insight, **C** - (Career) career.

To each question, three answers can be given, rated on a scale from 0 to 2. The maximum score that can be achieved is 50 points. Interpretation of the results assumes the division into five quality lifestyle ranges: 0-19 requires improvement, 20-29 moderate, 30-34 good, 35-41 very good, 42-50 excellent [26].

The General Health Questionnaire (GHQ-30) by David Goldberg, adapted by Krzysztof Małyszczak, is used to assess the mental health of adults. The respondent fills in the questionnaire on his own. It assesses the severity of non-psychotic disorders of mental functions and makes it possible to initially detect the probability of their occurrence. The individual sensitivity, intensity

of experience and the sense of illness of the examined person have the greatest influence on the result. Each of the questions has 4 variants of answers: better than usual, the same as usual, worse than usual and much worse than usual. The study used the GHQ score assessment method, where the answers are scored as follows: 0-0-1-1, i.e. the first and second answer to the question are scored as 0 points, and the third and fourth as 1 point. The total sum of points that could be obtained was 30, and the result above 5 meant the occurrence of health disorders [27, 28, 29].

Statistical analysis

The analyses were carried out on the basis of the algorithm for selecting the appropriate statistical test, and the basic procedure of statistical inference based on testing the null hypothesis was used to verify the hypotheses. The hypotheses were verified based on the adopted threshold of statistical significance $p < 0.05$ - $p < 0.1$.

In the case of responses expressed on a categorical scale, the chi square tests of independence were used for calculations. If the p value for the tested statistics was lower than the adopted threshold $p = 0.05$, it was concluded that a statistically significant correlation was present. A regression analysis was also used to check the validity of the impact model. This analysis made it possible to check whether, on the basis of the selected predictors, it is possible to predict the variance of the dependent variable. All calculations were performed using the SPSS statistical package version 24 [30].

In order to investigate the influence of lifestyle quality, general level of sleep disorders, body mass index (BMI), smoking, alcohol consumption and the use of psychoactive substances on the incidence of mental disorders (the explained variable), a multivariate regression analysis was performed (Table 3).

Study group

The study involved 165 people aged from 19 to 53 (M = 25.76; SD = 7.53), with BMI ranging from 16.56 to 35.16 (M = 23.53; SD = 3.92). Most of the people in the study group were women (N = 151; 91.5%). Half of the study sample were single (N = 84; 50.9%), and every third respondent was in an informal relationship (N = 50; 30.3%). About forty percent of the respondents lived in a town with approximately 100 thousand inhabitants (N = 72; 43.6%), every third respondent lived in a village (N = 58; 35.2%), one in five respondents lived in a city up to 100,000 inhabitants (N = 35; 21.2%). More than three quarters of the respondents declared having higher education (N = 123; 74.5%), nearly one fifth of the participants had secondary education (N = 34; 20.6%). Almost half of the respondents described their financial situation as rather good (N = 80; 48.5%), every third person – as moderate (N = 47; 28.5%), and one fifth of the respondents described it as definitely good (N = 33; 20.0%).

Table 1. Characteristics of the studied group

		N	%
Sex	Male	14	8.5%
	Female	151	91.5%
Place of residence	Village	58	35.2%
	City with up to 100 thousands inhabitants	35	21.2%
	City with more than. 100 thousands inhabitants	72	43.6%
Education	Secondary	34	20.6%
	Student	1	0.6%
	Current Bachelor Student	1	0.6%
	Bachelor	123	74.5%
	Master	6	3.6%
Level of Studies	Master	121	73.8%
	Bachelor	43	26.2%
Marital Status	Informal relationship	50	30.3%
	Single	84	50.9%
	Married	30	18.2%
	Divorced	1	0.6%
Financial Situation	Bad	5	3.0%
	Moderate	47	28.5%
	Somewhat good	80	48.5%
	Defiantly good	33	20.0%

The research results

Physical activity of nursing students

The statistical analysis of the obtained data showed that the majority of the studied group – 57% (N = 94) performs physical exercise rarely or never, and 25.5% (N = 94) performs it twice a week. Less than one fifth of the respondents declared that they were physically active 3 times a week 17.6% (N = 29), and the distribution of numbers in the subgroups differed from randomness in a statistically significant way [$\chi 2$ (2, N = 165) = 43.02; $p < 0.001$] (figure 2).

Nutrition of nursing students

When it comes to 42.4% (N = 70) of the respondents, they declared that they care about a balanced diet once in a while, 38.8% (N = 64) declared that they do it almost

always, 18.8% (N = 31) of people rarely eat balanced meals (figure 2).

The vast majority (72.7%, N = 120) of respondents declared that they eat breakfast almost always, 15.8% (N = 26) indicated that they eat breakfast once in a while, and 11.5% (N = 19) of the respondents declared that they do it rarely (figure 3).

When it comes to 57.6% (N = 95) of the respondents, they consumed excessive amounts of sugar, salt, animal fats or fast-food every now and then, 24.8% (N = 41) of the respondents indicated their minimal consumption, and 17.6% (N = 29) of the students admitted that they often eat meals with excess of sugar, salt, animal fats or fast-food meals.

Alcohol consumption and the use of other psychoactive substances by nursing students

As many as 66.1% (N = 109) of the respondents consumed alcohol between 1 and 3 times a month, 17.0% (N = 28) declared that they did so once a week, and 9.1% (N = 15) of students indicated that they never consume alcohol. Only 7.3% (N = 12) consumed alcohol several times a week, and 0.6% (N = 1) daily. When it comes to 86.1% (N = 142) of the respondents, they did not smoke, and 93.3% (N = 154) had never used other psychoactive substances.

Occurrence of sleep disorders in the study group

Difficulties in falling asleep occurred in 78.8% (N = 130) of the respondents: in 32.7% (N = 54) less frequently than once a week, in 24.8% (N = 41) once or twice a week, in 21.2% (N = 35) three times and more frequently during the week.

As many as 70.3% (N = 116) of students experienced waking up during the night or prematurely in the morning. While 15.8% (N = 26) woke up three times or more during the week, 22.4% (N = 37) once or twice a week, and 32.1% (N = 53) less than once a week.

Sleep disturbances due to breathing problems occurred in 15.1% (N = 25) of respondents: in 10.9% (N = 18;) they occurred less frequently than once a week, in 3.6% (N = 6) once a week or twice a week and in 0.6% (N = 1) three or more times a week.

The cumulative proportions of the severity of sleep problems due to particular causes, expressed as mean ranks, are presented in the diagram (Figure 1).

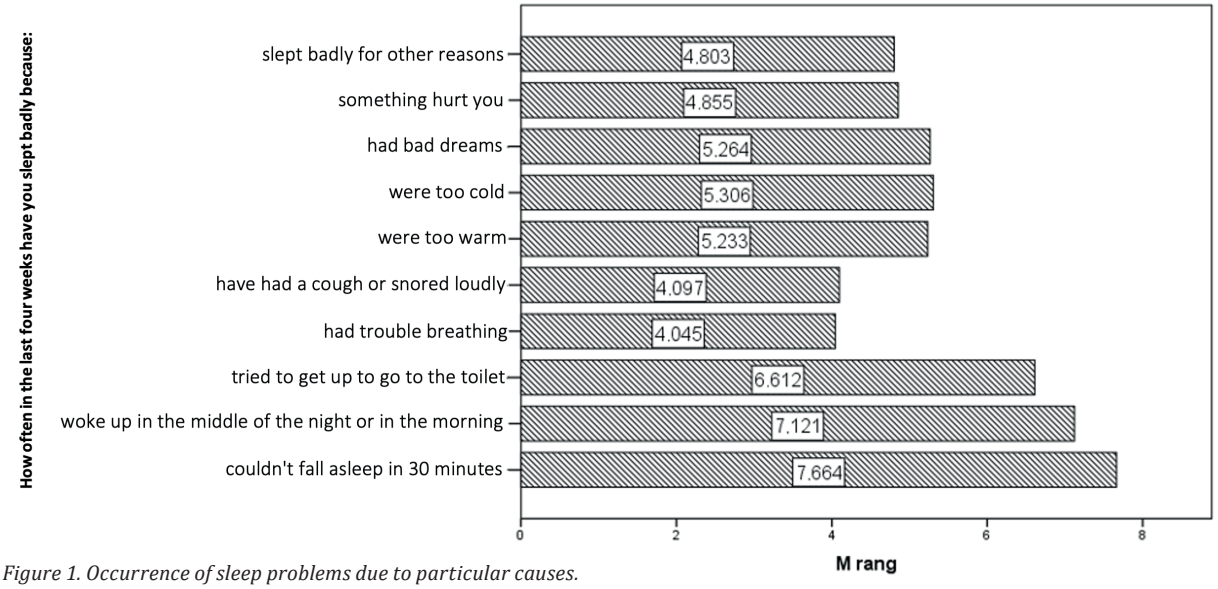

Figure 1. Occurrence of sleep problems due to particular causes.

Sleep quality, overall mental health, and lifestyle quality of nursing students

Descriptive statistics of indicators of mental health disorders, good lifestyle and general level of sleep disorders are presented in Table 2. To determine the shapes of the obtained distributions, the following statistics were calculated: range (min-max), measures of central tendency (mean) and dispersion (standard deviation), measures of asymmetry and concentration (skewness, kurtosis) and tests of normal distribution. To check whether the obtained distributions differ from the theoretical normal distribution, the Kolmogorov-Smirnov tests were calculated [31].

The obtained statistical values indicated that all

Table 2. Descriptive statistics for indicators of mental health disorders, positive lifestyle and general level of sleep disorders (N = 165)

	R	M	SD	Sk	Kurt	D
Mental health disorders	0-27	9.21	7.80	0.57	-0.86	0.13**
Positive lifestyle	15-48	34.99	6.19	-0.31	0.07	0.07*
General level of sleep disorders	0-19	7.04	3.50	0.88	1.09	0.13**

** p <0.05; ** p <0.01*

the variables showed significant discrepancies from the normal distribution. The mean index of mental disorders in the study group was M = 9.21 (SD = 7.80). Against the background of the range of variability, this value allows us to conclude that the indicator of the occurrence of mental disorders in the studied students was rather low. This is also confirmed by the following histogram, which indicates that in the studied group, rather low results dominated in this dimension (Figure 2).

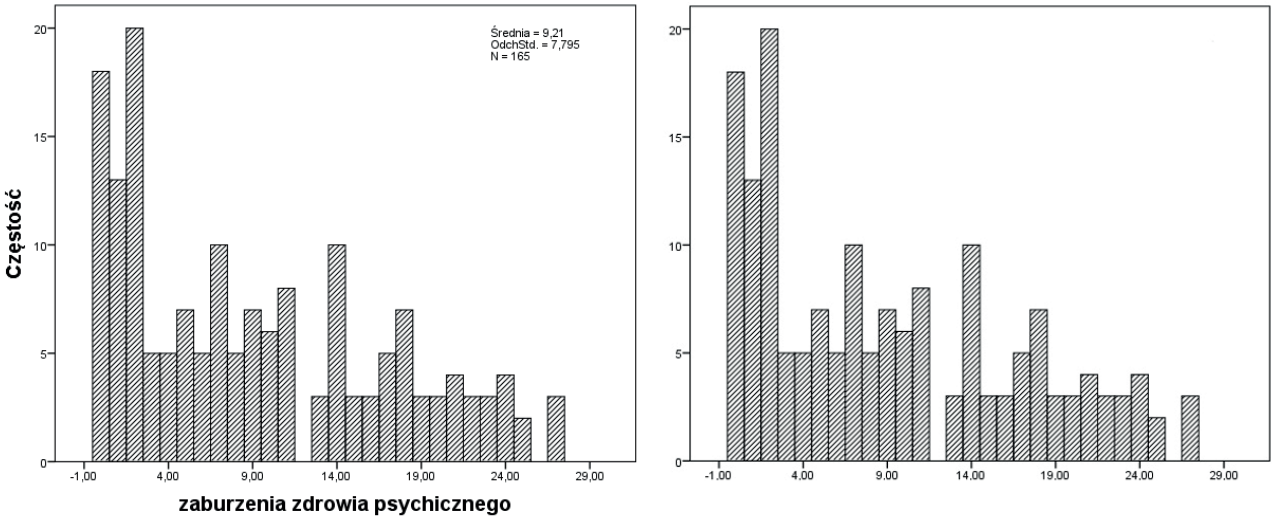

Figure 2. Summary of the results of the GHQ-30 Questionnaire.

The average lifestyle quality index (M = 34.99; SD = 6.19), against the background of the variability range, indicates an above-average level. In this case, the distribution of the quality of lifestyle assumed the shape of a left-side asymmetric distribution, which means the majority of high scores in the studied sample, corresponding to a good quality of lifestyle (Figure 3).

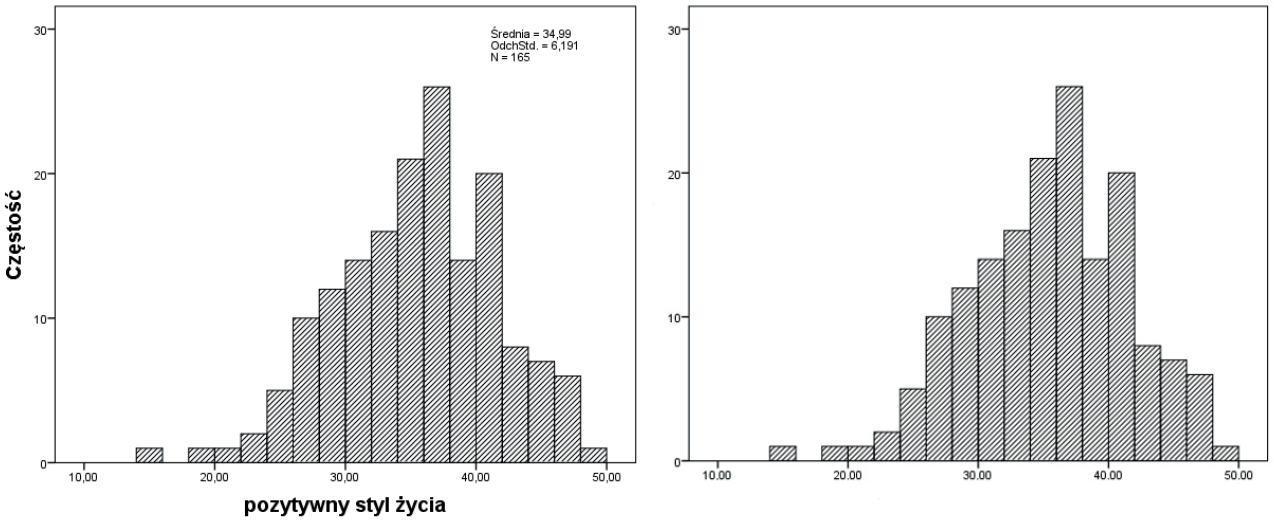

Figure 3. Quality of lifestyle

The overall level of sleep disorders ranged from 0 to 19 points, with the mean equal to M = 7.04 (SD = 3.50). These values allow us to consider the level of these disorders among nursing students as rather low. This is also confirmed by the following histogram, showing the right-skewed symmetry of the analysed variable (Figure 4).

Selected predictors of mental health disorders

Before starting the analyses, key diagnostic tests were performed. The Durbin-Watson test (F = 1.99) showed that the regression residuals are not correlated, which means that the random components are not related to each other and there is no autocorrelation in the model, and the measurement errors are independent. The correlation of the predictors was also checked by the collinearity test VIF and the tolerance coefficient. However, both tests did not show any violations of the model assumptions, which means that the predictors are not closely related to each other that the strength and direction of the relationship between them affect the incorrect estimation of relationships with the variable

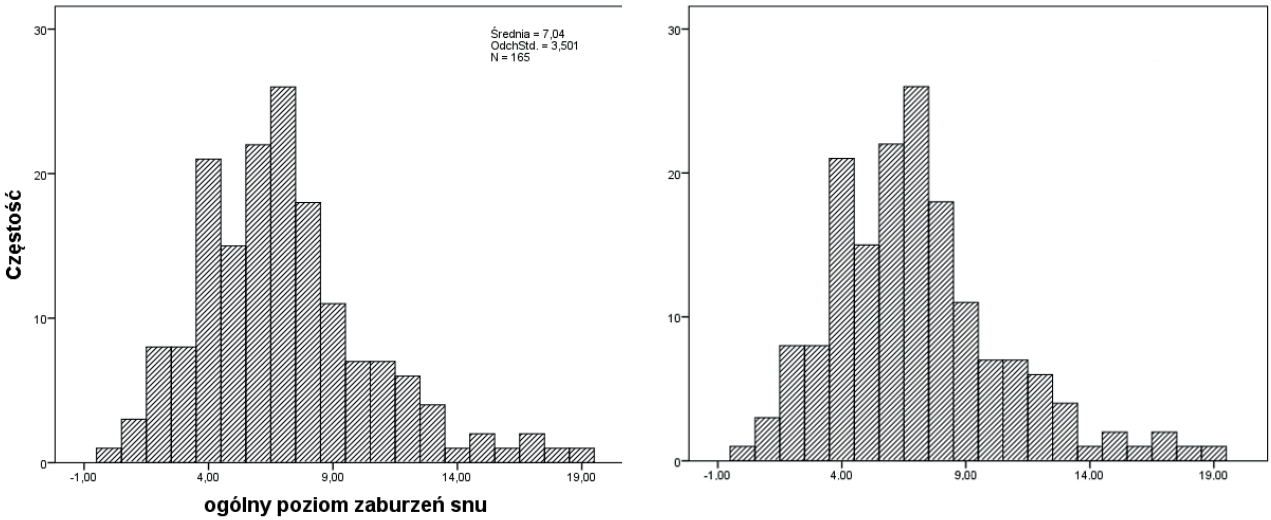

Figure 4. Summary of the Pittsburgh Sleep Quality Questionnaire (PSQI) results.

explained in the model (the basic assumption of the regression analysis was not violated) [31, 32].

Table 3. Predictors of mental health disorders

Predicator	B (SE)	β
Constant	35.28 (5.08)	---**
Quality of Lifestyle	-0.72 (0.09)	-0.57**
General Level of Sleep Disorders	0.20 (0.16)	0.09
BMI	-0.03 (0.13)	-0.02
Smoker	-2.55 (1.51)	-0.11
Alcohol Consumption	-0.87 (0.68)	-0.08
User of psychoactive substances	-0.01 (2.01)	0.00
F	14.71**	
R2	0.334	

** p <0.05; ** p <0.01*

The proposed model turned out to be well suited to the data [F (6, 164) = 14.71; p <0.001] and explained 33.4% of the variance in mental health disorders. The only statistically significant predictor turned out to be good quality of lifestyle (β = -0.57; p <0.001).

Based on the value of the directional beta coefficient, it can be concluded that together with the improvement in the quality of lifestyle, a sharp decrease in the incidence of mental disorders can be expected. The other predictors did not significantly affect general mental health.

Discussion

Many studies to date on the lifestyle of nursing students have indicated a low quality of their lifestyle. This may be due to changes related to the start of studies, including a change of the environment ("breaking away" from parental guardianship), making many new decisions and changing their lifestyle. Nursing staff is often a source of information and authority for patients and should therefore promote a healthy lifestyle. Effective promotion of a healthy lifestyle involves not only communicating recommendations and information, but also an example of one's own pro-health behaviour. In the research conducted by Walentukiewicz et al., the general indicator of the severity of health behaviours, measured by the IZZ (Health Behaviour Inventory) scale in the studied group of first-year nursing students, was low. Only 16% of the respondents showed a high level of health behaviour [33]. Ciećka and Sochocka, based on the results of their research, estimated that it would be difficult to call the lifestyle of medical university students healthy, due to the frequent use of stimulants and the low level of physical activity [5]. The results of research by Radosz et al. showed that the majority of the studied group lead an average healthy lifestyle, and 8.9% of nursing students have an unhealthy lifestyle [34]. In our research, the average lifestyle quality index, as a result of the Fantastic Life Inventory scale, achieved an above-average result, which meant the advantage of high scores in the studied group. Only 12% of the participants obtained a result below good, and only 1 person requiring improvement, which proves the high pro-health quality of life style of the majority of the surveyed students. The difference between the results of our research and previous reports on the quality of life style may result from the significant advantage of graduate students in the group we studied. We can assume that these respondents have more knowledge than their younger colleagues about the effects of an anti-health lifestyle. It may also be the result of the "fashion" for a healthy lifestyle that has emerged in recent years [35].

The WHO regularly publishes recommendations for physical activity adapted to the health needs of the population. Nursing students should keep this updated, learn about it and follow the recommendations in order to be able to effectively influence patients. Unfortunately, many studies point to a low level of physical activity in this group. Comparing the results with the WHO recommendations, it can be stated that the vast majority of nursing students does not undertake the appropriate amount of physical effort [35]. In the studies by Sadłowska et al., over half of the respondents did not undertake any physical activity [36]. A similar result was obtained by Walentukiewicz et al., because as many as 58% of the people surveyed by him did not show physical activity at all or showed too little to reach the level of a sufficient level (it was achieved by 42% of people), and no student showed a high level of physical activity [33]. This is partially consistent with the results of our research, as 57% of respondents undertake physical activity rarely or not at all, 25.5% undertake it twice a week and 17.6% 3 times a week. The results could have been significantly influenced by the lockdown related to the COVID-19 pandemic, which seriously reduced the possibility of undertaking physical activity outside the place of residence, among others through closed swimming pools or gyms. The necessity to wear masks may have also contributed to the restriction of practicing sports outdoors.

Zarzeczna-Baran and Haasa-Wojdak conducted a study with the participation of students of the medical faculty, which showed that 37% of respondents apply most of the principles of rational nutrition, and 24% do not use them at all. In the above-mentioned study, the vast majority of respondents had a normal body weight – 92% of women and 85% of men [2]. In our study, 38.8% of nursing students used a balanced diet, and 18.8% rarely used it. When it comes to excess of sugar, salt, animal fats or fast food, 17.6% of respondents often consumed them. The results concerning the body weight of the respondents showed that 62.4% did not exceed or exceeded 4 kg beyond the normal value. A large proportion of students – 20.6% exceeded 8 kg above the normal value. In their research, Misiarz et al. showed that 28.7% of nursing students were overweight and one person was underweight [37]. Similar results were obtained by Puchała-Zalewska et al. – 23% of overweight and 3% underweight respondents. These were studies conducted on students of non-medical faculties [38]. In the studies by Ciećek and Sochocka, 64% of respondents studying nursing ate breakfast, which is similar to the result obtained in our research – 72.7% of respondents answered that they eat breakfast almost always [5].

The frequency of alcohol use by nursing students in our research indicates their awareness of its harmfulness, as 66.1% of them consume it only 1 to 3 times a month, and only one person reported drinking alcohol every day. Bielska et al., in their studies with the participation of students of the medical faculty, reported that 48.19% of them drink alcohol 2-4 times a month, once per month or less often 27.30% which is in line with the results we obtained. The number of people declaring complete abstinence is significantly higher in our study (9.1%) than in Bielska (4.46%) [39]. Kurpas and Seń also obtained a higher result than Bielska, 6.9% of abstainers, while the respondents consuming alcohol once a month or less frequently were 40.4%, and 2-4 times 39.4% [40]. The results of the study by Sokołowska et al. carried out in a group of students of the Medical University of Lublin and the State University of Higher Education in Biała Podlaska differed significantly from ours, because medical university students who drink alcohol less than once a month were 6.8%, 1-2 times a month it was 19.2%. In the above study, the greatest number was those who consumed alcohol once a week and those who consumed alcohol more than once a week (37.0% each). [41]. Kurpas et al., conducting research on a group of students of the Medical University of Wrocław, obtained similar results as in Bielska., the largest number of students drank alcohol 2-4 times a month, abstainers constituted 3.79% of the group, people consuming alcohol once a month or less frequently – 23.06%, and 52.76% of the respondents drank alcohol 2-4 times a month [42].

Our research shows that a significant proportion (86.1%) of the respondents does not smoke. In the study by Kurpas and Seń, a similar percentage (79.4%) of non-smokers was obtained [40]. Another study by Kurpas et al. also showed a large number of non-smokers - 82.25% [42]. The Kołp study showed a slightly lower percentage of non-smokers – 74.3% [44]. The results of Sokołowska's research turn out to be disturbing, as they showed that only 46.6% of medical students are non-smokers. Binkowska's research on first-year students of Rzeszów universities, including medical students, showed that 67.4% of people are non-smokers (including 71.6% of medical students) [43]. Siemińska, conducting research among first-year medical students, also obtained a high score of 79% of non-smokers [45].

With regard to the use of other psychoactive substances, the results of our research indicate that 93.3% of respondents answered the question about the use of psychoactive substances in the negative. Alarming data are provided in his research by Łaszek, which he conducted in a group of students from various departments of the Medical University of Lodz. Every third respondent used them at least once in his life [46]. Similar results were presented by Sokołowska et al. among students of the Medical University of Lublin, 46.6%

admitted to using drugs [41].

In our study, sleep disorders related to delayed falling asleep occurred in 32.7% less frequently than once a week. The percentage of people not declaring the occurrence of such disorders was also high (21.2%). A study by Romero-Blanco et al. conducted in a group of nursing students in Spain showed that most people experienced problems falling asleep less than once a week and once or twice a week, which indicates that Spanish students had significantly greater problems with falling asleep [47]. These studies, like ours, were also conducted during the COVID-19 pandemic, but compared the pre-pandemic and mid-pandemic sleep patterns. Most respondents in our study answered questions about sleep disorders responding that they did not occur or occurred less than once a week, and the most common disorders, apart from delayed falling asleep, were waking up at night or in the morning and getting up to go to the toilet. These results are similar to the results of the Romero-Blanco's study, in which the most common answer to questions about sleep disorders was less than once a week. Interesting results have been presented by Maheshwari and Shaukat in studies involving Pakistani medical students. The average of the obtained scores was the factor determining the time of the respondents falling asleep. The group of people with the lowest scores, on average fell asleep most often within 16-30 minutes (29.05%), students with the average scores > 60 minutes (27.88%), and students with the highest scores ≤ 15 minutes (29.10%). Regarding sleep disorders, the results of each group also differed significantly in the case of the above-mentioned study. The group with a common average obtained the results most similar to the results of our research, because the largest number of people in this group answered questions about sleep disorders that they did not occur (29.17%) or occurred less than once a week (28.81%) [48]. Similar studies were conducted by Alotaibi et al. in a group of medical students from Saudi Arabia. The respondents were divided into subgroups according to the average grade and the academic level. The results of these studies showed that 77% of participants had poor sleep quality, with an average PSQI score of 8.13 points [49]. A slightly lower result was achieved by Romero-Blanc – 6.42 points, very similar to the result of Leduc et al. – 6.89 points on the PSQI scale, in studies involving students of various universities in Great Britain [50]. A high percentage of students who achieved a PSQI score> 4 was also obtained in the Maheshwari and Shaukata study, 64.24% [48]. Unfortunately, all the above-mentioned results show that the sleep quality of most students is quite low.

Another variable analysed by us was general mental health, the measure of which was the overall score obtained in the General Health Questionnaire GHQ-30. Our research found that 36.97% of participants had a score of 5 or less, which indicates very good overall mental health. The average result obtained by the surveyed students in the GHQ-30 questionnaire was 9.21 points, which indicates a relatively low rate of occurrence of mental disorders in the respondents.

Regression analysis showed a significant impact of high-quality lifestyle in improving overall mental health. In a study by Fukushima et al. carried out in a group of medical students in Tokyo, where the GHQ-30 questionnaire was also used as a tool, 85% of participants obtained a result of up to 7 points, assessed as low. In our study, only 50.30% of students obtained such a result [51]. Mohebbi et al. in their research, based on the GHQ-28 result, in a group of nursing students in Iran showed that 30.0% of participants did not experience any symptoms of mental disorders, which is a result similar to our study [52]. Research using the GHQ-12 version was also conducted in Turkey in a group of nursing students by Göl and Erkin. They obtained similar results to ours – 28.5% of students without any symptoms of mental disorders. These authors emphasize in their study that students reporting less sleep and / or with COVID-19 symptoms obtained significantly higher results [53]. Wu et al. in the results of a study conducted in a group of nursing students in Taiwan, also using GHQ-28, indicated that 35.5% of participants without symptoms of mental disorders were similar to the results of our research [54]. Ghafari et al. in their studies, which they conducted in Iran, also with the participation of nursing students, using GHQ-28, showed that 56% of the respondents did not show any symptoms of mental disorders [55]. A similar result was obtained by Cybulska et al. in a study conducted in a group of nurses in Poland with the use of GHQ-30 – 54% of respondents had no symptoms of mental disorders. The higher percentage of people with a better overall mental health condition among those already working as nurses may be caused by greater mental maturity and developed coping skills, as well as general life stabilization, including improved financial situation [27].

Conclusions

1. Students participating in the study showed a good quality of their lifestyle.
2. The general mental health of the surveyed students was good.
3. High-quality lifestyle correlated with a lower risk of mental health disorders.
4. Physical activity of the majority of nursing students – 57% (N = 94) was at a low level.
5. Nursing students followed the principles of rational nutrition – 81% (N = 134), consumed a balanced diet, and their body weight was not

significantly above the norm.

6. As many as 92% (N = 152) of the surveyed students did not abuse alcohol, only 0.6% (N = 1) admitted to consuming alcohol every day.
7. When it comes to 86% (N = 142) of the respondents, they did not smoke.
8. In the study group, 93% (N = 154) of people had never used other psychoactive substances.
9. Sleep disturbances concerned the vast majority of the studied group, and one of the most common ones was problems with falling asleep – 78.8% (N = 130), and waking up during the night or prematurely in the morning – 70.3% (N = 116).

Limitations

The limitations of the study were: 1) a relatively small group of respondents, 2) the method of conducting research in the form of an on-line questionnaire, 3) specific time of collecting research material during the COVID-19 pandemic. The accompanying limitations could have had an impact on the quality of life of the respondents, as well as on their general mental health.

Conflict of interest

The authors have declared no conflict of interest.

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