

## ACADEMIC YOUTH'S HEALTH BEHAVIOR

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**Abstract.** *Introduction:* A very important role in the protection of human health is their life style, their habits and patterns of conduct. Early adulthood is the best period to achieve long-term benefits from a selection of healthy living. However, the results of studies on health-related behavior of youth in Poland and in the world are not satisfactory. *The purpose of the study:* The purpose of the research was to assess the health behaviors of students of higher education in Bydgoszcz. *Material and methods:* The study involved 272 students (124 women and 148 men) Bydgoszcz higher education students in the following fields of study: physiotherapy, nutrition, logistics and national security. The Inventory of Health-Related Behavior by Zygfryd Juczyński has been used in the research. The statistical analysis was performed using the package PQ Stat 1.6.2. *Results:* Throughout the treatment group an average level of health-related behavior has been shown. The results of the different categories of health-related behavior were lower than the results of the standardization groups. A higher level of health behavior has been shown in a group of medical students compared to non-medical students. The results for women were higher than men's results. *Conclusions:* The results of personal research and the research findings of other authors demonstrate that there is a need for implementation of programs of health promotion and health education in all fields of study. **Keywords:** health behavior, health, lifestyle, health promotion, academic youth.

### Introduction

According to the World Health Organization (WHO) "Health is a state of complete well-being physical, mental and social welfare, and an individual or a group must be able to identify and pursue their aspirations, needs, as well as the environment changes, or to deal with it. That's why health is seen as a vital resource, and not the purpose of life. Health is a positive concept, including personal and social resources and physical capacity, and not just the absence of disease or disability "[1]. A very important role in human health protection is played by lifestyle, habits and patterns of conduct. They take the form of healthy factors that improve health status and also the anti-health factors affecting health [2].

The age of the young men and early adulthood is the best period for the achievement of the long-term benefits of choosing a healthy lifestyle. However, the results of studies on health-related behavior of youth in Poland and in the world are not satisfactory. Particularly troublesome is the phenomenon of addictions' visible growth and their threats in the group of children and adolescents [3-15]. A study conducted by the World Health Organization has shown that 30% of young people in the European Union regularly smoke cigarettes [16]. In 2015, in the framework of international project "the European School Survey Project on Alcohol and Other Drugs (ESPAD) an auditorium survey was carried out in Poland on a representative sample of third grade classes in grammar school (age 15-16) and second grade class upper secondary schools (age 17-18). Studies have shown that alcoholic beverages are the most common psychoactive substance among young people - at least once during the whole of their life 83.8% of students of the younger group drank alcohol and 95.8% of students from the older group [17]. Another problem is obesity among children and adolescents. The WHO report shows that in the last 20 years in our country the number of overweight children have increased three times [18]. The reason of obesity can be seen in low physical activity and poor eating habits. With age, the health consequences of obesity are becoming more and more serious [19-28]. An important determinant of health is also the ability to cope with stress. Studies show that children and young people as often as adults are exposed to stress. Chronic stress can lead to depression, which is now one of the most commonly diagnosed disorder in adolescents [29-31].

University for most students is the last stage before the beginning adult life and exactly the last years devoted on the tutorial process, when the pro - health attitude is also learnt. On the other hand, the research shows that students keep an anti-health lifestyle [32]. It is important therefore to monitor the risks, minimize risk factors and realize preventive activities.

### *The purpose of the study*

The purpose of the research was to evaluate health behavior of higher education students in Bydgoszcz.

### **Material and methods**

The study involved 272 students (124 women and 148 men) of Bydgoszcz universities, ranging in age from 19 to 31 years old (average age 24.8 years old). Students were divided into groups:

- Group I - students of physiotherapy (n = 108);
- Group II - students of dietetics (n = 50);
- Group III - students of logistics (n=62)
- Group IV - students of national security (n = 52);

In the studies the Inventory of Health-Related Behavior (IHB) by Zygfryd Juczyński was used [33]. It is composed of 24 statements that describe any kind of behavior related to health. The numerical values are counted in order to obtain the overall rate of health behaviors. These values are in the range of 24 to 120 points. The higher the result, the greater the severity of health behavior is. The results of the raw turns are changed into the standardized scores:

- 1-4 - low;
- 5-6 - average results;
- 7-10 - high scores.

Apart from this interpretation we also calculated separately the severity of four categories of health behavior:

- proper nutrition habits (PNH);
- prophylaxis behavior (PB),
- positive psychological attitude (PPA)
- health practices (HP);

Statistical analysis was conducted using the package PQ Stat 1.6.2. Investigated variables are presented in the form of descriptive statistics (mean arithmetic, minimum, maximum, standard deviation). The distribution of variables was checked with Shapiro-Wolf test. The comparison of the results between two groups was made using Student's t test for independent groups, between the four groups of Anova test at significance level  $\alpha = 0.05$ . The results are presented in the form of graphs.

### **Results**

Table 1 shows descriptive statistics for the results of questionnaire IHB throughout the test group

**Table 1.** Descriptive statistics for the results of questionnaire IHB throughout the test group

Variable	Descriptive statistics				
	n	$\bar{x}$	SD	Min	Max
IHB - sten	272	6.13	2.03	1.00	1.00
IHB - proper nutrition habits	272	3.17	0.50	1.67	4.83
IHB- prophylactic behavior	272	3.16	0.58	1.33	4.50
IHB- positive psychological attitude	272	3.17	0.58	1.67	5.00
IHB - health practices	272	2.99	0.43	1.50	4.50

n – number of observations;  $\bar{x}$  - mean arithmetic; Min - minimum; Max-maximum; SD – standard deviation

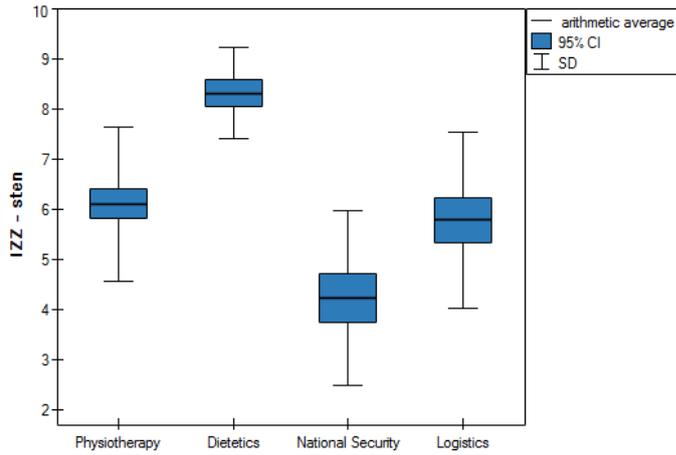
In the next stage, a comparison of questionnaire IHB results between the students of different faculties has been made.

**Table 2.** Statistical analysis of questionnaire IHB results between students of particular faculties

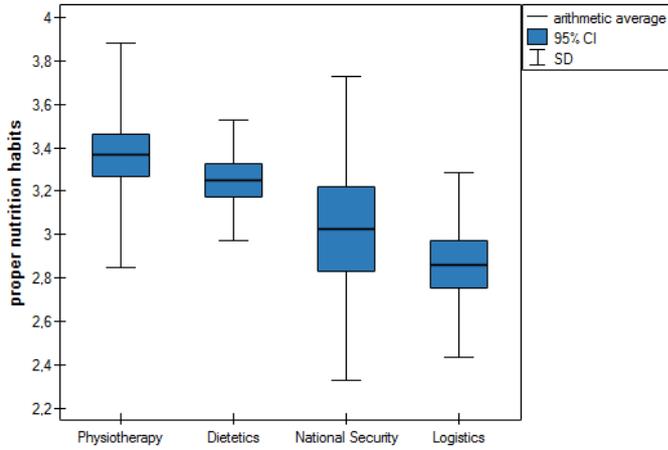
Variable		Descriptive statistics					Anova test	
		n	$\bar{x}$	SD	Min	Max	F statistic	P
IHB- sten	Physiotherapy	108	6.11	1.53	3.0 0	10.00	60.860029	< 0.000001
	Dietitics	50	8.32	0.91	6.0 0	1000		
	National security	52	4.23	1.74	1.0 0	8.00		
	Logistics	62	5.79	1.75	3.0 0	1.,00		
IHB - PNH	Physiotherapy	108	3.36	0.51	2.3 3	4.83	14.882557	< 0.000001
	Dietitics	50	3.25	0.27	2.3 3	3.66		
	National security	52	3.02	0.69	1.6 7	4.50		
	Logistics	62	2.86	0.42	2.0 0	4.00		
IHB - PB	Physiotherapy	108	3.48	0.61	2.1 7	4.50	25. 10459	< 0.000001
	Dietitics	50	3.18	0.31	2.3 3	3.83		
	National security	52	2.77	0.68	1.3 3	4.50		
	Logistics	62	2.91	0.49	2.0 0	4.33		
IHB - PPA	Physiotherapy	108	3.47	0.54	2.5 0	4.50	16.659682	< 0.000001
	Dietitics	50	3.04	0.44	2.1 6	3.83		
	National security	52	3.16	0.69	1.6 7	5.00		
	Logistics	62	2.87	0.53	1.8 3	4.50		
IHB -HP	Physiotherapy	108	3.04	0.41	2.1 6	4.50	2.574731	0.044332
	Dietitics	50	3.04	0.31	2.3 3	4.00		
	National security	52	2.96	0.65	1.5 0	4.50		
	Logistics	62	2.86	0.38	1.8 3	4.00		

n – number of observations;  $\bar{x}$  - mean arithmetic; Min - minimum; Max-maximum; SD – standard deviation; p – level of probability

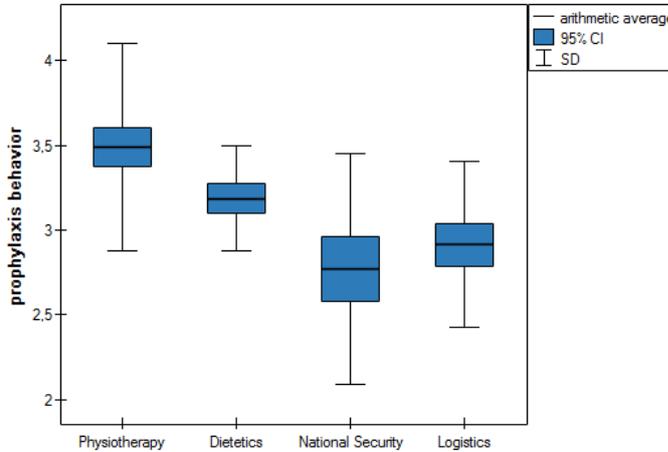
Comparing the Anova test statistic-based p-value (F) with the level of significance of  $\alpha = 0.05$ , it has been found that there is a statistically important difference in the results of the questionnaire IHB between the treatment groups. A graphical interpretation of these results show the Figure 1 - Figure 5.



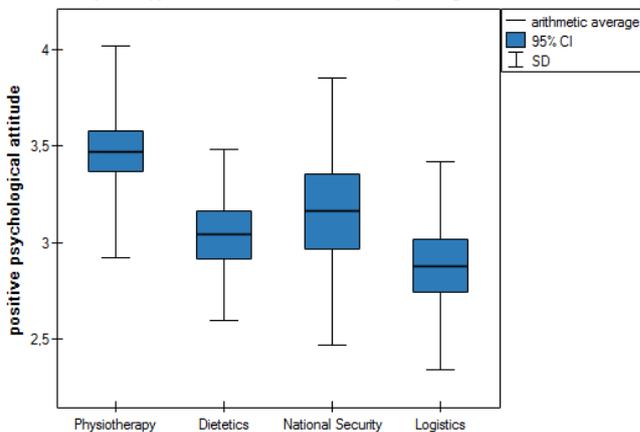
**Figure 1.** The box plot for comparison of the results of the IHB - sten between the students of different faculties



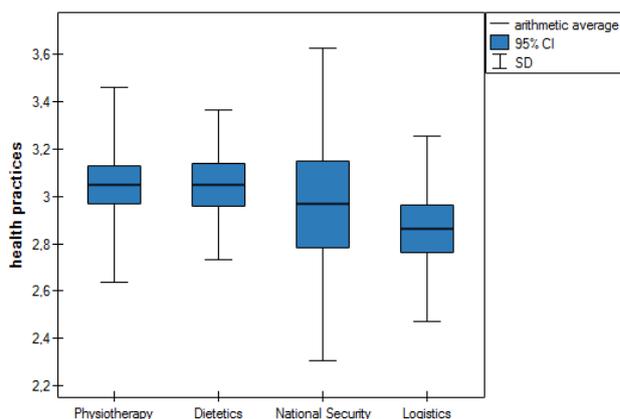
**Figure 2.** Box plot comparison of IHB results - proper nutrition habits between students of different faculties



**Figure 3.** Box plot for comparison of IHB results - prophylaxis behavior between students of different faculties



**Figure 4.** Box plot for comparison of IHB results - positive psychological attitude between students of different faculties



**Figure 5.** Box plot for comparison of IHB results - health practices between students of different faculties

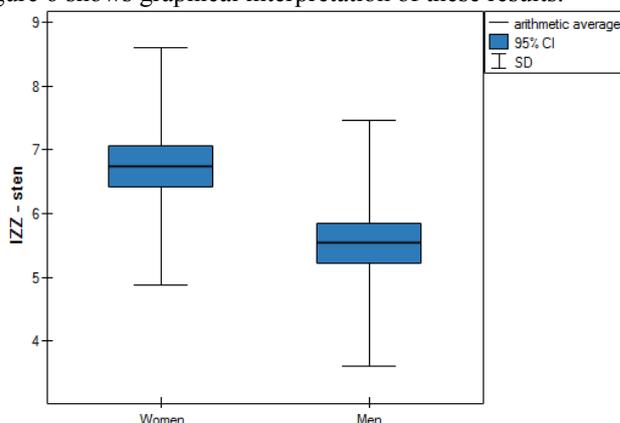
In the next stage of the research a comparison of the results obtained in questionnaire IHB between women and men has been made. The results are presented in table 3.

**Table 3.** Results

Variable		Descriptive statistics					t-Student	
		n	$\bar{x}$	SD	Min	Max	t statistic	P
IHB - sten	WOMEN	124	6.74	1.86	3	10	5.228769	< 0.000001
	MEN	148	5.53	1.92	1	10		

n – number of observations;  $\bar{x}$  - mean arithmetic; Min - minimum; Max-maximum; SD – standard deviation; p – level of probability

Figure 6 shows graphical interpretation of these results.



**Figure 6.** Box plot for the comparison of IHB results - questionnaire between women and men

### Discussion

The research has shown that the level of health-related behavior in the test group of students is at the upper limit of the average results (6.13 sten). Analysis of health-related behavior's different categories (see Tab. I) showed very close results, furthermore they are lower than the results of the standardization groups, which can be found in the psychology textbook *The measure tool in psychology and health promotion*. What seems interesting is the comparison of the results of health behavior between the students of different faculties (table II). The highest level of health behavior has been shown in students of dietetics (8.32 sten) and at the same time, this is the result indicating a high level of health-related behavior. Physiotherapy students and logistics have obtained results that are in the upper limit of the average results - 6.11 respectively and 5.79 sten. On the other hand, the results of national security students were slightly lower (4.23 sten). When analyzing the different categories of health-related behavior, it should be noted that in almost all categories (except "positive psychological attitude"), medical students (physiotherapy, nutrition) have obtained higher scores, compared with the results of the non-medical students (logistics, national security). Similar results can be observed in studies of other authors. RAM and Stock [34] have assessed the health behaviors among the students of computer science and management trainees higher school in the fields of public health and information technology. The studies used the Inventory of Health Related Behaviour by Juczyński. The results have shown significantly higher levels of health behaviors of students of

public health in relation to appropriate health behavior computer science students. Smoker [35] evaluated the health behavior of students of the four fields of study: education, physiotherapy, physical education and tourism and recreation. The highest level of health behavior has been shown in students of physiotherapy. Misiarz et al. [36] assessed the nutrition behavior of students of medical and non-medical of Świętokrzyski region. The research tool was the original questionnaire surveys. Better results have been obtained in a group of medical students. Also Fedotov and Dentys [37] showed a favorable trend for the nutrition ways of students related to the protection of health. This begs the question, whether the study faculty actually determines the level of health-related behavior, or maybe, vice versa – young people with more knowledge of these behaviors choose appropriate courses. It would be advisable to carry out diachronic tests, involving the examination of first year students and repeating these tests in the final year of study.

While analyzing the results of the general level of health-related behavior based on gender (table III), we have found a higher level of health-related behavior in women. Numerous studies support the idea that women more often and more eagerly pay attention to health [38-42]. Korprowicz [43] analyzed the Polish health behavior of women and men on the basis of the data from the literature. Among negative behaviors for health, differentiating both sexes, we can enlist more frequent smoking of cigarettes, alcohol and drug use by men. While women have better diets and are more eagerly use outpatient specialist care, rehabilitation services and dental services. Women try more than men to prevent disease, which causes that the above 65-year-old women are less likely to get sick.

#### Conclusions

The results of personal research and research findings of other authors demonstrate that there is a need for implementation of programs of health promotion and health education in all fields of study.

#### Conflict of interests

The authors declare that there is no conflict of interests.

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