

ORIGINAL ARTICLE

SELF-ESTEEM OF THE EATING BEHAVIOR BY THE STUDENT PHARMACEUTICAL YOUTH FROM THE VIEW OF THE EXCESS BODY WEIGHT AND OBESITY

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ABSTRACT

The aim: The purpose of the research is to study the understanding of student pharmaceutical youth the eating behavior in the context of the EBW and obesity.

Materials and methods: The material of the study was anonymous questionnaire survey the students of the pharmaceutical faculties from Ukraine.

Results: The results of the questionnaire were analyzed using methods of statistics, comparison and generalization. Almost 9 out of 10 respondents from both universities consider the reason of obesity a sedentary lifestyle and poor nutrition, and the most effective way to treat it is physical activity, though only 36.3% and 28.4% of students of the corresponding samples have it constantly.

Conclusions: The questionnaire showed a lack of eating behavior, of their knowledge of the basic issues of the EBW and obesity, as well as differences in personal perception and the desire for the practical implementation of queries regarding the weight of their body that may further affect the professional ability of young specialists in influencing the processes of formation and improving the quality of their lives and patients' lives.

KEY WORDS: obesity, students, excess body weight, eating behavior, pharmacy

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INTRODUCTION

Excess body weight (EBW) in young age negatively affects the quality of life, as it causes psychological complications, susceptibility to cardiovascular disease, insulin-dependent diabetes, musculoskeletal problems, digestive and respiratory systems and in adulthood high probability of obesity, premature death and disability [1]. Students are a significant social group of young people. It is a specific, united by certain age limits and intense mental work – a process of professional education, lifestyle and mentality group [2], which defined the direction of our study.

The proportion of people with EBW among university students, especially among girls, is high (15-20%), which is facilitated by the peculiarities of student lifestyles: unbalanced nutrition, low physical activity, high academic load, frequent stressful situations and bad habits [3,4]. With the help of a questionnaire of 461 medical students, changes in the main mode elements of nutrition, which can lead to violations in the functioning of the functional systems of the body, polynutrient deficiencies and alimentary-dependent diseases were found [5]. A survey of 334 undergraduate students studying in the field of Medicine showed that among them there are common elements of irrational nutrition that undoubtedly affect their health and quality

of life as a result of the restriction of the nutrients that are necessary for the development and working capacity [6].

Despite a number of publications, the issue of eating behavior for future masters of pharmacy was almost not analyzed, which could further reflect the professional ability of young specialists to develop healthy lifestyle skills in both themselves and patients.

THE AIM

Comparative study of the regional features of pharmacy students' eating behaviour regarding overweight and obesity.

MATERIALS AND METHODS

The material of the study was anonymous survey of 190 and 263 undergraduate students of the pharmaceutical faculties, respectively, of Danylo Halytsky Lviv National Medical University (LNMU) and Odesa National Medical University (ONMU) from Ukraine. The choice of the studied society is due to the similarity of cultural, tourist, industrial, trade and border regions, as well as differences in the mentality of the population. In total 453 students were interviewed. Among interviewed, women predomi-

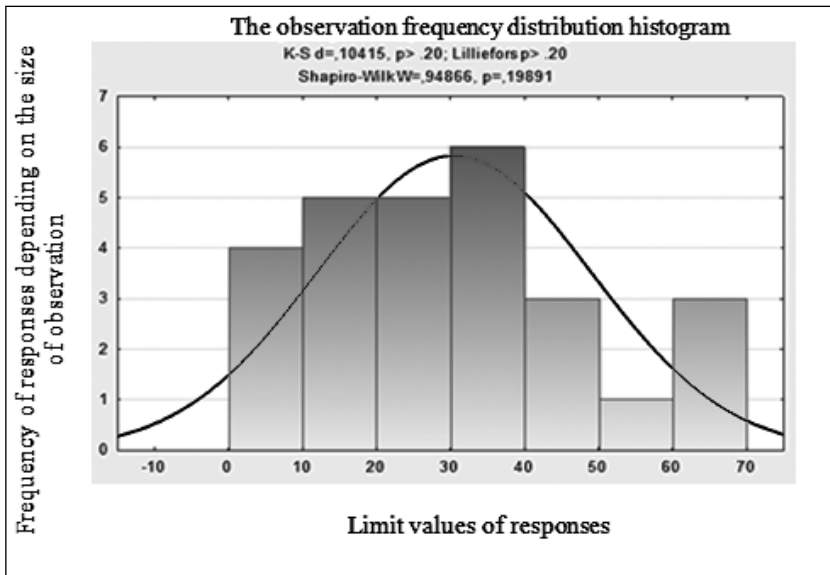


Fig 1. Empirical distribution of parameter values for the city of Lviv

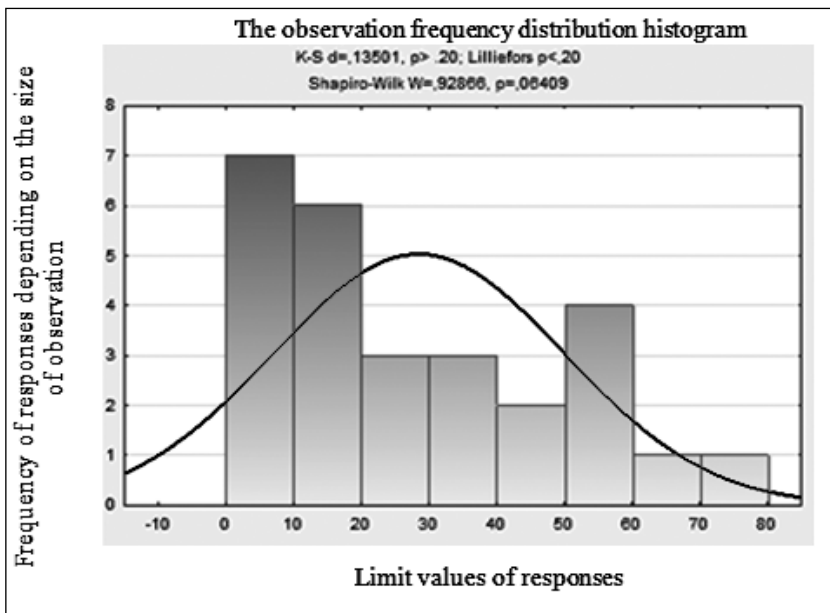


Fig 2. Empirical distribution of parameter values for the city of Odesa

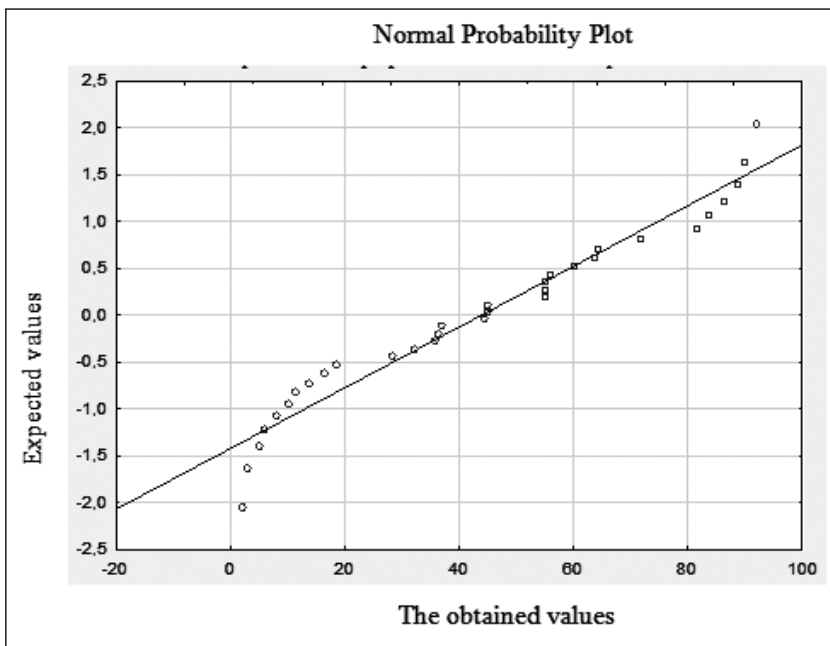


Fig 3. Graph of normality test of the empirical and theoretical distribution of parameters (Lviv)

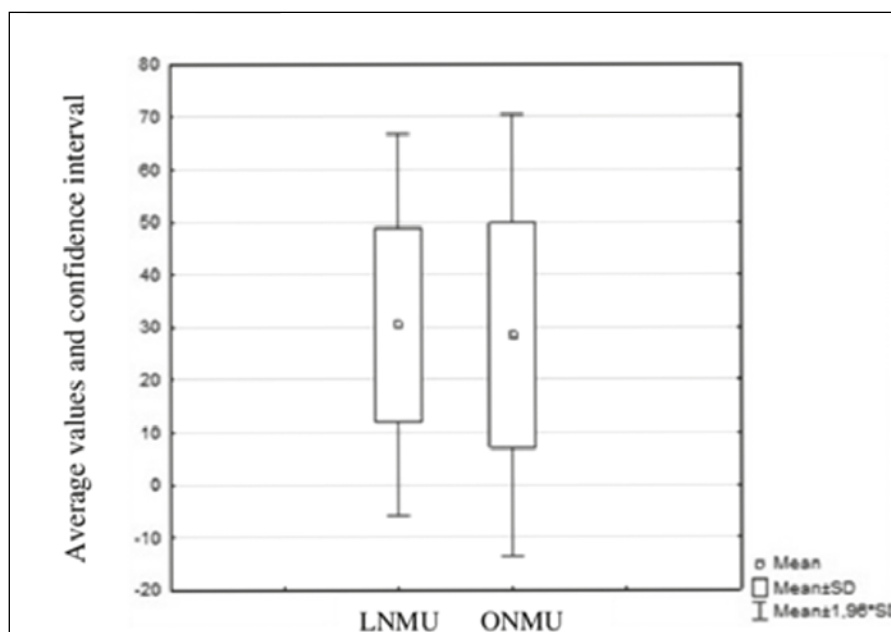


Fig 4. Average values and limits of 95% of confidence interval and standard error.

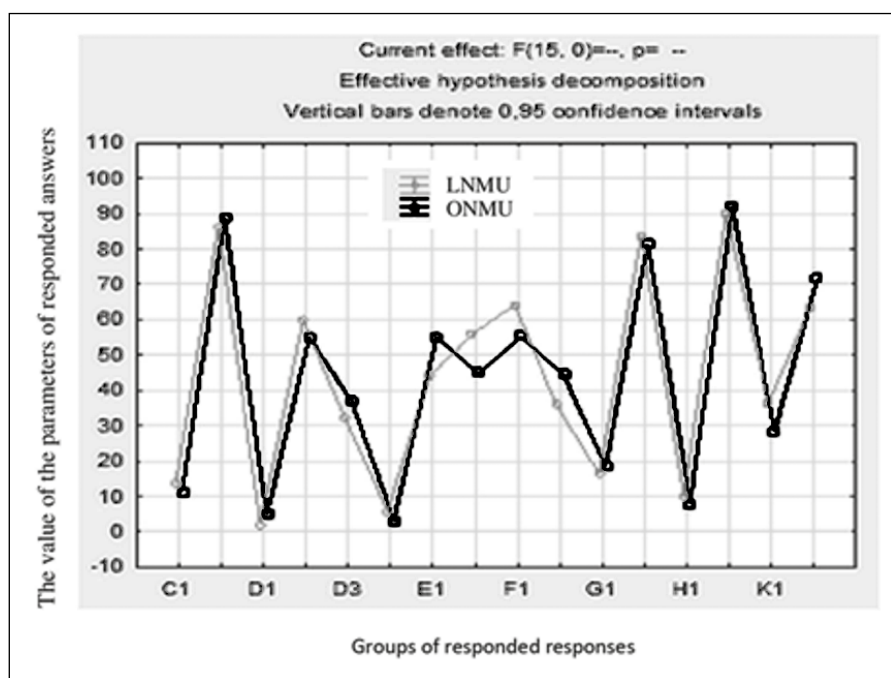


Fig 5. Distribution of the values of the groups of responded answers.

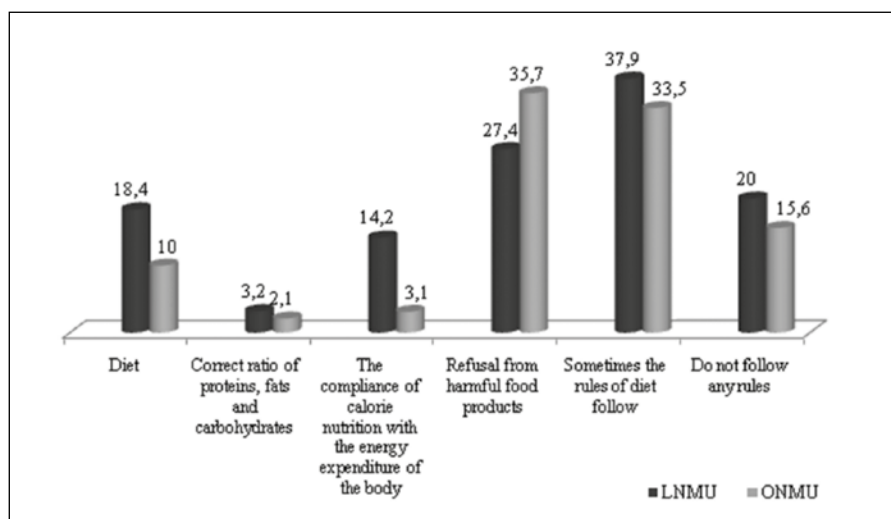


Fig 6. Respondents' compliance of food regulations, %.

Table 1. The attitude of students to their eating

No.	Question	Options for answers	Students, %	
			LNMU	ONMU
1	Can you call your eating healthy?	partly	58,4	58,2
		no	22,6	30,5
		yes	13,7	11,3
		difficult to answer	5,3	0
2	How often do you take food?	twice or thrice	60,0	55,2
		three – four times	32,1	37,0
		five and more	5,8	3,0
		other	1,6	2,4
		once	0,5	2,4
3	Do you eat 3 hours before sleep?	yes	45,8	63,2
		sometimes	29,5	20,0
4	How often do you eat sweet?	No	24,7	18,0
		every day	64,2	55,2
		rarely	34,7	43,4
5	Do you often overeat?	I do not eat it	1,1	1,4
		sometimes	48,9	53,1
		no	34,7	28,4
6	How often do you eat fruits and vegetables?	yes	16,4	18,5
		once a day	31,1	45,3
		several times a day	35,8	20,2
		several times a week	28,9	18,4
		rarely	2,6	5,0

nated (84.7% and 89.8% according to the surveyed student population). The average age of respondents from both universities was 21 years.

The toolkit for the study was the questionnaire. The developed questionnaire included 26 questions. It is worth noting that on some questions respondents had the opportunity to give a couple of answers. There is no conflict of interest. Results of the questionnaire were analyzed using methods of statistics, comparison and generalization.

To obtain a reliable result at the initial stage of statistical analysis, we applied standard sampling techniques. That made it possible to use the data obtained statistically for the diagnostics and further generalizations.

The initial analysis of empirical data (Fig. 1, 2) allowed us to put forward the null hypothesis about the insignificant difference between the data in the samples analyzed. To this end, for testing the hypothesis, we proposed the Pearson's test to assess a significant difference between these two samples.

The application of this criterion is known to require checking samples for normality. The data (Fig. 3) show that there is practically no difference between the empirical data and the Gaussian distribution in the sample.

As you can see, the data presented in Fig. 2 are more skewed than those in Fig. 1. However, in general, there is also no reason here for rejecting the null hypothesis, i.e.,

that about a significant difference from normality for the second of the studied samples.

Having obtained a positive result of the normality testing, we applied the Student's t-test to check and clarify the degrees of difference between the samples analyzed.

Since the significance level of the t-test turned out to be much greater than the critical one, in our case $p > 0.7$, the null hypothesis about the absence of significant differences between these two samples was accepted. The distribution graph of the mean values of the two samples (Fig. 4) also indicates that.

The bounds of 95% confidence interval are also indicated (for Lviv – on the left, for Odesa – on the right), as well as the bounds of standard errors.

For additional confirmation of the uncertainty of sample discrepancies, groups of responses for questionnaire No. 3 (Can you call your diet healthy (rational?)), No. 4 (How often do you eat?), No. 7 (How often do you over eat?), No. 8 (Do you follow a diet?) and No. 9 (Are you exercising?) were modeled.

As can be seen from the data in Fig. 5, the values obtained during the survey almost coincided, so the statistical analysis of the submitted samples and the visual observation of the differences between them did not reveal a significant difference in the estimates obtained between two non-dependent groups.

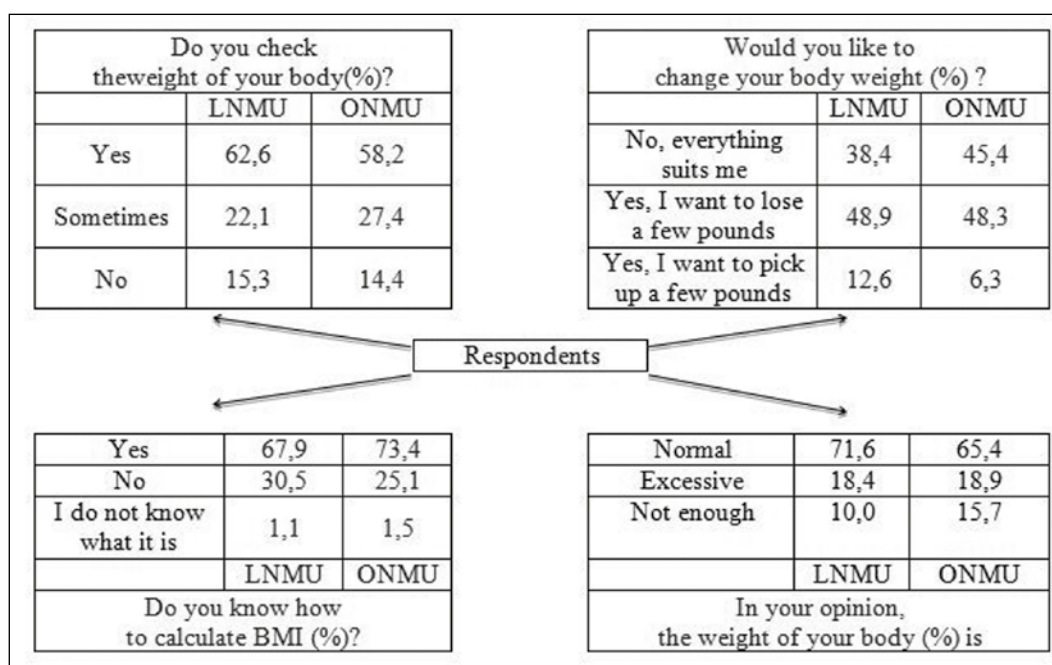


Fig 7. Level of student understanding of issues related to the body weight.

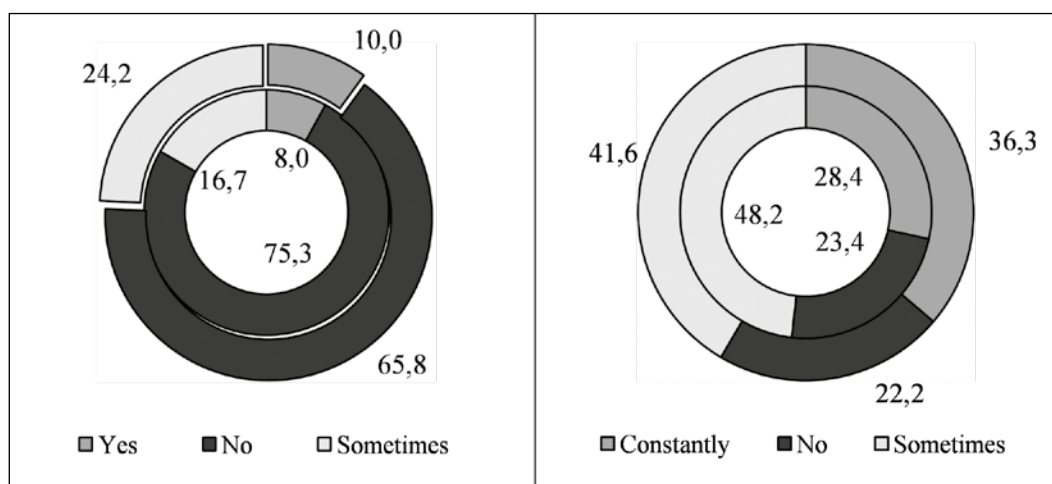


Fig 8. An attitude of students to diet (a) and physical exercise (b) (LNMU – external circle, ONMU – internal circle), %.

RESULTS

As can be seen from the data in Table 1, only 13.7% students of LNMU and 11.4% students of ONMU consider their eating to be healthy, more than 1/2 of them are partly healthy eaters and 22.6% of Lviv and 30.5% of Odesa students can not call their eating healthy.

55.2% of ONMU students take meals twice or thrice a day, and 60% of students from LNMU. Most suitable for an adult healthy person 3-4 meals per day [7] is common for about 1/3 of respondents.

It is worth noting that the consumption of food 3 hours before sleep, which is necessary for the evenly loading of the digestive system, is always common only for 45.8% of Lviv residents and 63.2% of Odesa residents.

64.2% of students from Lviv and 55.2% from Odesa eat sweet every day, rarely – 34.7% and 43.4% respectively.

Less than 16.4% of Lviv residents and 18.35% of Odesa residents permanently overeat, occasionally – 48.9% and 53.2% respectively, and never – 34.7% and 43.4% of the representatives of the respective samples.

Fresh or frozen fruits and vegetables, as sources of nutrients, must necessarily be present in the daily ration. According to the survey, 31.1% of students from LNMU and 45.2% of those from ONMU eat fruits and vegetables once a day, 35.8% and 20.2%, respectively, several times a day. 28.9% of Lviv residents and 18.3% of Odesa residents have vegetables and fruits in their diet several times a week.

Next it was established (Fig. 6) that each day the diet follow only every tenth respondent from Odesa and 18.4% from Lviv, 3.1% of students from ONMU and 14.2% from LNMU follow the correct ratio (within the limits of a statistical error) of proteins, fats and carbohydrates, the compliance of calorie nutrition with the energy expenditure of the body, refused from harmful food products 35.7% of Odesa and 27.4% of Lviv residents. It is worth noting that sometimes the rules of their diet follow 2/5 of Lviv and 1/3 of Odesa residents and do not follow any rules 15.6% in Odesa and every fifth in Lviv.

Excessive or insufficient body weight is the consequence of one or another eating behavior. Therefore, it's important

Table 2. Classification of respondents according to the BMI

BMI kg / m ²	Rating [8]	Students,%		BMI kg / m ²	Rating [8]	Students,%	
		LNMU	ONMU			LNMU	ONMU
	Chronic energy deficiency			25-30	EBW	6,8	15,7
<16	III degree	0,5	0,6		Obesity		
16-17,5	II degree	7,4	4,2	30-35	I degree	-	-
17,5-18,5	I degree	15,3	6,0	35-45	II degree	0,5	1,2
18,5-25	Normal range	66,3	71,7	>40	III degree	-	-

Table 3. Awareness of the respondents regarding the main issues of obesity

No.	Question	Options for answers	Students, %	
			LNMU	ONMU
1	Do you think obesity is a disease?	yes	94,2	98,0
		no	2,6	2,0
		difficult to answer	3,2	0
2	Are you aware that obesity can cause a number of diseases?	yes	87,4	95,5
		no	12,6	4,5

for students to track it. As can be seen from the data in Fig. 4, 62.6% of Lviv residents and 58.2% of Odesa residents check their weight regularly. Sometimes weighing is carried out by 22.1% of students from LNMU and 27.4% from ONMU, never do this more than 1/10 of the respondents from both samples.

Two-thirds of LNMU respondents and three-fourths of ONMU claim that they can count the body mass index (BMI). However, less than a third of Lviv residents and one quarter of Odesa residents cannot count the BMI, the rest (no more than 1.5%) – does not know what it is.

For the above-mentioned students, we calculated their BMI as the result of the division of the body weight (in kg) on a square of their growth (in square meters). It was found that the average BMI of those surveyed from LNMU is 20 kg/square meter, and from ONMU – 22 kg/square meter that is normal.

However, as shown in Table 2, the normal range of the BMI [8] is typical for 66.3% of Lviv residents and 71.7% of Odesa residents. At the same time, 38.4% of students from Lviv and 45.4% from Odesa are satisfied with the weight of their body, although 71.6% of Lviv residents and 65.4% of Odesa residents consider the weight of their body as normal (Fig. 7). 23.2% of students from LNMU and 10.8% from ONMU according to the BMI have a chronic lack of energy of various degrees. However, insufficient weight of their body considers half as much of Lviv residents (10.0%) and one and a half more Odesa residents (15.7%), although only 12.6% and 6.3% of respondents of the respective universities want to gain weight.

At the same time, 6.8% of students from LNMU and 15.7% of students from ONMU has EBW, although more than 18% of both samples consider it so. Obesity of varying degrees according to the BMI is common for a small proportion of respondents. At the same time almost half

of students from both universities want to lose weight.

It is worth noting that the absolute majority of students of both samples consider obesity as a disease (Table 3).

For 87.4% of Lviv residents and 95.5% of Odesa residents it is known that obesity can be the cause of a number of diseases. In the opinion of almost 94.2% of Lviv and 98.0% of Odesa students the cause of obesity is a sedentary lifestyle and inappropriate nutrition. 66.3% and 50.6% of Odesa students consider stress causes the obesity, but 48.9% and 45.7% groups of responses-heredity. Lack of sleep is the cause of obesity for 38.9% of students from LNMU and 29.9% of students from ONMU.

91.6% of Lviv and 87.2% of Odesa students consider physical activity is the most effective method to treat obesity, 68.9% and 70.1% respectively prefer diet. Characteristically, the medical and surgical treatment and use of dietary supplements was noted by a rather small percentage of respondents.

However, as shown in Fig.8, 65.8% of students from LNMU and 75.3% from ONMU have never followed a diet. But 16.7% of respondents from Odesa and 24.2% from Lviv sometimes follow diet. And only 10.0 and 8.0 respondents of the respective samples follow the diet. At the same time 36.3% of Lviv residents and 28.4% of Odesa residents always do physical exercises, sometimes do 41.6% of students from LNMU and 48.2% of those from ONMU. It is sad that 41.6% and 48.2% of representatives don't do physical activity.

DISCUSSION

Since the eating behaviour of future pharmacists has not been studied, the results of the research, in our opinion, are of importance. They showed common and differences in eating behaviour of senior pharmacy students of LNMU and ONMedU.

Common to both universities:

- 1/10 of students consider their diet healthy, half of the respondents partially follow a healthy diet;
- only about a third of respondents think 3-4 meals a day to be the most appropriate for a healthy adult;
- more than 1/10 of students do not monitor their body weight, almost half of them want to lose weight;
- 9 of 10 respondents realize obesity as a factor for the development of many diseases. They are aware both that obesity is caused by a sedentary lifestyle and unhealthy diet and that the most effective method of treating obesity is physical activities. More than 2/3 of students in this regard prefer diets.

The differences relate to:

- consumption of food 3 hours before bedtime, which is necessary for a uniform load of the digestive system, the frequency of consumption of sweets, consumption of fruits and vegetables as sources of nutrients;
- adherence to a diet;
- ability to calculate BMI;
- normal range of BMI and perception of body weight;
- identification of stress as a cause of obesity;
- adherence to diet and exercise in obesity.

CONCLUSIONS

The survey of undergraduate pharmacy students of LNMU and ONMedU showed an insufficient level of eating behaviour and inadequate awareness of the main issues of overweight and obesity. Moreover, the study revealed differences in personal perception and wish to satisfy the demands related to body weight. Those can affect the professional ability of young pharmacists to influence the formation and improvement of the quality of their life as well as the lives of customers/patients.

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Conflict of interest:

The Authors declare no conflict of interest.

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