

Assessment of Selected Dietary Habits in Students of Rzeszow University

Paulina Duma, Magdalena Marchel, Elżbieta Głodek, Marian Gil

Abstract— The aim of this study was designed to assess dietary habits of students of Rzeszow University. The study covered a group of students of the faculty of Food Technology and Human Nutrition at the University of Rzeszow. The group of respondents consisted of 318 individuals (266 women and 52 men). All participants completed an original questionnaire. Tables of numerical data were calculated using statistical software STATISTICA 12 PL. Significance of the statistical differences was assessed with the use of Mann-Whitney U test. The students did not differ significantly in terms of basic anthropometric parameters; the range of BMI in the majority of women and men was within normal values. Obesity was observed only in 1.9% male and 1.1% female subjects but body mass deficiency was identified in 15.1% of the females. The analysis showed a prevalence of the three-meals a day model among both females and males. More than a half of the subjects reported snacking between meals a few times a day, or at least once a day (61.6% males, and 64.2% females). The study showed that a significant majority of men were systematically involved in physical activity (every day or 3-5 times a week) – 44.2%. In the case of women this level of physical activity was reported by only 18.8% respondents. Despite their knowledge of the relevant subject matter, students do not follow proper dietary principles in their lives. The results indicate the need for promoting a healthy lifestyle among students.

Index Terms— students, nutrition, dietary habits, physical activity

1 INTRODUCTION

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DIETARY habits are recognized among the most important factors influencing human health [1]. They are defined as a process which is conditioned by genetic factors, hormone action, development of sense organs, as well as the influence of environmental and cultural factors and the knowledge of eating behaviours [2].

Behaviours which promote health include rational eating, suitable physical activity, maintaining safety, etc. [3], [4]. Moreover, rational eating is a primary condition for correct development, as well as physical and mental activity of every person [5].

University students are of special interest to nutritionists, because they constitute a social group which is particularly at risk of irregularities in terms of eating habits. This is not only due to their school timetables, frequently lacking regularity, but also because of financial and organizational problems often faced while preparing meals. On the one hand the period of studies is the time of huge physical and mental activity, which should be supported by suitably designed diet. On the other hand, the irregular lifestyle and a tendency for innovations may contribute to strengthening bad eating habits [6].

The aim of the study was to examine dietary habits of students of Rzeszow University.

2 MATERIALS AND METHODS

A group of individuals studying Food Technology and Nutrition at Rzeszow University were included in the research. 318 subjects, including 266 women (i.e. 83.64%) and 52 men (16.35%) took part in an anonymous survey, which was carried out from March to May 2011. The tool applied for assessing students' opinions related to their dietary habits was a questionnaire specially designed by the authors, and consisting of standardized answers to choose from. The first part of the questionnaire related to primary anthropometric measurements such as body mass and height, which later were used to assess BMI, i.e. the Body Mass Index. Whereas the second part comprised questions concerning such aspects as: preferred eating habits, number and regularity of meals and snacking during one day, typical place for having lunch as well as leading active lifestyle. Tables of numerical data were calculated using statistical software STATISTICA 12 PL. Significance of the statistical differences was assessed with the use of Mann-Whitney U test.

3 RESULTS AND DISCUSSION

Overall characteristics for body mass, height, age and BMI are presented in Table 1. Analysis of the parameters provided by the respondents showed that the mean body mass in women was 58.1 kg, with a mean height of 166.6 cm. Whereas for men the mean body mass was 74.3 kg, with the mean height of 178.6 cm. The data presented in Table 1 show that the value of BMI is within the range of desirable values in the group of both women and men: 18.5 – 24.9. This shows a correct content of fatty tissue in the examined group.

TABLE 1.

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THE AVERAGE VALUES OF BODY MASS, HEIGHT AND BODY MASS INDEX (BMI) OF THE EXAMINED MALE AND FEMALE STUDENTS

	Women (n=266)		Men (n=52)	
	\bar{x}	SD	\bar{x}	SD
Height [cm]	166.6	5.37	178.6	5.76
Weight [kg]	58.1	7.89	74.3	10.15
BMI [kg/m ²]	20.9	2.56	23.3	2.39
Age [years]	21.4	0.98	22.2	1.58

**TABLE 2.
 PREVALENCE OF OBESITY AMONG STUDENTS
 BASED ON BMI ACCORDING TO GENDER**

The problems of overweight and obesity are

	Women (n=266)				Men (n=52)			
	n	%	\bar{x}	SD	n	%	\bar{x}	SD
Underweight (<18,5 kg/m ²)	40	15.1	17.7	0.67	0	0	0	0
Normal (18,5-24,99 kg/m ²)	213	80.1	21.1	1.59	39	75	22.2	1.65
Overweight (25,0-29,99 kg/m ²)	10	3.8	26.4	1.42	12	23.1	25.9	0.91
Obese (>30 kg/m ²)	3	1.1	33.0	0.19	1	1.9	30.5	-

of increasing significance in the entire population, and disorders related to obesity generate both economic and social costs. The assessment of BMI (Table 2) was carried out based on the body mass

and height of the subjects. The mean values of BMI were higher for men in comparison to women. In the studied population 75% men and 80.1% women were characterized by a correct body mass, whereas 23.1% men and 3.8% women were overweight. There were few obese individuals (1.9% men and 1.1% women), and body mass deficiency was observed only in 15.1% women. The results of the present study in terms of BMI values are consistent with findings reported by other authors [7], [8], [9], [10] and they confirm that more female students are underweight, whereas more male students are overweight. Charkiewicz et al. [11] has reported that 75% female students have a correct body mass, 23% are underweight, and only 2% are overweight. Whereas the study by Myszkowska – Ryciak et al. [12], which compared dietary habits of female students of University of Physical Education and Warsaw University of Life Sciences (SGGW), showed that there were only 7% overweight female students at the latter university, while 5% of the subjects in both schools were underweight. In another study, conducted by Szczuko et al. [13] it was shown that 17.2% males and 7.4% females were overweight, 6.9% males and 0.4% females were obese, while 6.9% males and 7.4% females were underweight.

The number of meals consumed per day and their energy value are of vital importance in terms of each individual's healthy eating habits. A model of rational eating is based on regular consumption of proper meals. Every adult should have from four to five meals a day, preferably at equal intervals, which ensures continuity of metabolic processes [14].

The present findings show a prevalence of the three-meals-a-day model among both females and males (Table 3). 33.5% females and 26.9% males reported having four meals throughout a day, and 19.2% females and 11.5% males claimed they had

five meals a day. In the group of respondents, 7.5% females and 9.62% males reported having fewer than three meals daily. The findings showed no statistically significant differences between sexes and the number of meals consumed per day. A study by Szczuko et al. [13] conducted in a group of students of the University of Szczecin showed that 45% females and 41.6% males reported having four meals a day. Other studies [15], [16] confirm the above suggestion that students mostly have three or four meals a day. According to Stefańska et al. [17] females more frequently adhere to the four-meals-a-day model, while males tend to have three meals a day, regardless of their place of residence during the academic year. Rasińska [18] has provided evidence that, regardless of sex, students prefer having three rather than four meals a day (61.8% females and 66.5% males).

Lack of regularity in having meals is another negative eating behaviour which increases probability of excessive body mass. Based on the present findings (Table 3) it is possible to conclude that the majority of the respondents (77.4% females and 73.1% males) have meals irregularly.

Lack of regularity promotes snacking between meals. On the one hand, between-meal snacks may be an additional source of fruit, vegetables, etc. in everyday diet. On the other hand, they may lead to positive energy balance [19]. According to the present findings, more than a half of the subjects reported snacking between meals a few times a day, or at least once a day (61.6% males and 64.2% females).

TABLE 3.
SELECTED NUTRITIONAL BEHAVIORS IN
STUDENTS

Nutritional behaviors	Women n	n=266 %	Men n	n=52 %	
1-2 meals	20	7.5	5	9.62	
3 meals	90	33.8	21	40.4	
4 meals	89	33.5	14	26.9	
5 meals	51	19.2	6	11.5	
over 5 meals	16	6	6	11.5	
Regularity of meals	Yes	60	22.6	14	26.9
	No	206	77.4	38	73.1
	Yes, several times a day	78	29.3	13	25
Eating between meals	Yes, at least once a day	93	34.9	19	36.6
	Yes, but very rarely	85	32	18	34.6
	No	10	3.8	2	3.8
Place of dinner consumption	Can't	2	0.7	-	-
	Home	104	39.1	20	38.5
	On your own	160	60.2	32	61.5

Obviously linked with a lack of time, the behaviour, as Trafalska and Grzybowski [20] claim, is also a result of bad eating habits, acquired at home or during studies.

60.2% of female and 61.5% male students in the group admitted they had lunch at their own place (Table 3). Similar percentage of both females

and males reported having lunch in a canteen. This is consistent with the results obtained by Kowalska [21] who investigated preferences related to places for having lunch. The latter study showed that more than half of the students, that is 54%, had lunches made by themselves, and meals of 36% were made by their parents. Only 10% of the subjects had lunch in canteens, diners, or fast food restaurants.

TABLE 4.
 KEEPING ACTIVE LIFESTYLE

Keep- ing active lifestyle	Wo	n=26	Me	n=52
	men n	6 %	n n	%
Yes	231	86.9	49	94.2
Every Day 3-5 times per week	13	4.9*	7	13.4*
1-2 times per week	37	13.9*	16	30.8*
once a month	97	36.5	20	38.5
No	84	31.6*	6	11.5*
	35	13.1	3	5.8

*- statistically significant at $p \leq 0,05$

Daily exercise contributes to good health. Low level of physical activity may, later in life, lead to the development of diseases of affluence, such as: obesity, diabetes, or ischemic heart disease [22]. Physical activity must be performed regularly, on most days of the week, in order to bring benefits. According to Gronowska-Senger [23] lack of suitable physical activity is found in 50% of adult population. Only 24.6% adult Polish men do exercise on a regular basis.

86.9% females and 94.2% males (Table 4)

participating in the present study, reported doing exercise every day, or a few times a week. Statistically significant differences were found between males and females with regard to everyday physical activity – 13.4% males admitted they exercised every day, and in the case of women the relevant rate was visibly lower, i.e. 4.9%. Men, more often than women, were involved in additional physical activity 3-5 times a week (30.9% males, 13.9% females). In both groups there were similar results related to additional physical activity performed 1-2 times a week. One in three women (31.6%) reported involvement in physical activity only once a month. The percentage of males exercising once a month was significantly lower (11.5%). Stefańska et al. [17] showed that 18% female and 30% male students of Medical University of Białystok practised sport on a regular basis. On the other hand, Likus et al. [24] conducted a survey among students of the Medical University of Silesia, and found out that 40% of those studying medicine, nursing and obstetrics assessed themselves as physically active, and the relevant rate for physiotherapy students was as high as 70%. According to Sochocka and Wojtyłko [25] men tend to be more frequently involved in regular physical activity than women. 36.5% of all the respondents admitted they did not exercise at all and, of course, this included the female subjects. The findings related to students of Gdansk University of Physical Education and Sport [26] showed a different situation; in this case active way of spending time was reported by 94.8% respondents. It must be emphasized that the high percentage of young people involved in sports was probably linked with the specificity of the studies at Gdansk University of Physical Education and Sport.

4 CONCLUSION

1. Based on BMI it has been determined that a significant majority of the subjects have a correct body mass.

2. The number of meals consumed per day is correct. Yet, the lack of regularity in eating schedules, observed in 75% of the studied population, is an alarming phenomenon. Snacking is another improper eating behaviour identified in 61.6% males and 64.2% females.

3. The study has shown that significant majority of men are systematically involved in physical activity (every day or 3-5 times a week) – 44.2%. In the case of women this level of physical activity has been reported by only 18.8% respondents.

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