COMPARISON OF DIETARY HABITS OF WOMEN STUDYING AT THE DEPARTMENTS RELATED TO THE HEALTHCARE SECTOR

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Abstract:
Objectives: Appropriate nutrition plays an essential role in preserving health. Eating habits depend on numerous factors (environmental, cultural, demographic). An essential role is also played by the knowledge of the rules of appropriate nutrition and its practical application. Numerous studies underline also an enormous importance of promoting health and pro-health education conducted by healthcare workers among the patients.The aim of the work was to assess and present selected dietary behaviours of women studying at the departments related to healthcare. **Material and methods**: The test group - 196 women studying: dietetics, public health, physiotherapy and nursing. The testing tool consisted in the questionnaire. In order to assess the degree of correlation of the adopted variables, a chi-squared test coefficient was calculated, with the significance level at $p \leq 0.05$. **Results**: The tested women usually consume 3-4 meals a day. The daily consumption of vegetables and fruit is reported in the highest degree by the students of dietetics and in the lowest degree by the students of nursing. Among the students of physiotherapy, nursing and public health, frying prevails as a method of preparing meat dishes. Drinks are mostly sweetened by the students of public health and physiotherapy. 33% of the public health students reach for sweets every day. **Conclusions**: The students of dietetics apply the rules of healthy nutrition significantly more often than the students of the other departments. The bad habits observed indicate the necessity of conducting dietary education and a change in the dietary attitudes among young women, especially students of public health.

BACKGROUND

Appropriate dietary habits together with regular physical activity constitute pillars of human health. The results of contemporary studies indicate a close relationship between the quality of food, eating habits and preserving health. Appropriate nutrition plays a particularly important role in diet-related diseases, that is overweight/obesity, diabetes type 2, cardiovascular diseases, cancer, osteoporosis [Cianciara 2011].

Shaping of appropriate dietary habits depends on many factors. An essential role in this respect is paid by the family, where dietary norms and preferences are passed on [Jeżewska-Zychowicz 2000]. Dietary choices of the parents, the approach to food products, the way of consumption and table behaviour are very often copied by the children. Another environment, equally strongly affecting the dietary habits, is the school, and an essential role in the process of dietary education is ascribed to school cafeterias and school shops [Jeżewska-Zychowicz 2007]. An essential influence on the shaping of dietary habits and behaviours is held by social

predispositions and the predispositions related to the living conditions in which a given person lives as well as by the level of basic knowledge from the field of nutrition [Chęcińska et al. 2013]. The topic related to the assessment of dietary behaviours of various age and social groups often constitutes the topic of research conducted by many authors [Kowalska 2010, Myszkowska-Ryciak et al. 2011, Seń et al. 2012, Rasińska 2012, Szczodrowska & Krysiak 2013, Chęcińska et al. 2013, Malczyk et al. 2017, Bator 2017]. The studies by Rasińska (2012) showed that women, more than men, follow the rules of healthy nutrition and pay more attention to the improvement of body shape and health. It is usually the women who are responsible for the dietary organisation of a family, the purchase of food, the preparation of meals and the circumstances of their consumption, through which they can influence the dietary habits of the family members [Jeżewska-Zychowicz 2007]. That indicates an important role of women in shaping dietary habits and encourages us to pay attention to the ways of eating as presented by young women, in particular by students of departments related to healthcare, who, in the future, are going to be a source of knowledge and an example to follow both for the members of their families and for those under their care or their patients.

Aim of the study

The aim of the study was to assess and present selected dietary behaviours of women studying at the Faculty of Medicine and Health Studies with reference to the field studied.

MATERIAL AND METHODS

The studies were carried out within the Programmes of Cross-Border Cooperation between the Republic of Poland and the Slovak Republic 2007-2013 performed by the department of Health Studies of the Faculty of Physical Education of the University of Rzeszów in the years 2010-2014. The presented data constitute only a part of the above-mentioned studies.

The test group consisted of 196 female students, including 181 students from the Medical Faculty of the University of Rzeszów, representing the following departments: Dietetics (53 people), Public Health (45 people), Nursing (80 people) and 15 people from Physiotherapy of the Vincent Pol University in Lublin. The test tool consisted in a questionnaire. The tested people had been informed about the topic and the aim of the studies and expressed their consent to have the obtained data processed without revealing their personal information. The questionnaire consisted of two parts: the demographics part and the questions from the scope of dietary habits. In order to assess the degree of correlation of the variables adopted, the chi-squared test coefficient was calculated, with the significance level set at $p \leq 0.05$.

RESULTS

First, the number of meals consumed per day by the students of particular departments was analysed (table 1).

The best model of the frequency of consumed meals is represented by the women studying dietetics.

The analysis of the results of the study concerning the consumption of particular meals, that is breakfast, second breakfast, lunch, merienda and supper, as well as snacking between meals, revealed that the dietetics students most often of all the tested departments, consume breakfast and second breakfast, lunch and supper, and they most rarely snack. The weakest results were observed in the public health department – a rarer consumption of particular meals and a high percentage (42.22%) of people snacking between meals.

Table 1. Numeric and percentage distribution of the results concerning the meals consumed per day

Number of meals consumed per day	Physiotherapy	Dietetics	Nursing	Public Health	p-value
n-number	15	53	80	45	0.000*
1 meal	0 (0%)	0 (0%)	6 (7.5%)	0 (0%)	
2 meals	0 (0%)	0 (0%)	13 (16.25%)	3 (6.67%)	
3 meals	5 (33.3%)	6 (11.32%)	40 (50%)	14 (31.11%)	
4 meals	5 (33.3%)	30 (56.6%)	13 (16.25%)	19 (42.22%)	
5 meals	5 (33.3%)	15 (28.3%)	7 (8.75%)	7 (15.56%)	
more than 5 meals	0 (0%)	2 (3.77%)	1 (1.25%)	2 (4.44%)	

*difference statistically significant at the level of $\alpha \leq 0.05$

Table 2 presents data on the frequency of consuming particular food products in the groups of women from the analysed university departments.

Table 2. Frequency of consuming particular food products

Frequency of consuming meals	Physiotherapy	Dietetics	Nursing	Public Health
Red meat				
every day	0	0	0	0
several times a week	66.67%	11.32%	17.50%	13.33%
once a week or more rarely	6.67%	45.28%	33.75%	42.22%
once a month	6.67%	26.42%	30%	31.11%
several times a year	0	0	0	0
I don't eat it	20%	16.98%	18.75%	13.33%
White meat				
every day	0	9.43%	0	2.22%
several times a week	46.67%	66.04%	35%	64.44%
once a week or more rarely	40%	24.53%	52.50%	22.22%
once a month	6.67%	0	8.75%	6.67%
several times a year	0	0	0	0
I don't eat it	6.67%	0	3.75%	4.44%
Fish				
every day	0	1.89%	0	0
several times a week	13.33%	16.98%	11.25%	11.11%
once a week or more rarely	66.67%	62.25%	46.25%	42.22%
once a month	20%	18.87%	35%	37.78%
several times a year	0	0	0	0
I don't eat it	0	0	7.5%	8.89%
Milk and its products				
every day	40%	50.94%	26.25%	28.89%
several times a week	46.67%	41.51%	48.75%	60.0%
once a week or more rarely	13.33%	7.55%	21.25%	11.11%
once a month	0	0	2.5%	0
several times a year	0	0	0	0
I don't eat it	0	0	1.25%	0
Vegetables				
every day	46.67%	88.68%	22.50%	28.89%
several times a week	53.33%	11.32%	60%	57.78%
once a week or more rarely	0	0	15%	8.89%
once a month	0	0	1.25%	2.22%
several times a year	0	0	0	0
I don't eat it	0	0	1.25%	2.22%

Fruit				
every day	46.67%	69.81%	30%	35.56%
several times a week	46.67%	26.42%	53.75%	60.0%
once a week or more rarely	6.67%	1.89%	16.25%	4.44%
once a month	0	2%	0	0
several times a year	0	0	0	0
I don't eat it	0	0	0	0
Eggs				
every day	0	5.66%	1.25%	0
several times a week	66.67%	28.3%	26.25%	31.11%
once a week or more rarely	13.33%	54.72%	56.25%	42.22%
once a month	13.33%	11.32%	13.75%	22.22%
several times a year	0	0	0	0
I don't eat it	6.67%	0	2.5%	4.44%
White bread and bread goods				
every day	33.33%	18.87%	51.25%	64.44%
several times a week	46.67%	39.62%	18.75%	15.56%
once a week or more rarely	0	16.98%	8.75%	13.33%
once a month	0	11.32%	8.75%	2.22%
several times a year	0	0	0	0
I don't eat it	20%	13.21%	12.5%	4.44%
Brown bread and bread goods				
every day	26.67%	30.19%	22.5%	24.44%
several times a week	53.33%	54.72%	25%	37.78%
once a week or more rarely	6.67%	5.66%	17.5%	17.78%
once a month	6.67%	7.55%	22.5%	15.56%
several times a year	0	0	0	0
I don't eat it	6.67%	1.89%	12.50%	4.44%
Sweets				
every day	6.67%	13.21%	15%	33.33%
several times a week	46.67%	33.96%	48.75%	33.33%
once a week or more rarely	46.67%	37.74%	26.25%	26.67%
once a month	0	15.09%	7.5%	6.67%
several times a year	0	0	0	0
I don't eat it	0	0	2.5%	0
Grain products				
every day	6.67%	18.87%	5%	0
several times a week	73.33%	67.92%	42.5%	60.0%
once a week or more rarely	20.0%	13.21%	45.0%	31.11%
once a month	0	0	6.25%	8.89%
several times a year	0	0	0	0
I don't eat it	0	0	1.25%	0
Potatoes				
every day	0	3.77%	11.25%	2.22%
several times a week	46.67%	60.38%	47.5%	46.67%
once a week or more rarely	46.67%	26.42%	28.75%	42.22%
once a month	0	7.55%	7.50%	6.67%
several times a year	0	0	0	0
I don't eat it	6.67%	1.89%	5.0%	2.22%

Pizza				
every day	0	0	0	0
several times a week	13.33%	0	1.25%	2.22%
once a week or more rarely	20%	11.32%	25.0%	26.67%
once a month	53.33%	71.7%	70.0%	68.89%
several times a year	0	0	0	0
I don't eat it	13.33%	16.98%	3.75%	2.22%
Fast-food				
every day	0	0	0	0
several times a week	6.67%	0	0	8.89%
once a week or more rarely	53.33%	7.55%	15.0%	26.67%
once a month	0	50.94%	50.0%	42.22%
several times a year	0	0	0	0
I don't eat it	40.0%	41.51%	35.0%	22.22%

Grain products are reached for by dietetics students every day (18.87%), while the public health students do not include them in their daily diet. As far as the consumption of white bread and bread goods is concerned, they are most willingly chosen by the public health students (64.44%) and the least often by the dietetics students (18.87%). The highest percentage of students of dietetics declared the daily consumption of vegetables (88.68%), with the lowest percentage of nursing students (22.5%). Fruit is eaten every day by 69.81% of the students of dietetics, and only by 30% of the women studying nursing. Sweets are eaten every day by 33.33% of the public health students. A daily consumption of milk and its products is declared by 50.94% of the dietetics students and 40% of the physiotherapy students with 28.89% of the students of public health and 26.25% of the students of nursing. The consumption of red meat is most often declared by the students of physiotherapy (66.67% - several times a week), and most rarely by the students of dietetics. The dietetics students definitely more often eat white meat – 9.44% every day and 66.04% several times a week. The lowest consumption of white meat is declared by the students of nursing. Similar results as in the case of the consumption of white meat were noticed in the case of the consumption of fish, which is most often chosen by the students of dietetics and physiotherapy.

Another issue that was analysed was the preferred method of preparing meat products (table 3).

Table 3. Numeric and percentage distribution of the results concerning the preferred method of preparing meat products

Method of preparing meat products	**Physiotherapy**		**Dietetics**		**Nursing**		**Public Health**		
	Number	%	number	%	number	%	number	%	p-value
frying	8	53.33	8	15.09	28	35.0	20	44.44	
boiling	2	13.33	13	24.53	6	7.5	5	11.11	
roasting	0	0	16	30.19	8	10.0	11	24.44	
braising	2	13.33	14	26.42	8	10.0	1	2.22	0.000*
grilling	2	13.33	1	1.89	6	7.5	2	4.44	
I don't pay attention	1	6.67	1	1.89	22	27.5	6	13.33	
I don't eat these products	0	0	0	0	2	2.5	0	0	

*statistically significant difference at the level of $\alpha \leq 0.05$

As we can see in the table above, statistically significant differences were noticed and the best results are those of the dietetics students, who in the highest number pay attention to the method of preparing meat products and they most often give up frying, replacing it with roasting, braising or boiling.

Table 4. Numeric and percentage distribution of the results concerning the use of sugar for sweetening drinks (coffee, tea)

Use of sugar for sweetening drinks	**Physiotherapy**		**Dietetics**		**Nursing**		**Public Health**		
	Number	%	number	%	number	%	number	%	p-value
I don't sweeten	3	20	30	56.6	19	23.75	8	17.78	0.05*
I don't sweeten much (less than 1 tea spoonful)	3	20	10	18.87	15	18.75	11	24.44	
I sweeten in moderation (less than 2 tea spoonfuls)	5	33.33	12	22.64	34	42.5	18	40.0	
I sweeten without limitations	4	26.67	1	1.89	12	15	8	17.78	

*statistically significant difference at the level of $\alpha \leq 0.05$

Over 50% of the dietetics students do not use sugar to sweeten drinks at all. The groups that sweeten the most are the students of public health and physiotherapy.

Table 5. Numeric and percentage distribution of the results concerning the use of salt in everyday diet

Use of salt in everyday diet	**Physiotherapy**		**Dietetics**		**Nursing**		**Public Health**		
	number	%	number	%	number	%	number	%	p-value
none	0	0	4	7.55	4	5	6	13.33	0.114
very economically	5	33.33	34	64.15	29	36.25	16	35.56	
moderately	8	53.33	14	26.42	42	52.5	21	46.67	
without limitations	2	13.33	1	1.89	5	6.25	2	4.44	

*statistically significant difference at the level of $\alpha \leq 0.05$

The juxtaposition concerning the use of salt in everyday diet (table 5) and the speed of consuming meals (table 6) did not show statistically significant differences.

Table 6. Numeric and percentage distribution of the results concerning the way of consuming meals

Way of consuming meals	**Physiotherapy**		**Dietetics**		**Nursing**		**Public Health**		
	number	%	number	%	number	%	number	%	p-value
quickly and in a hurry	7	46.67	18	33.96	34	42.5	24	53.33	0.395
slowly and without hurrying	8	53.33	35	66.04	46	57.5	21	46.67	

*statistically significant difference at the level of $\alpha \leq 0.05$

DISCUSSION

In the National Health Programme for Poland for the years 2016-2020, one of the six operational objectives is 'The improvement of the way of eating, of the condition of nutrition as well as of the physical activity of the society'. In the above mentioned paragraph, this document draws attention, among others, to the development of qualifications and the education of healthcare workers in the scope of healthy nutrition. It has been observed that the

knowledge possessed by the healthcare workers concerning nutrition and health-promoting dietary behaviours is not adequate and the value of their BMI indicates an incorrect condition of their nutrition (Bator 2017). As the author of the above mentioned studies observes, the healthcare workers should be characterised by a high level of knowledge concerning health-promoting dietary habits, as health promotion is the basic, apart from the medical activity, task of healthcare units.

Undoubtedly, the students of medical departments, as the persons employed in the future in the healthcare sector, should be characterised by a conscious attitude towards shaping healthy behaviours, including appropriate dietary habits. In the broadly understood health-promoting education, the credibility of the educator is important, hence, apart from the knowledge possessed, the behaviours represented in a given field are of importance. That is why the dietary behaviours of the females studying physiotherapy, dietetics, nursing and public health became the subject of the assessment and the analysis of this work.

Proper nutrition means providing the body with all the necessary nutrients, bearing in mind the number of meals and the frequency of their consumption. The nutrition standards published in Poland, recommended by the Food and Nutrition Institute, mention the consumption of 5 meals a day. The tested women, however, do not comply with this rule. The analysis of the number of meals consumed shows the consumption of 3-4 meals a day. Regardless of the department of studies, the main meals are: first breakfast, lunch and supper. Such a number of consumed meals of the same type is also indicated by the work of Łysak et al. (2009), Kowalska (2010) or Rasińska (2012). The insufficient number of meals among Polish academic youth is also reported in their studies by other authors. As far as the particular medical departments are concerned, no statistically significant differences were noticed, however, as expected, the best model of the regularity of consumed meals is shown in the department of dietetics. A vast majority of the students from that department consume 4, 5 or more meals a day (88.67%). As far as the qualitative assessment of the method of the students' nutrition is concerned, many abnormalities are observed. They are related to too low a consumption of dairy and grain products, vegetables and fruit and to the excessive use of salt and fats in everyday diet. Similar conclusions can be also found in the studies by Skibniewska et al. (2009). Such nutrition carries the increased risk of, if only, cancer. Among dietary factors predisposing to the occurrence of diet-related cancers there are, first of all, too high energy content of the food in comparison with the needs of the body, and, consequently, obesity, excessive consumption of fats (especially fried ones), an inadequate amount of dietary fibre, a low consumption of vegetables and fruit as well as milk with its products (which means a low consumption of calcium and antioxidative vitamins) as well as a high consumption of sodium [Dydjow-Bendek & Ejsmont 2010, Pudło et al. 2015]. The observed dietary abnormalities of the tested students concern also the way of preparing meat products. Among the students of physiotherapy, nursing and public health, frying prevails. The studies by Skibniewska et al. (2009) indicate that frying is the most common form of preparing meat products among Polish students (70%), while, for example, for the students from Belgium, it is roasting (60%). In her work, Bator (2017) quotes the studies of other authors, which show that a considerable percentage of students from various medical universities in Poland make characteristic nutrition-related mistakes, despite their knowledge and the awareness of the health effects of incorrect nutrition.

The obtained results concerning the dietary behaviours are not satisfactory and, as it can be seen, they strongly correspond with the studies of other authors. The tested people treat the rules of proper nutrition selectively. That indicates the need for further shaping of health-promoting attitudes, bearing in mind that not only the knowledge from the scope of health is the condition of its preservation, but mostly making appropriate choices, suitable for one's

health. The students of medical departments should set an example for the society, not only through giving advice, but also by implementing the rules they learn in their own life.

CONCLUSIONS

1. The department of studies is a factor differentiating the dietary behaviours of the tested women.
2. The students of dietetics really more often than the students of the other departments consider the guidelines of appropriate nutrition.
3. Studying at the departments related to health protection and the theoretical knowledge of the rules concerning appropriate nutrition does not fully transfer to their practical application among the women tested.
4. The abnormalities noticed indicate the necessity of conducting dietary education and the change of dietary attitudes among young women, especially among the students of public health and nursing.

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