

ANNA KOLLAJTIS-DOŁOWY¹, IWONA BONIECKA²

PRO- HEALTH NUTRITIONAL BEHAVIORS OF SELECTED GROUP OF
STUDENTS OF THE MEDICAL UNIVERSITY OF WARSAW

ZACHOWANIA PROZDROWOTNE WYBRANEJ GRUPY STUDENTÓW
AKADEMII MEDYCZNEJ W WARSZAWIE

¹Department of Human Nutrition
Warsaw Agricultural University
02-776 Warsaw, 159C Nowoursynowska Str.
e-mail: AKD1@gazeta.pl
Head: prof. dr hab. A. Brzozowska

²Chair of Human Nutrition
Medical University of Warsaw
01-445 Warsaw, 27 Ciołka Str.
Head: prof. dr hab. B. Szczygiel

The aim of the study was the analysis of pro-health nutritional behaviors among female students Medical University of Warsaw. The results of the study show that nutritional behaviors of students who learned human nutrition were significantly better in accordance with dietary guidelines.

Key words: pro-health nutritional behaviors, frequency of consumption, Medical University of Warsaw students.

Słowa kluczowe: prozdrowotne zachowania żywieniowe, częstotliwość spożycia, studenci Akademii Medycznej w Warszawie

INTRODUCTION

The studies indicate that the faults in nutrition are associated with metabolic diseases [6, 2]. That's why the improvement of the dietary habits influences better health state, which may be achieved among others by nutritional education [15, 8]. The aim of the study was the analysis of selected pro-health nutritional behaviors among female students of the Faculty of Health Sciences at the Medical University of Warsaw.

MATERIALS AND METHODS

100 female students of the 3rd Year of the above-mentioned Faculty took part in the study. Two groups of students were studied: one group of 57 female dietetics students had human nutrition in their

curriculum, the second of 43 female students of midwifery and nursing to whom no course in human nutrition had been given. This study was carried out by the questionnaire method comprising 7 questions referring selected nutritional behaviors, e.g.: numbers and regularity of meals as well as the frequency of highly valuable products consumption. Besides the field of studies, self-assessment of health state and BMI (for young people according to *Ferro-Luzzi*) [22] were the differential factors. In the statistic analysis was applied Chi² test for a four-square table in Epiinfo, with p value ≤ 0,05.

RESULTS AND DISCUSSION

Fifty per cent of respondents defined their health state as very good. Proper BMI had approx. 80 % of students, in which more than 10 % were from dietetics. Overweight or obesity occurred in bigger percentage of midwifery and nursing students than from dietetics (20 % vs. 5 %), and deficiency vice versa (11 % vs. 7 %).

Table I. The number of consumed meals in two groups of students (%)

					Statistical correlation		
		total	D	M & N	FS	HC	BMI
Number of meals	2 and less	8	5,3	11,6			
	3	38	29,8	48,8	*		
	4 and more	54	64,9	39,5	*	*	

D – dietetics; M & N – midwifery and nursing; FS – faculty of studies, HC – health condition, BMI – body mass index; *p≤0,05

Results (table I) indicate that more than half of female students, in which significantly more (p=0,01) dietetics than midwifery and nursing students consumed 4 and more meals, which was a better result, than achieved in other researches [7, 3, 17, 16]. Most respondents consumed breakfast daily, in which considerably more (p=0,01) were dietetics students (table II). Confirmed were previous results concerning the number and regularity of consumed meals by those who have in their curriculum the issues of food and nutrition [5, 13, 18] as well on the topics of regularity of consumption among students of the Medical University of Warsaw [13], students of human nutrition [15] and students of gastronomic schools [8] presenting beneficial influence of nutritional knowledge on nutritional behaviors.

Table II. The regularity of consumed meals in two groups of students (%)

Meal	Regularly			From time to time			Statistical correlation		
	total	D	M & N	total	D	M & N	FS	HC	BMI
Breakfast	81	89,5	69,8	13	10,5	18,6	*		
Dinner	70	73,7	65,1	22	22,8	20,9			*
Supper	65	71,9	55,8	19	17,5	20,9			
Large late dinner	10	3,5	18,6	30	29,8	30,2		*	*
Lunch	37	42,1	30,2	40	36,8	41,9		*	
Tea time	15	12,3	18,6	36	36,8	34,9			

D – dietetics; M & N – midwifery and nursing; FS – faculty of studies, HC – health condition, BMI – body mass index; *p≤0,05

People with normal BMI more frequently, than students with BMI above the norm consumed dinner regularly ($p=0,04$) and didn't consume large late dinner ($p=0,05$). This confirms the opinion that smaller but more frequently consumed meals have beneficial effect on health [6, 2] and general feeling [21]. Persons who consumed 4 and more meals considerably more frequently defined their health state as very good than good (80 % vs. 44 %; $p=0,01$).

It was stated, like in previous studies [15, 17] that there is a common, especially among midwifery and nursing students (90 %) habit of snacking. Appreciated should be that considerable part of respondents ate fruits (65 %), yoghurts and kefir (40 %), and the smaller part are sweets (35 %), and the smallest (4 %) fast-foods. Relatively a lot of persons also consumed juices (30 %) and vegetables (17 %). Similar results were achieved by other authors [3, 10, 17]. Snacking, as considered by *Charzewska* et al. [2], could be useful in the promotion of healthy life style and achievement of a balance of nutritious value of food ration, of course under condition that sweets and salt snacks won't be eaten between meals [5, 7].

Table III. The frequency of selected food products and groups of food products (%) consumed in two groups of students

	Consuming frequency									Statistical correlation		
	Once a day			3 – 4 times a week			1 – 2 times a week			FS	HC	BMI
	Total	D	M & N	Total	D	M & N	Total	D	M & N			
Dairy products	46	50,9	39,5	37	36,8	37,2	16	12,3	20,9			
Milk and milk drinks	41	47,4	32,6	28	26,3	30,2	16	15,8	16,3		*	*
Cottage cheese	6	7,0	4,7	26	31,6	18,6	28	24,6	32,6			
Fish	0	0	0	12	10,5	14,0	48	54,4	39,5		*	
Vegetables in total	42	50,9	30,2	36	36,8	34,9	15	8,8	23,3	*		
Fresh vegetables	33	43,9	18,6	31	26,3	37,2	20	17,5	23,3			
Leguminous plants	0	0	0	5	5,3	4,7	29	21,1	39,5	*		
Fruits	62	59,6	65,1	30	35,1	23,3	6	1,8	11,6			
Brown bread	34	35,1	32,6	26	22,8	30,2	21	28,1	11,6		*	
Rice and noodles	0	0	0	31	15,8	51,2	49	57,9	37,2	*		
Groats	0	0	0	10	5,3	16,3	47	50,9	41,9			
Butter	37	28,1	48,8	14	10,5	18,6	11	14,0	7,0	*	*	
Margarine	36	36,8	34,9	13	19,3	4,7	10	12,3	7,0	*		
Lard	0	0	0	1	0	2,3	6	0	14,0			
Plant oils, olive oil	15	15,8	14,0	39	36,8	41,9	24	29,8	16,3			

D – dietetics; M & N – midwifery and nursing; FS – faculty of studies, HC – health condition, BMI – body mass index; * $p \leq 0,05$

Results indicate, that the biggest part of respondents (table III) consumed fruits every day. In lower percentage the respondents consumed vegetables, what was confirmed by the results of other studies [15, 5, 10]. Fresh vegetables were consumed by bigger ($p=0,04$) part of students of dietetics than midwifery and nursing, what proves that nutritional knowledge gained

during the studies could have positive influence on nutrition. Also other researchers emphasized relatively rarely used in nutrition leguminous plants [7, 17] like abroad [11, 14] and they consider this phenomenon as improper, as this products could partly replace meat [22]. The structure of dairy products consumption had more healthy character than the frequency of its consumption (table III). Though dairy products were consumed by relatively not big part of respondents, like it was observed by other authors [10, 18], still in the highest percentage the respondents drunk milk drinks as the best source of calcium [22]. Less than once a week milk drinks were consumed by considerably smaller ($p=0,03$) group of persons with normal BMI (11 %), than those being below the norm (44 %) what could indicate drastically limited food intake by this group of students. Brown bread was consumed daily just by every third person, as rarely as it was in previous studies [9, 14], and in comparison with some other research works [18] even more frequently. It wasn't indicated, like in previous works *Piórecka* et al. [17], big differences in the frequency of white and brown bread consumption.

The data of low fish consumption confirms the results of *Kollajtis-Dolowy* et al. [10], conducted also among students of medical universities [3, 16], and from some of them its even higher [9, 19]. Fact, that more persons in good than average health state were eating dark bread daily (40 % vs. 17 %; $p = 0,003$), as well as more persons ($p=0,04$) in very good (45 %) than good (21 %) health state consumed milk drinks more often could proof that proper nutrition has beneficial influence on health and general feeling, what was stressed by *Williams* [21].

Implementation pro-health nutrition model was promoted by reporting by students the frequency of fat consumption for bread spreading, and in the group of dietetics students also the structure of their consumption. Both butter and margarine was consumed by every third respondent, and margarine was consumed by considerably bigger group of dietetic students ($p=0,03$) than those from midwifery and nursing (table III).

Those results are better than in comparison with previously achieved studies [1, 19]. Plant oils were used several times a week by two of three respondents. Among frying fats – most of the respondents indicated plant oil and then oil of olives. It results from other scientific reports that plant oils also used for frying, but a little bit less frequently [1]. It is emphasized in some of the investigations that relatively big group used grease [12] and hard margarines [1].

Among drinks, the biggest number of tested persons drunk tea (87 %), mineral water (72 %) and juices (67 %) advised in the Polish nutritional recommendations [22], relatively smallest part gas drinks (13 %) and coffee (33 %). Also other authors showed that tea is very popular among adolescents [4, 11], mineral water and juices [3, 10, 20]. Results of some studies indicated relatively bigger frequency of consumption of gas drinks and coffee [4, 11].

CONCLUSIONS

Though some of the nutritional behaviors of respondents were frequently improper, still in the group of dietetics students, they had in major part more healthy character, than among students of midwifery and nursing, what makes one consider that it is the knowledge gained during studies that had positive influence on students behaviors.

It should be considered to introduce more broadly subject-matters on human nutrition to the curricula in all medical fields, what could increase not only theoretical knowledge of

students, but could have positive influence on their nutritional attitudes and behaviors. It's even more indicated, that the graduates of the Medical University of Warsaw, according to the expectations of their patients, should be for them not only a reliable source of knowledge, but also an example to follow in.

A. Kołłajtis-Dołowy, I. Boniecka

PRO- HEALTH NUTRITIONAL BEHAVIORS OF SELECTED GROUP OF STUDENTS
OF THE MEDICAL UNIVERSITY OF WARSAW

Summary

The aim of the study was the analysis of pro-health nutritional behaviors among 100 female students Medical University of Warsaw tested by the questionnaire method. The results of the study show that nutritional behaviors of students who learned human nutrition were significantly better in accordance with dietary guidelines. The most frequent consumed group of products were fruits and dairy products. Consumption of vegetables, number and regularity of meals had been better among dietetics students then among midwifery and nursing students.

A. Kołłajtis-Dołowy, I. Boniecka

ZACHOWANIA PROZDROWOTNE WYBRANEJ GRUPY STUDENTÓW
AKADEMII MEDYCZNEJ W WARSZAWIE

Streszczenie

Celem pracy była analiza prozdrowotnych zachowań żywieniowych w grupie 100 studentek Wydziału Nauki o Zdrowiu AM w Warszawie. Badania prowadzono metodą ankietową. W analizie statystycznej zastosowano test χ^2 ($p \leq 0,05$).

Zachowania żywieniowe, jak np. regularność i częstotliwość spożycia żywności, były istotnie częściej zgodne z zaleceniami żywieniowymi wśród studentek uczących się żywienia człowieka, niż w grupie respondentek, które nie miały tego przedmiotu. Do najczęściej spożywanych produktów należały owoce, a potem przetwory mleczne. Prozdrowotne zachowania żywieniowe, przejawiające się m.in. w regularności posiłków, odpowiednim spożyciu warzyw i tłuszczów roślinnych, wykazywało stosunkowo więcej studentek dietetyki niż położnictwa i pielęgniarstwa.

REFERENCES

1. *Bolesławska I., Przysławski J., Maruszewska M., Walkowiak J.*: Preferences of academic students in fat consumption. *Żyw. Człow. Metab.*, 2001, 28, Supplement, 486 - 490 (in Polish).
2. *Charzewska J., Wajszczyk B., Chabros E., Rogalska-Niedźwiedz M., Chwojnowska Z.*: Health aspects of the frequency of fat consumption – New look on traditional habits. *Żyw. Człow. Metab.*, 2003, 30, 1/2, 68 – 75 (in Polish).
3. *Czech A., Grela E.*: Nutritional habits and frequency of nutritious products consumption among students of Lublin University. *Żyw. Człow. Metab.*, 2003, 30, 1/2, 81 - 85 (in Polish)
4. *Duda G., Suliburska J.*: Analysis of beverage's consumption by academic students. *Bromat. Chem. Toksykol.*, 2003, Supplement, 249 - 254 (in Polish).
5. *Gacek M.*: Assessment of nutritional habits of students of the Academy of Physical Education in Cracow in the years 1999-2000. *Żyw. Człow. Metab.*, 2001, 28, Supplement, 556 - 561 (in Polish).

6. *Gronowska-Senger A.*: Nutritional mistakes as the risk for health in Poland, *Żywność. Nauka. Technologia. Jakość.* 2001, Supplement, 8, 4, 29, 50 – 61 (in Polish).
7. *Ilow R., Regulska-Ilow B.*: Assessment of nutrition of the Wrocław Medical Academy students in the years 1993 – 1994. Part III. Nutritional habits and frequency of the occurrence of fat products in women and men diets, *Bromat. Chem. Toksykol.*, 1997, 30, 1, 37 - 45 (in Polish).
8. *Jeżewska-Zychowicz M.*: Influence of selected environmental factors on nutrition of female students of gastronomical schools. *Żyw. Człow. Metab.*, 2002, 29, Supplement, 143 – 149 (in Polish).
9. *Jeżewska-Zychowicz M., Łyszkowska D.*: Assessment of youth behaviors among adolescent aged 13-15 years and theirs conditions on the sample of city environment, *Żyw. Człow. Metab.*, 2003, 30, 1/2, 572 - 577 (in Polish).
10. *Kollajtis-Dolowy A., Pietruszka B., Waszczeniuk-Uliczka M., Chmara-Pawińska R.*: Selected nutritional behaviors in secondary schools adolescents from Warsaw. *Żyw. Człow. Metab.*, 2003, 30, 1/2, 182 - 193 (in Polish).
11. *Leclercq C., Piccinelli R., Arcella D., Le Donne C.*: Food consumption and nutrient in a sample of Italian secondary school students: results from the INRAN – RM – 2001 food survey. *Int. J. Food Sci. Nutr.*, 2004, 55, 4, 265 - 277.
12. *Misiuna M., Szcześniewska D.*: Prohealth behaviors of Warsaw citizens. *Zdr. Publ.*, 2003, 113 (1/2), 28 - 36 (in Polish).
13. *Olędzka R., Węgłowska K., Szczepańska-Chudy A.*: Assessment of nutrition of students and doctoral students of the Faculty of Pharmacy at the Medical University of Warsaw in the academic year 2002/2003. *Bromat. Chem. Toksykol.*, 2004, 37, 4, 353 - 358 (in Polish).
14. *Parsons T. J., Manor O., Power C.*: Changes in diet and physical activity in the 1990s in a large British sample (1958 birth cohort). *Eur. J. Clin. Nutr.*, 2005, 59, 49 - 56.
15. *Pierzynowska J., Wyrzykowska J., Gronowska-Senger A.*: The analysis of nutritional education influence on nutritional behaviors of selected groups of students., *Roczn. PZH*, 1998, 49, 491- 498 (in Polish).
16. *Pietryka-Michałowska E., Wdowiak L., Szymańska J.*: Health behavior of the medical universities students, III, *Nutritional Habits. Zdr. Publ.*, 2005, 115, 1, 71 - 74 (in Polish).
17. *Piórecka B., Markielowska A., Schlegel-Zawadzka M.*: Nutritional habits and knowledge of nurses from the Malopolska province, *Bromat. Chem. Toksykol.*, 2004, Supplement, 101 - 106 (in Polish).
18. *Szewczyński J., Ostrowska A.*: Changes of nutrition of students of the Medical University of Warsaw in the years 1970 – 2000. *Bromat. Chem. Toksykol.*, 2004, 37, 4, 381 – 386 (in Polish).
19. *Uramowska-Żyto B., Kozłowska-Wojciechowska M., Jarosz A., Makarewicz-Wujec M.*: Selected elements of life styles of students of colleges and universities in the light of empiric studies. *Rocz. Panstw. Zakł. Hig.*, 2004, 55, 2, 171 – 180 (in Polish).
20. *Vereecken C. A., Bobelijm K., Maes L.*: School food policy at primary and secondary schools in Belgium – Flanders: does it influence young people’s food habits? *Eur. J. Clin. Nutr.*, 2005, 59, 271 - 277.
21. *Williams P.*: Breakfast and diets of Australian adults: An analysis of data from the 1995 National Nutrition Survey. *Int. J. Food Sci. Nutr.*, 2005, 56, 1, 65 - 79.
22. *Ziemlański Ś.*: Principles of proper human nutrition. Nutritional recommendations for the population in Poland. Danone Institute – Promotion of Health Nutrition Foundation, Warsaw, 1998 (in Polish).