

BODY MASS INDEX (BMI) AND DIETARY PREFERENCES OF WOMEN LIVING IN RURAL AREAS

WSKAŹNIK BMI A PREFERENCJE ŻYWIENIOWE KOBIEŃ ZAMIESZKAŁYCH NA OBSZARACH WIEJSKICH

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ABSTRACT

The aim of the study was to examine the relationship between the BMI of women living in rural areas and their dietary habits, taking into consideration the regularity and frequency of consumption as well as preferences in various groups of foodstuffs. The study included 60 women aged 23 – 69, living in one county. The women were divided into two groups according to nutritional status (BMI): group I with normal body weight and group II with overweight and obesity. Dietary habits were evaluated by using the anonymous and voluntary questionnaire. The questionnaire contained questions concerning dietary preferences. The results were statistically analyzed. The study indicated that a vast majority of overweight and obese women in rural areas prefer fried dishes, red meat and animal fats. However, they do not consume vegetables and fruit frequently enough. Such dietary habits will only increase problems with obesity in rural communities. Thus it is important to start nutrition education as a significant strategy for non-pharmacological treatment of obesity and its health effects.

STRESZCZENIE

Głównym celem pracy było zbadanie zależności pomiędzy wskaźnikiem BMI kobiet zamieszkałych na obszarach wiejskich, a ich sposobem odżywiania się, ze szczególnym uwzględnieniem regularności spożycia, częstości konsumpcji i poziomu preferencji różnych grup produktów spożywczych. W badaniu wzięło udział 60 kobiet w wieku 23-69 lat, zamieszkałych na obszarze jednego powiatu. Kobiety podzielono według stanu odżywienia (BMI) na dwie grupy: I - z masą ciała prawidłową oraz II - z nadwagą i otyłością. Do oceny zwyczajowego sposobu żywienia zastosowano metodę anonimowej i dobrowolnej ankiety, dotyczącą głównie preferencji żywieniowych. Uzyskane wyniki badań poddano analizie statystycznej. Przeprowadzone badania wykazały, że kobiety z nadwagą i otyłością zamieszkałe na obszarach wiejskich w zdecydowanej większości preferują potrawy smażone, mięso czerwone oraz tłuszcze pochodzenia zwierzęcego, natomiast nie spożywają z odpowiednią częstotliwością warzyw i owoców. Tego typu zwyczaje żywieniowe będą sprzyjać dalszemu pogłębianiu się zjawiska otyłości w środowisku wiejskim. Należy więc wprowadzić edukację żywieniową jako ważną strategię nefarmakologicznego leczenia otyłości i jej skutków zdrowotnych.

INTRODUCTION

Marketing activities of industry and trade make us consume too many products that are highly energetic, fat-rich, in particular, saturated fatty acids and easily absorbable carbohydrates. Another dietary mistake that has recently become widespread is a low intake of products rich in dietary fibre, vitamins (especially a low intake of vegetables and fruit) and mineral salts (insufficient supply of milk and its products) Modern lifestyle leads to irregularities of meals consumption, skipping breakfast and eating late at night. All the

factors together with physical inactivity cause obesity. Prophylaxis oriented at a modification of environmental factors such as lifestyle and dietary habits forms the basis for fighting obesity [3, 6].

MATERIAL AND METHODS

The study covered 60 women aged 23-69 living in one county. The women were divided into two groups according to nutritional status (BMI):

- group I (29 respondents) with normal body weight (BMI 18,5-24,9 kg/m²),

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□ group II (31 respondents) with overweight and obesity (BMI 25,0-29,9 kg/m² and ≥30 kg/m²).

Dietary habits were evaluated by using the anonymous and voluntary questionnaire. The questionnaire contained questions concerning the usual number of meals a day and meal times, the frequency of consumption of vegetables and fruit as well as dietary preferences when it comes to the choice of meat, fats used for preparing meals and preferred culinary techniques.

The results were statistically analyzed. The values of parameters analyzed were characterized according to number and percentage. The inter-group differences for unrelated traits were found by using the homogeneity χ^2 test. The independence χ^2 test was used to examine the relationship between the examined traits. $P < 0.05$ was accepted as statistically significant. The database and statistical analysis were based on the STATISTICA 7.1 software (StatSoft, Polska).

RESULTS

In Table I the description of eating habits and dietary preferences in women were presented according to the Body Mass Index (BMI). The differences were not

Table 1. Eating habits and dietary preferences of women from rural areas according to BMI (%)
Sposob zywienia i preferencje zywieniowe kobiet zamieszkalych na terenach wiejskich zgodnie z BMI (%)

Examined traits	Normal body weight – group I (n=29)	Overweight and obesity – group II (n=31)	P
Number of meals			
- 1-2	13,3	11,8	>0,05
- 3-5	86,7	88,2	
Regularity of meals			
- yes at fixed times	31,0	18,8	>0,05
- irregular at different times	69,0	81,2	
Last meal			
- before 8.00 pm	79,3	65,6	>0,05
- between 8.00 and 10.00 pm	20,7	34,4	
Preferred techniques of cooking			
- boiling	75,9	37,5	<0,05
- frying	24,1	62,5	
Preferred types of meat			
- poultry, fish	79,3	6,2	<0,05
- pork, beef	20,7	93,8	
Preferred fats			
-vegetable (oils, soft margarine)	68,8	17,2	<0,05
- Animals (butter, lard, pork fat)	31,2	82,8	
Frequency of vegetable and fruit consumption			
- a few times a day	0,0	0,0	<0,05
- once a day	44,8	10,8	
- a few times a week	55,2	89,2	

statistically significant between particular groups of the women from rural areas as to the daily consumption of meals, their regularity and the time when the last meal was consumed. The majority of the respondents with normal body weight (86.7 %) indicated that they consumed three and more meals a day, similarly as overweight and obese respondents (88.2 %). The majority of the women admitted that they ate irregularly and had meals at different times. Asked about the time of the last meal they most frequently said that they had supper before 8.00 pm. It is noteworthy that 34,4 % of overweight and obese women have supper between 8.00 and 10 pm. However, statistically significant differences were observed in the findings concerning dietary preferences in some foodstuffs and culinary techniques. Women with excess body weight (62.5 %) statistically significantly more often revealed that frying was the most frequent way of preparing meals; significantly more often they preferred red meat (93.8 %) and animal fats such as butter, lard and pork fat (82.8 %). Statistically significantly less frequently they ate vegetables and fruit as 89.2 % stated that they ate them only a few times a week. It is alarming that more than half the respondents with normal body weight (55.2 %) admitted they did not eat fruit and vegetables every day. What is more, none of the women consumed these products several times a day, as recommended by dietary guidelines.

DISCUSSION

Rational dietary habits are an important strategy of non-pharmacological treatment of overweight and obesity. The majority of the respondents consumed three and more meals a day, which is consistent with rational dietary principles. Yet, on average only one-fourth of the respondents consumed meals at fixed times. As shown by many studies, meals should be consumed regularly, at fixed times during the day, which facilitates gastric juice secretion. Lack of regularity has a negative influence on metabolism, leading to weight gain. Proper studies confirm *Mędrela-Kuder*'s studies findings [6].

A vast majority of the respondents had the last meal before 8.00 pm, which can be accepted as satisfactory, yet every third woman with excess body weight admitted having a late night supper, which leads to dyspepsia and certainly is one of the main causes of weight gain [2, 3]. Late consumption of the last meal may also create sleep disorder. The findings of my own studies indicated that overweight and obese respondents prefer fried dishes, red meat, and animal fats, which may explain the fact that high levels of energy derived from fat were found in those women's rations. A high intake of atherogenic saturated fatty acids and cholesterol was also observed. Such dietary habits lead to obesity; what is more, it was

found that there was a low intake of vegetables and fruit; however, such products should dominate obese women's diet. This phenomenon is alarming from an epidemiological point of view because it is the group with excess body weight. *Chalcarz* [1] in a study on obese women in Bydgoszcz, Kalisz, and Konin also found that improper dietary habits can lead to obesity. The earlier studies conducted by *Mędreła-Kuder et al* [5] also revealed that obese patients made a number of dietary mistakes, particularly connected with their preference in products which are rich in animal fats and cholesterol.

The indicated dietary mistakes made by women with abnormal body weight from rural areas show that nutrition education in rural communities should be the basic treatment strategy. As a result of comprehensive education conducted by *Wilk et al* [7] quantitative changes were observed among women when it comes to consumed products and the amount of energy coming from basic nutritional components. A change in dietary habits contributed to a consistent drop in the body weight of the respondents.

It needs to be emphasized that apart from serious somatic consequences connected with obesity, there are psychic burdens, often indicated by a number of researchers. The study by *Makara-Studzińska et al* [4] revealed that psychological consequences of obesity increase a risk for depressive and anxiety disorders. In society there is increased discrimination against overweight people, which gives rise to problems with stress and tensions.

CONCLUSIONS

1. A vast majority of overweight and obese women in rural areas prefer fried dishes, red meat and animal fats. However, they do not consume vegetables and fruit frequently enough. Such dietary habits will only increase problems with obesity in rural communities.
2. Nutrition education conducted in rural communities should be the basic strategy for non-pharmacological treatment of overweight and obesity. A change in dietary habits may contribute to weight loss, which may prevent both somatic and psychological consequences of obesity.

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