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ENERGY AND NUTRITIONAL VALUE OF DIETS USED IN PATIENTS  
ALIMENTATION AND THEIR ASSESSMENT  
BY PATIENTS OF SELECTED CLINICAL DEPARTMENT  
IN THE MILITARY MEDICAL INSTITUTE IN WARSAW

WARTOŚĆ ENERGETYCZNA I ODŻYWCZA DIET STOSOWANYCH  
W ŻYWIENIU I ICH OCENA PRZEZ PACJENTÓW  
WYBRANEGO ODDZIAŁU KLINICZNEGO  
W WOJSKOWYM INSTYTUCIE MEDYCZNYM W WARSZAWIE

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*The aim of the work was laboratory assessment of energy and nutritional value of general and light diets used in patients of selected clinical department in the Military Medical Institute in Warsaw alimentation. Meals given to patients in hospital not always fulfilled nutritional requirements. Additional consumption of supplementary products did not always meet the requirements of proper nutrition.*

**Key words:** nutrition, hospital patients, additional consumption

**Słowa kluczowe:** żywienie, pacjenci hospitalizowani, dodatkowe spożycie

## INTRODUCTION

Close relation between nutrition quality and medical treatment in hospital imposes serious obligations on the nutrition unit. These obligations may be fulfilled in a proper way including appropriate technical level in the kitchen, appropriate organisation of meals preparation and distribution and appropriate qualifications of the kitchen personnel [7].

Keeping proper nutrition principles allows keeping good health state and should be considered as integral part of the treatment during stay in hospital. Proper nutrition co-decides about therapy efficiency and recovery time. An early nutrition therapy prevents many complications threatening patients' life [6]. Dietetic nutrition is a modification of adequate nutrition taking into consideration particular recommendations of disease specific [1]. Proper nutrition of patients in hospitals should be also educational for them.

About 5 million patients stay in hospitals in Poland every year. Therefore obeying the proper nutrition principles is very important and significantly limits threat of malnutrition. It is particularly important for patients staying in hospital for a very long time [6].

The aim of the work was laboratory assessment of energy and nutritional value of general and light diets used in patients of selected clinical department in the Military Medical Institute in Warsaw alimentation. Using questionnaire method the assessment of diets was done by patients too.

## MATERIAL AND METHODS

Material for examination consisted 10 general and 10 light diets used in patients alimentation. The protein, fat, ash and dry mass content were indicated. Amount of carbohydrates and diets' energy value were assessed as well [4].

Based on analyse of 176 patients' questionnaires the assessment of used diets as ell as kind and amount of additionally eaten products was done.

## RESULTS AND DISCUSSION

Laboratory examinations of energy value of 10 samples of the general diet and 10 samples of the light diet collected in winter season showed that average energy value amounted

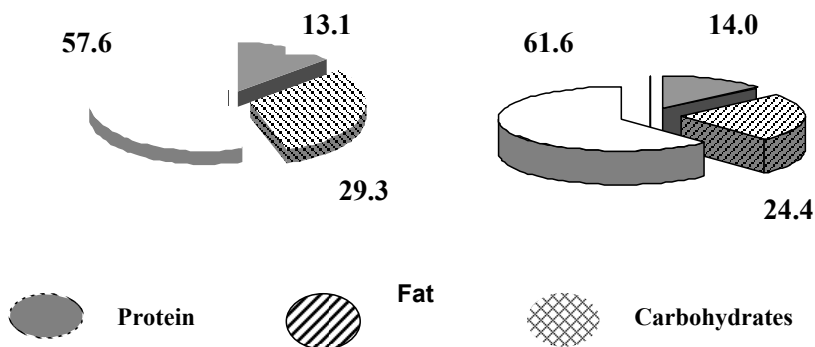


Fig. 1. Percentage participation of protein, fat and carbohydrates in the general and light diets

to 2284,9 kcal and 2038,1 kcal respectively. The general diet contained 74,8g protein, 74,5g fat and 328,8g carbohydrates. Less caloric light diet contained 71,3g protein, 55,3g fat and 313,8g carbohydrates. Protein in the general diet met 13,1%, fat 29,3% and carbohydrates 57,6% of the entire energy value. Percentage of fat in the light diet was lower (24,4%) but carbohydrates was higher (61,6%) (Fig. 1).

Researches carried out in the county and provincial hospitals in Poland in 1998 [2] showed that average energy value of the women's diets amounted to  $1591 \pm 558$  kcal and men's diets -  $1923 \pm 605$  kcal. Average participation of energy derived from protein amounted to 14,2% and 13,8%, from fat 30,9% and 29,3% and from carbohydrates 54,9% and 56,9% respectively [6]. Researches on quality of hospital nutrition showed that its energy value is close to the recommended one.

Considerable percentage of examined patients (76,9%) declared additional consumption between regular meals. There were products brought from home. Among products additionally eaten predominated juices and mineral water, yoghurts, dark bread, fruit and sweets. Researches carried out by Lubelskie Centrum Zdrowia Publicznego revealed that 40% of patients treated in hospitals had extra meals. Researches showed that breaks between meals were too long [3].

Eating food brought from home or additionally bought is common, therefore it should be believed that patients eat more than three meals daily. Researches on female patients [6] showed that 16,6% of energy came from extra food. *Jarosz et al.* [2] stated higher percentage of patients eating more. Patients ate more through buying food in the canteens (40%) or ate food brought from home (74%). The following food products were mainly eaten: fruit, vegetables, juice, mineral water, cold meat and sweets. Additional consumption met 25% of energetic norm. It should be remembered that products brought from home or bought in the canteens were not always recommended and in accordance to the proper nutrition rules.

Total of 176 patients, both men and women staying in hospital from 7 days to several weeks, took part in the questionnaire survey of hospital nutrition. The group of examined patients consisted of 49,4% of women and 50,6% of men. Most of the examined persons ate

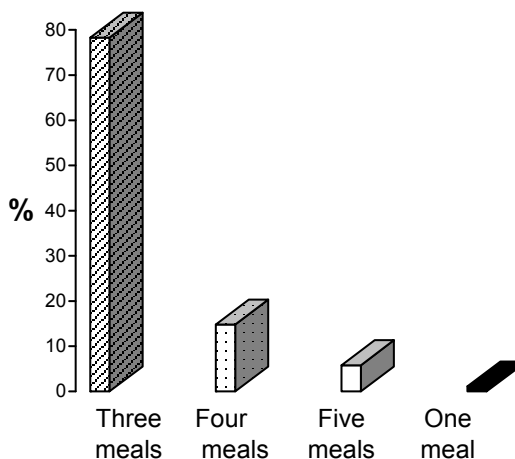


Fig. 2 Number of meals eaten by patients in hospital

three basic meals. Over 14,8% of patients ate additionally one meal and 5,8% of them two additional meals. Only 1,1% of examined men ate one meal daily (Fig. 2).

According to 56,8% of examined patients meals served in hospital met their nutrition requirements. For 43,2% of them hospital nutrition was insufficient.

The general diet was the most popular and regarded 52,9% of patients. The light diet was served to 36,3% of them, the diabetic one to 2,9% and the hepatic diet to 7,8% of hospitalised patients. It should be mentioned that more women (25,0%) than men (11,3%) were fed the light diet. Almost half of examined patients (47,1%) positively assessed the diets' variety. Rest of the examined (52,9%) claimed that diets contained too low amounts of fresh or cooked vegetables and fruits, depending on the doctor's orders.

## CONCLUSIONS

1. Energy and nutritional value of meals given to patients in hospital covered nutritional norms obligatory in military hospital.
2. More than half of examined patients said that meals served in hospital met their nutrition requirements and a half of patients appraised nutrition variety as good but at the same time claimed there was not enough fruits and vegetables.
3. Uncontrolled additional consumption of supplementary products declared 76,9% examined patients.

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#### Summary

The aim of the work was laboratory assessment of energy and nutritional value of general and light diets used in patients of selected clinical department in the Military Medical Institute in Warsaw alimentation. Using questionnaire method the assessment of diets was done by patients too. Meals given to patients in hospital not always fulfilled nutritional requirements. Additional consumption of supplementary products did not always meet the requirements of proper nutrition. Half of examined patients appraised nutrition variety as good but at the same time claimed there was not enough fruits and vegetables.

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#### Streszczenie

Celem pracy była ocena diet stosowanych w żywieniu pacjentów jednego z oddziałów klinicznych Wojskowego Instytutu Medycznego w Warszawie. Pobrane i poddane analizie laboratoryjnej 10 próbek

diety ogólnej i 10 diety lekkostrawnej w sezonie zimowym wykazały, że ich średnia wartość energetyczna wynosiła odpowiednio 2284,9 kcal i 2038,1 kcal. W diecie ogólnej białko pokrywało 13,1%, tłuszcz 29,3% a węglowodany 57,6% ogólnej wartości energetycznej. W diecie lekkostrawnej mniejszy odsetek wartości energetycznej stanowiły tłuszcze (24,4%) większy węglowodany (61,6%). Posiłki wydawane w szpitalu zaspakajały potrzeby żywieniowe 56,8% badanych. Dla pozostałych 43,2% pacjentów żywienie szpitalne było niewystarczające. Urozmaicenie diet połowa ankietowanych (47,1%) oceniła pozytywnie. Pozostałe 52,9% badanych twierdziła, że diety zawierały zbyt małe ilości warzyw i owoców w postaci surowej bądź gotowanej w zależności od wskazań lekarskich. Wartość energetyczna i odżywcza diet stosowanych w żywieniu pacjentów odpowiadała normom zalecanym w szpitalu wojskowym. Diety zaspakajały potrzeby żywieniowe ponad połowy pacjentów, oceniane były jako dobre lecz zawierały zbyt mało warzyw i owoców. Niekontrolowane dodatkowe spożycie deklarowało 76,9%

## REFERENCES

1. *Chwojnowska J., Charzewska J, Wajszczyk B., Rogalska-Niedźwiedz, Chabros E.*: Nutrition of patients in selected cardiological rehabilitation sanatoriums. *Human Nutrition Metabolism* 1998, 25, 3, 215-227 (in Polish)
2. *Jarosz B., Chabros E., Charzewska J.*: Estimation of Nutrition Manner of Hospitalized Men. *Scientific Fundamentals of Nutrition in Hospitals, IŻŻ Warsaw* 2001, 42-64 (in Polish).
3. *Kieltyka A., Narojek L., Kandefer K.*: Estimation of Hospital Nutrition Quality in Two Selected Hospitals of Different Food Rates. *Human Nutrition. Metabolism*, 2001, 28, 3, 230-242 (in Polish).
4. *Kozian B.*: How Patients are Fed?. <http://www.kurier.lubelski>
5. *Ladoński W., Gospodarek T.*: Basic analytical Methods of Food Products. PWN Warsaw 1986 (in Polish).
6. *Szponar L., Wolnicka K., Oltarzewski M.*: Estimation of Nutrition Manner of Female Patients in Province and District Hospitals. *Scientific Fundamentals of Nutrition in Hospitals. IŻŻ Warsaw*, 2001, 9-41(in Polish)
7. *Szponar L., Turlejska H., Wolnicka K. Oltarzewski M.*: Organizational-technical Status of Nutrition Units in Selected Hospitals. *Scientific Fundamentals of Nutrition in Hospitals IŻŻ Warszawa* 2001, 105-120 (in Polish).