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Diet in Polish households with incomes close to existence minimum

Żywienie w polskich gospodarstwach domowych o dochodach zbliżonych do minimum egzystencji

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S u m m a r y

Introduction. The Central Statistical Office determines the extent of material poverty in Poland and the concept of an "existence minimum" is used to identify those households and their members which are at the risk of extreme poverty. Results of an annual household budget surveys are used for this purpose.

Aim. Providing, analysing, interpreting and commenting data on the diet of the poorest segment of the Polish population.

Material and methods. Unpublished results of the household budget surveys carried out in 2010 referring to food consumption by the lowest income households were used and converted into energy and nutrients. Dietary energy content was compared with weighted average representing estimated energy requirement (EER).

Results. It was found that the energy content of the diet of the lowest income household group in Poland in 2010 covered only in some 80% estimated energy requirement. That was an evidence of undernourishment in this group and of food insecurity.

Conclusions. In view of the results of the study there is a strong possibility of undernutrition among the poorest group of the Polish households. To identify however those affected by undernutrition a special survey of nutritional habits and nutritional status is required.

Key words: existence minimum, household budget surveys, extreme poverty

S t r e s z c z e n i e

Wstęp. GUS wyznacza zakres ubóstwa materialnego w Polsce, a pojęcie „minimum egzystencji" jest używane do identyfikacji tych gospodarstw domowych i ich członków, którzy są zagrożeni ryzykiem skrajnego ubóstwa. Do tego celu wykorzystywane są coroczne badania budżetów gospodarstw domowych.

Cel. Przedstawienie, analiza, interpretacja i skomentowanie danych dotyczących diety najuboższego segmentu polskiej populacji.

Materiał i metody. Wykorzystując niepublikowane wyniki badań budżetów gospodarstw domowych w 2010 roku, dotyczące spożycia żywności przez gospodarstwa o najniższych dochodach, dokonano obliczenia energii i składników odżywczych. Zawartość energii z diety została porównana ze średnioważoną normą na energię (ang. *estimated energy requirement* – EER).

Wyniki. Zaobserwowano, że zawartość energii w dietach w gospodarstwach o najniższych dochodach w Polsce w 2010 roku pokrywa jedynie 80% normy na energię. Jest to dowód niewystarczającego spożycia żywności w tej grupie i braku bezpieczeństwa żywnościowego.

Wnioski. W świetle wyników badania istnieje wysokie prawdopodobieństwo występowania niedożywienia w najuboższej grupie polskich gospodarstw domowych. W celu identyfikacji osób dotkniętych niedożywieniem potrzebne są specjalne badania sposobu żywienia i stanu odżywienia.

Słowa kluczowe: minimum egzystencji, badania budżetów gospodarstw domowych, ubóstwo skrajne

INTRODUCTION

Central Statistical Office since the half of the 1990s regularly publishes its estimates of the extent of the risk of material poverty in Poland based on different indicators and the concept of an "existence minimum" is used to identify these households and their members

which are at the risk of extreme poverty. Existence minimum represents a normative basket of the goods and services satisfying only these needs which can't be postponed and the food needs and the housing needs dominate in this basket (1-3).

The cost of the basket is regularly calculated and presented by the Institute of Labour and Social Affairs and the current retail prices of its content are taken into account in this work. The results of the Institute's calculations refer to the two biggest, in terms of the number, socio-economic household groups in Poland, i.e. employees' households which derive their income from hired work in a private or public sector and the pensioners' households.

The cost of the existence minimum estimated for 2010 for a single person employee household amounted to 472.72 Polish zloty per month and food and housing combined covered approximately 88% of it. This cost was valued at 447.54 for a single person pensioner household and food and housing costs covered over 86% of it (4). The money value of the existence minimum varies depending on the size and the composition of the household: thus, existence minimum basket for employee household consisting of an adult man and adult woman costs 794.20 zl per month (381.88 zl per person) and this cost increases to 2069.83 zloty for a five-person employee household (413.97 zloty per person).

With respect to pensioners, the value of existence minimum for two-person household amounts to 743.83 zloty per month and corresponds to 371.91 zloty per person.

In its activities to measure the risk of the extreme poverty the Central Statistical Office utilizes results of the household budget surveys. According to its estimates, 5.7% of all household members were at this risk in 2010 and this rate didn't change since 2008 in contrary to over twofold decline in this respect between 2005 and 2008.

AIM OF THE STUDY

In view of still grossly insufficient detailed knowledge on the diet of the poorest segment of the population in Poland and anxiety about undernourishment the study aimed to provide, analyze, interpret and comment relevant data derived from household budget surveys supplemented by original authors' calculations on energy and nutrient amounts from food.

MATERIAL AND METHODS

Selected results of the household budget surveys carried out in 2010 were used. The surveys are organized and coordinated by the Central Statistical Office and conducted every year through several decades. 37.412 households participated in the surveys in 2010, i.e. approximately 0.3% of their total number (5). The fundamental aim of the surveys is to provide information on the living conditions of the population, i.e. available income, expenditures, food consumption, housing conditions and equipment of the households with durables. The above information is combined with the data on different demographic, social and economic characteristics of the households and their members. The surveys cover randomly selected sample of all households with the exception of those living in institutional households. Households of members of the diplomatic corps of foreign countries are also excluded from the surveys.

The surveys are conducted through the use of monthly rotation which means that each month different households participate in them. Each participating survey keeps a special diary for a month, where registers incomes, expenditures and food quantities purchased, obtained free or derived from individual farm, garden or business activity. The methodology used doesn't include however food quantities consumed in catering establishments, canteens, hospitals, nurseries, kindergartens, etc. These feature is common for household budget surveys in many countries and originates from the fact that expenditures on eating out of the household are intentionally underestimated (5).

Aggregated results of the surveys are presented in annual reports of the Central Statistical Office, in statistical yearbooks and in other data sources.

The National Food and Nutrition Institute has been for many years engaged in collaboration with the CSO and thus has been provided with the results of the surveys including also those which are not published (6-9). Such ones were used in the study. They included data on monthly per person food quantities available in the lowest income households, i.e. the lowest decile group in 2010 and in 2000. These data were converted into energy and nutrients through energy and nutrient conversion coefficients worked out at the Institute with the use of the national Food Composition Tables (10) and then compared with weighted average representing estimated energy requirement EER calculated for general population (11, 12).

National averages on household food consumption and on energy and nutrients amounts available for consumption per household member served as the reference points also.

RESULTS AND DISCUSSION

The lowest decile in 2010 included households with available incomes below 496 zloty per person/ /month which were thus only a bit higher than the cost of the existence minimum for a single-person employee household amounting to 472.72 zloty. In fact, however, the average available income in this decile amounted to only 289.34 zloty per person and was nearly 40% lower compared to the cost of the existence minimum.

Due to evident budget constraints, the lowest income household group was able to consume food

basket weighting 31.37 kg/month compared to 37.05 kg/month which represented the national average. Relative difference reached not less than – 15%. Negative difference in total food quantities consumed per person per month in this group resulted from lower consumption of all foods except bread, potatoes and sugar. Bread and potato consumption by the households in the lowest income decile were higher compared to the average for all households while the consumption of sugar was equal to the average (tab. 1).

The largest negative differences were observed for beef and veal, confectionery, butter, the highest quality meat products, and fruit and products.

The lowest income household group was able to consume only 2.5 kg of fruit and products per person per month, i.e. less than 60% of the average quantity for all households. Lower but still significant difference was observed for vegetable consumption.

Conversion of food quantities consumed in the lowest income households in 2010 into energy and nutrients showed that all food provided 1771 calories per person per day. This amount was quite considerably lower compared to national average (tab. 2).

Negative difference in that respect resulted from lower consumption of all energy-yielding nutrients in these households, i.e. protein, fat and carbohydrate and it is important to stress that while the negative difference for protein and fat exceeded 20% that for carbohydrate was considerably lower. Consequently, contribution of energy derived from carbohydrate was higher in the lowest income households in relation to national average. On the other hand, contribution of energy provided by fat and protein was higher in a diet representing by the average for all households.

It is interesting to note relatively small difference in the proportion of energy derived from protein between averages representing the lowest income households and their total population. This observation is consistent with the statement that "It was

Table 1. Household food consumption in the lowest income group in 2010 in relation to national average.

Monthly per person

Food products	Unit	Lowest income decile	National average	Relative difference (National average = 100) – %
Bread	kg	5.02	4.67	7.0
Pastries	kg	0.42	0.69	-64.3
Flour	kg	0.85	0.88	-3.5
Groats and flakes, rice	kg	0.34	0.41	-20.6
Pasta	kg	0.31	0.36	-16.1
Potatoes	kg	5.13	4.97	3.1
Vegetables and products	kg	3.86	5.19	-34.5
Fruit and products	kg	2.50	4.40	-76.1
Meat, offals and products	kg	4.56	5.56	-21.9
of which: meat	kg	2.49	3.09	-24.1
of which: pork	kg	1.13	1.41	-24.3
beef and veal	kg	0.06	0.16	-158.3
poultry	kg	1.29	1.52	-17.8
Meat products	kg	1.97	2.35	-19.3
of which: highest quality meat products	kg	0.38	0.66	-73.7
Fish and products	kg	0.26	0.45	-73.1
Total edible fats:	kg	1.16	1.35	-16.6
Animal fats (excl. butter)	kg	0.14	0.15	-7.1
Butter	kg	0.14	0.27	-92.9
Vegetable fats and oils	kg	0.88	0.93	-5.9
Liquid milk and milk beverages	l	3.90	4.35	-11.5
Cheese, total	kg	0.58	0.94	-62.1
Cream and creamers	kg	0.31	0.38	-22.6
Eggs	no.	10.97	12.81	-16.8
Sugar	kg	1.30	1.30	0.0
Confectionery	kg	0.22	0.39	-77.3

Source: Household Budget Surveys, 2010 (National avarages). Food consumption in the lowest income decile – unpublished results of the household budget surveys.

Table 2. Energy and macronutrients from food consumed in the lowest income households in 2010 in relation to national average.

Per person/day

Contents	Unit	Lowest income decile	National average	Relative difference (National average = 100) – %
Total calories	kcal	1771	2033	-14.8
Animal calories	kcal	516	656	-27.0
Vegetable calories	kcal	1255	1377	-9.7
Total protein	g	52.1	62.8	-20.7
Animal protein	g	31.9	41.0	-28.8
Vegetable protein	g	20.2	21.8	-7.8
Total fat	g	70.9	86.6	-22.1
Animal fat	g	39.4	50.0	-27.0
Vegetable fat	g	31.5	36.6	-16.0
Carbohydrates	g	230	249	-8.5
Calories derived from:				
Protein	%	11.9	12.6	-5.2
Fat	%	35.4	37.7	-6.4
Carbohydrate	%	52.7	49.8	5.5
Share of animal protein in total protein quantity	%	61.2	65.3	-6.8
Share of animal calories in total calories amount	%	29.1	32.2	-10.7
Share of vegetable fat in total fat amount	%	44.5	42.3	5.0

Source: original calculations based on the data from table 1 and on National Food Composition Tables.

found since before the war that in many diets the calories supplied by protein expressed in percentage of total calories (protein-calorie ratio) varies within quite narrow limits" (13). The truth of this statement was confirmed in many studies including Polish ones.

In view of the changes in the diet of the Polish households over time and reflected in the national average the authors decided to investigate whether such changes were seen also in the diet of the lowest income group. The authors' interest was particularly focused on the developments related to bread and potatoes which consumption reflected in national average quite considerably declined through the last decade.

It was found rather against authors expectations that changes in the food consumption in the lowest income households followed those observed in relation to all Polish households (tab. 3). Thus, the households in the lowest income decile consumed in 2010 lower quantities of the same food groups which consumption by the total household population was subjected to evident drop. This included bread, flour, groats, flakes and rice, potatoes, vegetables and products, fruit and products, beef and veal, all types of edible fats, liquid milk and milk beverages, cream and creamers, eggs and sugar.

At the same time, both in the lowest income household group and in the total household population a consumption increase was noted for the same foods, i.e. pastries, pasta, meat, offals and products, fish and products, cheese and confectionery.

In view of the decline in consumption of many important food groups and particularly of bread and potatoes common for the lowest income household decile and for their total population total calories amount derived from food showed quite significant decrease in the last decade (tab. 4).

This decrease resulted from lower amounts of all energy-yielding nutrients in 2010 as compared to 2000, i.e. protein, fat and carbohydrates. It was interesting to found that the extent of the decrease observed for carbohydrates was bigger in relation to protein and fat and that, rather against authors expectations, this finding applied also to the lowest income decile of the households.

A comparison of the energy available from food consumed by the poorest households in 2010 with estimated energy requirement (EER) showed that it was 20% lower. Not so significant energy deficit was observed also for all households (fig. 1, p. 952). It is important to have in mind in interpretation that the methodology of the household budget surveys doesn't include food quantities consumed away from the household (catering, canteens, etc.) and there is a strong positive relationship between income and importance of eating out.

CONCLUSIONS

Results of the household budget surveys provide valuable data on many aspects of living conditions of the population including information on the types

Table 3. Household food consumption in the lowest income group and in total households, 2010 compared to 2000 (2000 = 100).

Monthly per person

Food products	Lowest income decile 2010 (2000 = 100) – %	Total households 2010 (2000 = 100) – %
Bread	-31.2	-34.9
Pastries	55.6	32.7
Flour	-32.5	-26.7
Groats and flakes rice	-5.6	-14.6
Pasta	14.8	12.5
Potatoes	-31.7	-36.8
Vegetables and products	-11.3	-6.5
Fruit and products	-8.4	-8.9
Meat offals and products	5.6	1.6
of which: meat	1.2	0.7
of which: pork	10.8	18.1
beef and veal	-53.8	-53.0
poultry	25.2	13.4
Meat products	11.9	4.0
of which: highest quality meat products	111.1	50.0
Fish and products	4.0	4.7
Total edible fats:	-15.1	-13.2
Animal fats (excl. butter)	-50.0	-34.8
Butter	-12.5	-12.9
Vegetable fats and oils	-4.9	-8.4
Liquid milk and milk beverages	-31.7	-26.9
Cheese. total	11.5	13.3
Cream and creamers	-26.2	-17.4
Eggs	-10.0	-12.4
Sugar	-21.2	-27.8
Confectionery	37.5	34.5

Source: Household Budget Surveys, 2000 and 2010 (National averages). Unpublished results of the household budget surveys on the lowest income decile.

and quantities of food consumed per month per household member. They are carried every year with the use of the same methodology and thus their results are comparable over time. These results are presented by many demographic, social and economic variables showing diversification of living conditions including diversification of the diets and income level is among fundamental factors determining the level and structure of the diet.

Table 4. Energy and macronutrients from food consumed in the lowest income group and in total households, 2010 compared to 2000 (2000 = 100).

Per person/day

Contents	Lowest income decile 2010 (2000 = 100) – %	Total households 2010 (2000 = 100) – %
Total calories	-15.2	-13.5
Animal calories	-11.8	-8.2
Vegetable calories	-16.5	-15.8
Total protein	-10.6	-9.4
Animal protein	-0.8	-1.7
Vegetable protein	-22.6	-21.2
Total fat	-8.7	-6.8
Animal fat	-13.9	-9.7
Vegetable fat	-1.3	-2.5
Carbohydrates	-19.7	-18.9
Calories derived from:		
Protein	5.3	4.7
Fat	7.6	7.8
Carbohydrate	-5.4	-6.2
Share of animal protein in total protein quantity	10.9	8.7
Share of animal calories in total calories amount	4.0	5.9
Share of vegetable fat in total fat amount	8.2	4.7

Source: Original calculations on energy and nutrients from food.

Low income is predominant cause of undernourishment, i.e. energy deficit in the diet in relation to recommended level shown with respect to lowest income households and thus documenting that these households are food insecure (14-19). It is important to stress that the members of the households classified as being in the extreme poverty sphere amounted in 2010 approx. 6% of the total members of all individual households in Poland.

A question arises, however why despite low incomes, the household group observed declined consumption of such foods like bread and some other related products, and potatoes which traditionally constituted less expensive energy sources. The answer should be looked for and a field for nutrition education is evident also.

Unfortunately, the type of the data used does not offer the possibility to show the extent of undernutrition which is probable in the group of the poorest households. It would require a special survey of nutritional habits and nutritional status like the ones carried out in Poland in 2000 and 2003-2005 (20, 21).

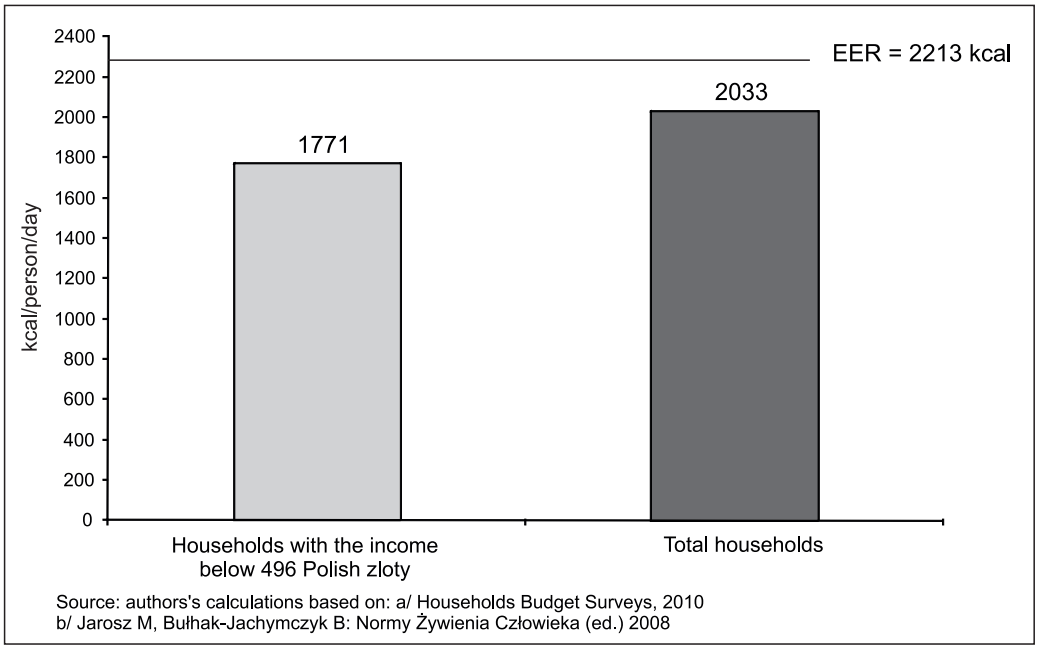

Fig. 1. Food energy in the lowest income household groups and in all households in relation to the estimated energy requirement (EER) in 2010.

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received/otrzymano: 26.09.2012
accepted/zaakceptowano: 31.10.2012

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