PLACE OF RESIDENCE AFFECTS FOOD PREFERENCES AND SATISFACTION WITH DIET AMONG THE ELDERLY

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Abstract
The study was conducted to determine specific differences in food preferences and satisfaction with diet between elderly people leading independent lives and those living in Social Welfare Homes. The studied group included 100 people. The participants were shown photographs of 22 types of dishes. They fulfilled the questionnaire about frequency and pleasure delivered from eating those dishes. Studies have shown that food preferences and satisfaction with diet among people over the age of 60 are highly dependent on their place of residence. Supervision and frequent inspections are needed to regulate nutrition in Social Welfare Homes in Poland.

Key words: *Social Welfare Homes, the elderly, food preferences, frequency of eating*

Introduction

Proper living conditions, an adequate diet and healthcare are among the most important factors influencing longevity. An aging population is a phenomenon that occurs commonly in developed countries (Wadolowska, Danowska-Oziewicz, Stewart-Knox, & de Almeida, 2009; Kant, 2004). The aging population in Poland is a rapidly growing problem. According to the data from 2012, the percentage of people aged over 65 years was 17.8%. Based on estimations, in 2030 the percentage will reach 19.11% (Central Statistical Office, 2012). An older society leads to multiple health problems. The more varied the diet, the better the nutritional benefits. A less varied diet increases the risk of malnutrition (Niedzwiedzka, & Wadolowska, 2010). Thus, a proper diet may help to reduce mortality and improve the comfort of living among older people. Scientists confirmed that eating smaller portions but a higher number of meals per day with proper supplementation extended life. Another important factor was the quality of the food eaten. Mortality was lower among people whose diet consisted of more fruit and vegetables rich in β-carotene, fats such as olive oil, other oils, margarine, and eggs (Slowinska, Kaluza, Brzozowska, Roszkowski, & Wadolowska, 2009).

Food preference studies have been conducted in order to determine the nutrition of selected groups of population (Zielke, Kostrzewa-Tarnowska, 2001). Research on food choices helps optimize dietary intake and develop nutritional guidelines, which are particularly important given the significant correlation between a person's diet and their health (Maitre, Van Wymelbeke, Amand, Vigneau, Issanchou, & Sulmont-Rossé, 2014).

A food preference in general refers to choosing one food item over another (Rozin & Vollmecke, 1986). Socioeconomic status, environment, eating behaviors, physiological and psychological conditions, and even medical treatments can all affect appetite and food choices. Taste perception also has a huge influence on dietary preferences. Perceiving taste is not exactly the same for all people. The density of taste papillae and the sensitivity of receptors in taste buds are both affected by genetic factors (Grimm & Steinle, 2011). Another important

factor influencing the perception of taste is aging. Physiologically, the number of taste papillae and saliva volume decrease with age, often causing Xerostomia. Consequently, taste sensitivity is lower (Camacho-Alonso, López-Jornet, & Molino-Pagán, 2012). Food intake is regulated by the pleasure of eating. Dietary satisfaction lowers the desire to eat, which is important in obesity and other diet-related conditions (Lovell-Smith, Kenealy, & Buetow, 2010). People over 65 years old are highly vulnerable to complications associated with various diseases. Generally, the elderly in Poland live alone, with a spouse, or with their families, but a large group of elderly people live in Social Welfare Homes. In 2011 in Poland there were 412 such homes with 19,655 residents (Central Statistical Office, 2012). Due to the aging population, the number of people needing help from Social Welfare Homes will grow each year.

The aim of the study was to determine specific differences in food preferences and satisfaction with diet between elderly Polish people leading independent lives and those living in Social Welfare Homes.

Research Objectives:

1. To define food preferences among the elderly living in Social Welfare Homes and those leading independent lives.
2. To compare the frequency of eating different groups of products among the elderly living in Social Welfare Homes and those leading independent lives.
3. To compare the frequency of the desire to eat different groups of products among the elderly living in Social Welfare Homes and those leading independent lives.
4. To compare the actual frequency of eating and the frequency of the desire to eat different groups of products among the elderly living in Social Welfare Homes.
5. To compare the actual frequency of eating and the frequency of the desire to eat different groups of products among the elderly leading independent lives.

Research Subject:

Changes in food preferences and satisfaction with diet depending on place of residence.

Methods

Respondents. The study group consisting of 100 people (63 women and 37 men), aged over 60, was divided into two groups. The SWH group consisted of 40 residents living in a Social Welfare Home in the Silesia region of Poland (aged 6196 years, 25 women and 15 men, 8 on a diabetic diet, on average the time spent in the SWH was six years, the longest period was 17 years). The C group – the control group – consisted of 60 elderly people leading independent lives in the Silesia region of Poland (aged 6190, 38 women and 22 men, 9 on a diabetic diet).

The participation was voluntary and anonymous.

Pleasure Derived from Eating. The research instrument was a questionnaire. The participants were shown color photographs of 22 types of dishes. The first group included high-protein dishes and dairy products i.e. fish dishes, egg dishes, milk drinks, milk soup, cheese, beef and pork, sausages and ham, poultry, fast food, seafood. The second one included dishes with one predominant taste: sweet desserts, chocolate, candies and jellybeans, salty products, sour products, spicy dishes. Other products including dumplings, pasta, bread, soup, vegetables, salad, and fruit formed the third group: vegetarian dishes, flour-based dishes and soup.

Each person had to answer the following question: How tempting does the dish shown in the photograph appear to you? The respondents recorded their answers for each of 22 types of food on separate sheets using a 10-cm linear analogue scale with the starting point marked ”0” (lack of pleasure) and the end point “10” (maximum pleasure).

The actual frequency of eating and the frequency of the desire to eat were determined by marking one of the following answers: “never”, “very seldom”, “seldom”, “often”, “very often”.

Data Analysis. The questionnaires which were left blank and those completed incorrectly were not used in the study. The questionnaire data were entered into a Microsoft Excel

2010 database. Subsequently, the collected data were statistically analyzed. The analyses were performed using Statistica 10.0 software. The Mann-Whitney U test was used to compare the self-reported pleasure derived from eating food in the case of the SWH residents and the control group. The significance of the statistical relationship between the actual frequency of eating food and the frequency of their desire to eat among the SWH residents and the control group was tested by means of the Chi2 test.

Results

In both groups the respondents declared pleasure derived from eating was the greatest in the case of fruit and sweet desserts. Seafood, fast food and spicy dishes were described as the least enjoyable. Beef and pork ($p<0.05$), sausages and ham ($p<0.05$), salty products ($p<0.05$), dumplings ($p<0.05$) and bread ($p<0.001$) were more frequently consumed by the SWH residents than the control group. In the SWH group, poultry was described as less enjoyable. See Table 1.

Table 1. Pleasure derived from eating in the SWH group and the C group (Me-median; Q1-first quartile; Q3- third quartile)

	Dishes	Group SWH			Group C			p-value SWH vs C
	Me	Q1	Q3	Me	Q1	Q3		
High-protein dishes and dairy products	**Egg dishes**	8,0	5,0	10,0	8,0	5,0	10,0	ns
	Beef and pork	10,0	7,0	10,0	8,0	5,5	10,0	p<0.05
	Sausages and ham	10,0	5,0	10,0	7,8	5,0	9,5	p<0.05
	Poultry	6,0	3,5	10,0	9,0	7,0	10,0	p<0.05
	Fast food	**2,0**	**0,0**	**5,0**	**2,0**	**0,0**	**5,0**	**ns**
	Fish dishes	8,0	5,0	10,0	9,0	6,0	10,0	ns
	Seafood	**0,0**	**0,0**	**1,0**	**0,0**	**0,0**	**0,0**	**ns**
	Milk drinks	9,5	6,0	10,0	8,0	5,0	10,0	ns
	Milk soup	8,5	0,0	10,0	4,5	2,0	8,0	ns
	Cheese	5,0	2,0	10,0	8,0	5,0	10,0	ns
Dishes with one predominant taste	**Sweet desserts**	**10,0**	**8,5**	**10,0**	**10,0**	**7,0**	**10,0**	**ns**
	Chocolate	10,0	5,5	10,0	8,0	5,0	10,0	ns
	Candies, jellybeans	5,0	3,0	7,5	5,0	4,0	7,5	ns
	Sour products	10,0	5,0	10,0	8,0	5,0	10,0	ns
	Salty products	5,0	3,0	10,0	4,0	1,0	7,0	p<0.05
	Spicy dishes	**0,0**	**0,0**	**5,0**	**2,0**	**0,0**	**4,0**	**ns**
Vegetarian dishes ,flour-based dishes and soup	**Fruit**	**10,0**	**8,0**	**10,0**	**10,0**	**8,0**	**10,0**	**ns**
	Vegetables and salads	9,0	6,0	10,0	9,0	6,5	10,0	ns
	Dumplings	10,0	7,0	10,0	8,0	5,0	10,0	p<0.05
	Pasta	5,0	2,5	8,0	5,2	4,0	8,0	ns
	Bread	10,0	10,0	10,0	10,0	8,0	10,0	p<0.001
	Soup	10,0	7,0	10,0	9,0	6,5	10,0	ns

Some of the respondents did not recognize certain dishes. In the SWH Group three people (8%) declared they were unfamiliar with fast food meals, while there was one such person in the C group. 16 people (40%) among the SWH residents and 16 respondents (27%) among the controls did not recognize seafood.

The actual frequency of eating beef and pork ($p=0.056$), poultry ($p<0.001$), fish dishes ($p<0.001$), milk drinks ($p<0.05$) and cheese ($p<0.001$) was lower in the SWH group. The only higher result in the SWH group compared to the control group was the actual frequency of eating milk soup ($p<0.01$). See Table 2.

The frequency of the desire to eat egg dishes ($p<0.01$), beef and pork ($p<0.001$), sausages and ham ($p<0.05$), fast food ($p<0.01$) and milk soup ($p<0.01$) was higher among the SWH residents. The only lower result in the SWH group compared to the control group was the frequency of the desire to eat cheese ($p<0.05$). See Table 2.

In the SWH group the actual frequency of eating egg dishes ($p<0.001$), beef and pork ($p<0.001$), sausages and ham ($p<0.01$), poultry ($p<0.01$), fish dishes ($p<0.001$) and milk drinks ($p<0.001$) was significantly lower than the desire to eat them, while in the control group there were no significant differences between the actual (A) and the desired (D) levels of frequency of eating high-protein dishes and dairy products. See Table 2.

Table 2. Percentage of the respondents declaring how often they ate high-protein dishes and dairy products (A) and how often they would like to eat these products (D) in the SWH group and the C group

High-protein dishes and dairy products	Level of frequency	Group SWH frequency of eating [%]					p-value A vs D	Group C frequency of eating [%]					p-value A vs D	p-value SWH vs C
		never	very seldom	seldom	often	very often		never	very seldom	seldom	often	very often		
Egg dishes	**A**	5	5	55	33	3	p<0.001	0	2	47	38	13	ns	ns
	D	10	0	18	38	35		0	7	40	33	20		p<0.01
Beef and pork	**A**	3	13	63	20	3	p<0.001	3	8	37	42	10	ns	p=0.056
	D	0	0	15	33	53		3	3	27	53	13		p<0.001
Sausages and ham	**A**	5	10	28	50	8	p<0.01	2	5	32	45	17	ns	ns
	D	8	3	13	33	45		0	5	25	47	23		p<0.05
Poultry	**A**	3	10	53	33	3	p<0.01	0	3	17	60	20	ns	p<0.001
	D	3	10	18	43	28		2	8	12	53	25		ns
Fast food	**A**	63	23	8	3	5	ns	40	47	10	0	2	ns	ns
	D	48	15	15	8	15		43	42	12	0	2		p<0.01
Fish dishes	**A**	3	15	73	8	3	p<0.001	3	2	37	40	18	ns	p<0.001
	D	5	8	30	18	40		2	5	18	43	32		ns
Seafood	**A**	98	3	0	0	0	ns	90	5	3	0	0	ns	ns
	D	85	5	5	0	5		90	2	5	2	0		ns
Milk drinks	**A**	3	15	48	30	5	p<0.001	0	7	32	38	23	ns	p<0.05
	D	5	8	10	40	38		0	3	27	43	27		ns
Milk soup	**A**	38	8	13	28	15	ns	20	30	28	13	8	ns	p<0.01
	D	30	3	5	28	35		27	18	25	17	13		p<0.01
Cheese	**A**	13	13	45	28	3	ns	5	3	18	45	28	ns	p<0.001
	D	18	13	20	33	18		5	2	17	42	35		p<0.05

The SWH residents, compared with the control group, declared a lower actual frequency of eating sweet desserts ($p<0.001$), chocolate ($p<0.05$), candies, jellybeans ($p<0.01$), sour products ($p<0.01$) and spicy dishes ($p<0.01$). At the same time they declared a higher desired frequency of eating sweet desserts ($p<0.05$), chocolate ($p<0.01$), salty products ($p<0.05$) and spicy dishes ($p<0.001$). See Table 3.

The actual level of frequency was lower than the desired level of frequency for sweet desserts ($p<0.001$), chocolate ($p<0.01$), candies, jellybeans ($p<0.05$) and sour products ($p<0.001$) in the SWH Group. The same result was demonstrated for sweet desserts ($p<0.05$) and chocolate ($p=0.052$) among the control group. See Table 3.

Table 3. Percentage of the respondents declaring how often they ate dishes with one predominant taste (A) and how often they would like to eat these products (D) in the SWH group and the C group

Dishes with one predominant taste	Level of frequency	Group SWH frequency of eating [%]					p-value A vs D	Group C frequency of eating [%]					p-value A vs D	p-value SWH vs C
		never	very seldom	seldom	often	Very often		never	very seldom	seldom	often	very often		
Sweet desserts	**A**	13	33	33	15	8	p<0.001	0	12	27	37	25	p<0.05	p<0.001
	D	3	0	10	13	75		0	5	10	38	47		p<0.05
Chocolate	**A**	18	18	33	15	18	p<0.01	2	8	50	27	13	p=0.052	p<0.05
	D	5	0	23	18	55		0	3	30	42	25		p<0.01
Candies, jellybeans	**A**	28	30	30	8	5	p<0.05	3	22	48	25	2	ns	p<0.01
	D	18	5	43	20	15		3	15	45	27	10		ns
Sour products	**A**	8	30	40	23	0	p<0.001	5	10	32	42	12	ns	p<0.01
	D	10	8	23	30	30		5	8	30	42	15		ns
Salty products	**A**	18	23	35	13	13	ns	25	25	30	13	5	ns	ns
	D	15	10	33	15	28		20	27	30	17	5		p<0.05
Spicy dishes	**A**	70	18	5	8	0	ns	40	32	25	2	0	ns	p<0.01
	D	58	10	5	15	13		43	30	15	10	0		p<0.001

The respondents in the SWH group compared to the C group declared a lower frequency of eating fruit ($p < 0.05$), vegetables and salad ($p < 0.01$). The desired frequency to eat fruit ($p < 0.05$) and dumplings ($p < 0.05$) in the SWH group was higher than in the C group. See Table 4.

The actual frequency of eating fruit ($p < 0.001$), vegetables and salad ($p < 0.001$), dumplings ($p < 0.001$) and soup ($p < 0.05$) was significantly lower than the desired frequency of eating them in the SWH group. In the C group there were no significant differences between the actual (A) and desired (D) frequencies of consumption of all vegetarian dishes, flour-based dishes and soup. See Table 4.

Table 4. Percentage of the respondents declaring how often they ate vegetarian dishes, flour-based dishes and soups (A) and how often they would like to eat these products (D) in the SWH group and the C group

Vegetarian dishes, flour-based dishes and soup	Level of frequency	Group SWH frequency of eating [%]					p-value A vs D	Group C frequency of eating [%]					p-value A vs D	p-value SWH vs C
		never	very seldom	seldom	often	very often		never	very seldom	seldom	often	very often		
Fruit	**A**	3	5	40	40	13	p<0.001	0	2	22	42	35	ns	p<0.05
	D	3	0	8	25	65		0	0	17	43	40		p<0.05
Vegetables and salads	**A**	0	25	33	38	5	p<0.001	2	3	23	45	27	ns	p<0.01
	D	5	3	15	43	35		0	3	17	45	35		ns
Dumplings	**A**	0	15	53	30	3	p<0.001	3	10	36	38	12	ns	ns
	D	0	0	13	38	50		3	12	22	41	22		p<0.05

Vegetarian dishes, flour-based dishes and soup	Level of frequency	Group SWH frequency of eating [%]					p-value A vs D	Group C frequency of eating [%]					p-value A vs D	p-value SWH vs C
		never	very seldom	seldom	often	very often		never	very seldom	seldom	often	very often		
Pasta	A	13	13	53	23	0	ns	8	17	34	32	8	ns	ns
	D	25	5	33	28	10		10	15	30	33	12		ns
Bread	A	3	3	5	25	65	ns	0	5	5	33	57	ns	ns
	D	3	0	0	23	75		3	0	7	32	58		ns
Soup	A	0	8	35	45	13	p<0.05	2	5	17	55	22	ns	ns
	D	3	8	8	45	38		2	3	13	57	25		ns

Discussion

Proper nutrition is hampered in the elderly. There are social changes which may cause undernourishment such as social isolation or poverty. Older people may have economical and even psychological problems which discourage them from eating properly. Usually, eating is less enjoyable for them than it used to be in the past. But the most important factors causing malnutrition are physiological: slower gastric emptying, impaired intestinal function, increasingly weaker senses of taste and smell, dementia, Alzheimer disease, dental problems among others (Nieuwenhuizen, Weenen, Rigby, & Hetherington, 2010). The consequences of improper eating habits among people over 60 years of age may not only be malnutrition but also an increase in the incidence of illnesses such as: obesity, atherosclerosis, and diabetes. In recent years, the issue has attracted more attention due to socio-demographic changes and greater concern about quality of life in old age (Wadolowska, Danowska-Oziewicz, Stewart-Knox, & de Almeida, 2009; Kant, 2004; Nieuwenhuizen, Weenen, Rigby, & Hetherington, 2010).

In this study both the SWH respondents and the control group marked fruit and desserts as the most enjoyable. Such products contain simple sugars, which are processed quickly in the stomach and do not cause any problems with the digestive system. Furthermore, chewing may be highly problematic for older people and desserts are usually easy to chew (Lexomboon, Trulsson, Wårdh, & Parker, 2012). Moreover, food high in fat or sugar stimulates endorphin secretion, which leads to a feeling of satisfaction. This effect may be perceived as a reward, leading to positive emotions and a feeling of well-being (Jacquier, Bonthoux, Baciu, & Ruffieux, 2012). The choice of sweet food by the elderly may also have a physiological background. Taste sensitivity decreases with age. There are changes in taste recognition threshold and intensity. However, some surveys have showed that sweet taste sensitivity does not decrease with age. A study by Yamauchi with 670 participants between the ages of 20 and 90 found that salty, bitter and sour thresholds to be significantly higher, whereas sweet thresholds were not affected by age (Yamauchi, Endo, & Yoshimura, 2002). Moreover, six out of nine studies concerning sucrose demonstrated that the intensity of sweet taste sensation does not diminish with age (Methven, Allen, Withers, & Gosney, 2012).

Further findings showed that both the SWH residents and the people living in their homes described seafood, spicy foods and fast food as the least tasty. Moreover, seafood and fast food meals were unknown to some of the respondents. About 8% of the SWH residents were unfamiliar with fast food, while there was one such person in the C group. 16 people among the SWH residents and 16 people among the control group did not recognize seafood. The results obtained in this study corresponded with the results of a Knorr report (Knorr, 2005). The report

characterized different groups of Polish attitudes towards nutrition and presented a sociological portrait of each group. Older people in Poland are mostly traditionalists, who value traditional Polish cuisine and distance themselves from the cuisine of other nations. Younger people are willing to explore new flavors (Knorr, 2005). Seafood is a major component of Mediterranean cuisine while fast food comes from the U.S. This explains such a low acceptance of these types of food by older people. There is a term in psychology, which refers to a tendency to avoid new things – neophobia. According to Rozin and Vollmecke the mechanism developed to protect humans from consuming toxic food (Rozin & Vollmecke, 1986). Scientists showed that the elderly in Finland (66–80 years) were more neophobic than other age groups. The people with strong food neophobia were less likely to have tasted or eaten the given foods than those with weak food neophobia (Tuorila, Lähteenmäki, Pohjalainen, & Lotti, 2001). Researchers measured two large commercial samples of US consumers on a 5-point Food Neophobia Scale. The result was similar. Neophobia appeared to increase with age (Meiselman, King, & Gillette, 2010). This tendency seems to be alarming. Elderly people remember the flavors of their youth. Products, methods of cooking and serving food were different in the past. Older people tend to idealize their childhood. And therefore can refuse modern-day foods in general.

People living in the Social Welfare Home derived more pleasure from eating beef and pork, sausages and ham, salty products, dumplings and bread than people living in their own homes. Only poultry was consumed with less pleasure in the SWH group compared with the control group. The taste of food has a huge influence on the development and consolidation of food preferences. Perhaps while they were in the Social Welfare Home, the elderly may have found these products very tasty and therefore derived pleasure from eating them. The differences in food preferences between both groups may also have other explanations. Visual stimuli are important in the perception of taste sensations (Van der Laan, De Ridder, Viergever, & Smeets, 2012). In welfare homes meals are served in a canteen on regular plates, with no special garnish. At home, especially during family celebrations and social gatherings, meals are often served in an esthetic way. The pictures of dishes used in this survey were also esthetically appealing. Consequently, the SWH residents may have rated them higher. It is of immense significance for food preferences that many of these given dishes are consumed less frequently in Social Welfare Homes than at home.

The differences in the frequency of consumption of 3 product groups between SWH residents and the elderly living with their families (DR group): fish and fish products, meat and its products, and milk and dairy products were examined. The frequency of eating most of them was statistically dependent on the residence (Gorecka, Czarnocinska, & Owczarzak, 2011). In our research, different groups of products were examined. We wanted to broaden the scope of the previous studies.

The frequency of eating 12 out of 22 groups of products in the Social Welfare Home was lower than in the control group. The SWH residents ate beef and pork, poultry, fish dishes, milk drinks, cheese, sweet desserts, chocolate, candies and jellybeans, spicy dishes, fruit and vegetables less frequently than the elderly leading independent lives. The only product eaten more often by the SWH residents was milk soup. The lower frequency of eating sweet desserts, chocolate, candies and jellybeans among the SWH residents should be considered as a positive thing. Such products with a high glycemic index, simple sugars and high energy value may cause insulin resistance, diabetes, obesity and metabolic syndrome (Kunachowicz, Czarnowska-Misztal, & Turlejska, 2010). However, deficiencies in other products in an everyday diet among the SWH residents may cause severe health problems. Eating beef, pork and poultry too seldom is destructive to your muscles and blood components. Meat is the main protein source. A diet low in fish dishes with unsaturated fatty acids and milk drinks or cheese containing calcium may cause osteoporosis (Kunachowicz, Czarnowska-Misztal, & Turlejska,

2010). The more varied the diet, the higher the possibility that it contains all necessary nutrients (Niedzwiedzka & Wadolowska, 2010). Fortunately, the SWH residents declared eating milk soup quite often. This may compensate for the calcium deficiency due to the lack of such products as kefir, eggs, yogurt and cheese. Adverse effects on hair, eyes, skin and intestines are produced by low consumption of fruit and vegetables which contain fiber, vitamins, pectin and antioxidants (Niedzwiedzka & Wadolowska, 2010). The results obtained in the present study, showing the frequency of consumption of specific food products among the elderly, are consistent with similar research. Humańska & Kędziora-Kornatowska (2009) analyzed 100 diets of elderly people and the relationship with their place of residence. The study showed that the respondents living with relatives were well-nourished but the pensioners living in nursing homes were at a risk of malnutrition. Grochowska-Niedworok et al (2012) studied residents from four randomly selected Welfare Centers in Silesia. The research found that the dishes exceeded norms of calorie and fat intake and there was a low amount of fiber in the diets of the elderly. The same tendencies are observed in many Polish regions (Grochowska-Niedworok, Calyniuk, Szczepanska, Muc-Wierzgon, Dul, Kiciak, Bielaszka, Kardas, & Stolarczyk, 2012).

The differences between the actual frequency and the desired frequency of food consumption demonstrate problems with proper nutrition among the Social Welfare Home's residents. The actual frequency of eating egg dishes, beef and pork, sausages and ham, poultry, fish dishes, milk drinks, sweet desserts, chocolate, candies and jellybeans, sour products, fruit, vegetables and salad was lower than the desired level of frequency. In comparison, in the control group the actual level of frequency of eating was lower than desired level only for sweet desserts and chocolate. Probably this is a result of a greater concern about health. However, in the SWH group the differences between the actual and desired levels of food consumption may have other causes. Insufficient money is spent on Social Welfare Homes' residents in Poland. That causes problems with providing proper living conditions, adequate nutrition and appropriate healthcare. Canteens prepare meals for everybody. Food preparation based on individual food preferences is not feasible. Shopping or eating in restaurants is sometimes not possible for the elderly who have health-related and financial problems. It is important that residents find their food pleasant and tasty. Refusal of food is common in Social Welfare Homes. Therefore, the elderly are at a risk of malnutrition.

Constant, precise monitoring of the situation in this respect is an important public health issue all over the world. It is necessary to set up plans and educate Social Welfare Homes' staff and residents about nutrition. Another possible solution is to develop food intake guidelines. They would provide a broader view of the type and the amount of food consumed, as well as the relationship between diet, nutrition, diseases and mortality (Niedzwiedzka & Wadolowska, 2010; Hu, 2002).

Conclusions:

1. The Social Welfare Home residents and people living independently declared the greatest pleasure from eating fruit and sweet desserts while seafood, fast food, and spicy dishes as the least enjoyable. Beef and pork, sausages and ham, salty products, dumplings and bread were more pleasurable consumed by Social Welfare Home residents than by people living independently. In contrast, in the Social Welfare Home residents group poultry meat was described as less pleasurable.
2. The frequency of eating 12 out of 22 types of dishes in the Social Welfare Home residents group was lower than in the living independently group.
3. Desire frequency of eating 5 out of 22 types of dishes was higher among Social Welfare Home residence. The only lower result in Social Welfare Home residents compared with living independently was desire frequency of eating cheese.

4. The actual frequency of eating 12 out of 22 types of the products in the Social Welfare Home residence group was lower than the frequency of the respondents' desire to eat these products.
5. Among elderly living independently the actual frequency of eating was lower than the desired frequency only in the case of sweet desserts and chocolate.

Food preferences and satisfaction with diet among people over the age of 60 are highly dependent on their place of residence. Social Welfare Homes' residents are highly dissatisfied with their diets. Proper supervision and frequent inspections are needed to regulate nutrition in Social Welfare Homes in Poland. Nutritionists should focus on providing food based on the needs and preferences of each individual.

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PLACE OF RESIDENCE AFFECTS FOOD PREFERENCES AND SATISFACTION WITH DIET AMONG THE ELDERLY

Summary

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The aging population in Poland and many others European countries is a rapidly growing problem. An older society leads to multiple health problems. The more varied the diet, the better the nutritional benefits. A less varied diet increases the risk of malnutrition. A proper diet may help to reduce mortality and improve the comfort of living among older people. Generally, the elderly in Poland live alone, with a spouse, or with their families. But due to difficulties of home care, the elderly become social welfare homes residents very often. Nutrition in such facilities should be an issue of concern. Food preference studies have been conducted in order to determine the nutrition of selected groups of population. Research on food choices helps optimize dietary intake and develop nutritional guidelines, which are particularly important given the significant correlation between a person's diet and their health.

The aim of the study was to determine specific differences in food preferences and satisfaction with diet between elderly Polish people leading independent lives and those living in Social Welfare Homes.

The studied group included 100 people, 63 women 37 men, aged 6196 years. 40 people (group SWH) were living in Social Welfare Home. 60 people (group C) were leading independent lives in Silesia region of Poland. The research instrument was a questionnaire. The participants were shown

color photographs of 22 types of dishes. The first group included high-protein dishes and dairy products i.e. fish dishes, egg dishes, milk drinks, milk soup, cheese, beef and pork, sausages and ham, poultry, fast food, seafood. The second one included dishes with one predominant taste: sweet desserts, chocolate, candies and jellybeans, salty products, sour products, spicy dishes. Other products including dumplings, pasta, bread, soup, vegetables, salad, and fruit formed the third group: vegetarian dishes, flour-based dishes and soup. Each person had to answer the following question: How tempting does the dish shown in the photograph appear to you? The respondents recorded their answers for each of 22 types of food on separate sheets using a 10-cm linear analogue scale with the starting point marked ”0” (lack of pleasure) and the end point “10” (maximum pleasure). The actual frequency of eating and the frequency of the desire to eat were determined by marking one of the following answers: “never”, “very seldom”, “seldom”, “often”, “very often”. The questionnaires which were left blank and those completed incorrectly were not used in the study.

Both groups declared the greatest pleasure from eating fruit and sweet desserts while seafood, fast food, and spicy dishes as the least enjoyable. The frequency of eating 12 out of 22 types of dishes in the SWH group was lower than in the control group. The actual frequency of eating 12 out of 22 types of the products in the SWH group was lower than the frequency of the respondents’ desire to eat these products. In the C group the actual frequency of eating was lower than the desired frequency only in the case of sweet desserts and chocolate.

Food preferences and satisfaction with diet among people over the age of 60 are highly dependent on their place of residence. Social Welfare Homes’ residents are highly dissatisfied with their diets. Proper supervision and frequent inspections are needed to regulate nutrition in Social Welfare Homes in Poland. Nutritionists should focus on providing food based on the needs and preferences of each individual.