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## **ELDERLY PEOPLE'S PERCEPTION OF NEW AND CONVENIENCE FOODS WITH HEALTH BENEFITS**

Key words: elderly people, dietary conduct, dietary preferences, convenience food products

**ABSTRACT.** Attitudes with regard to food are good predictors of behavior and a good knowledge of it plays an important part in dietary education according to different groups of the population especially high-risk groups lacking nutrients. An evaluation of attitudes of persons aged 65+ with regard to new and unknown food as well as the acquaintance and degree of approval presented in examining convenience products with health-focused properties was the main aim of the research. The level of neophobia of dietary practices in terms of the examined group of women was lower comparing to the level in men. Consumption and/or the desire for trying out new, unknown food of a high nutritional value by the group of seniors aged 60+ is beneficial and can be used to popularize health-focused dietary practices in this population group. Therefore, taking educational actions by producers of convenience food with health-focused properties is vital and should be aimed at propagating a health-focused model of eating in circles of elderly people. Such undertakings should be based on quality features of the product, the need for rational trophism and the influence of bioactive elements on health.

### **INTRODUCTION**

The market of food- both in Poland and the world-belongs to one of the most innovative sections. Producing food of increased quality, increased nutritional value and with health-focused advantages is imperative for producers [Gutkowska et al. 2015, Nowak et al. 2018, Jeznach et al. 2018]. It forces producers to release new, health- focused food products on the market [Nowak et al. 2018]. New foodstuff is “(...) an original, modified or improved product, which is a novelty from the point of view of the enterprise launching it onto the market or, from the point of view of the consumer, irrespective of whether it is a success or suffers a market defeat” [Sojkin et al. 2009]. Lilianna Nowak and others [2018] stated that new health-focused products can meet the interest of consumers and be a market success. However, in the strategy of marketing communication towards innovative food, one issue should be avoided – expressions such as “enriched” and “improved”, and it is necessary to exhibit the benefits naturalness, the local nature of the product and less processed foods [Gutkowska et al. 2015, Bortnowska 2014].

The population of elderly persons is increasing both in developed countries as well as developing ones, including Poland. It is posing a challenge and an opportunity for

the food industry [Jędrusek-Golińska et al. 2018]. Producers of food realize the needs of elderly consumers but, so far, few campaigns on the market are directed towards attracting and maintaining older consumers [Awdziej 2015]. On account of physiological changes occurring with age, patterns of consumption are also changing and the diversity of food consumed by seniors is decreasing. It has a direct effect both on the quality of life of old-aged persons as well as the incidence of illnesses [Christensen et al. 2009]. On the Polish market, there is an offer of health-focused products, which the elderly can consume. In order to optimize this offer, getting to know the attitudes of the elderly towards health-focused products is necessary.

## MATERIAL AND METHODS

The main goal of the research was to evaluate the attitudes of elderly people with regard to new and unknown food as well as their acquaintance and level of acceptance in the convenience foods with health-focused properties presented in the study. The research was conducted in a chosen group of 80 persons, aged 60+. For research purposes, the social environment, in this case a Senior's Club, was a selection criterium of respondents in the city of Gdynia. The Club is located on Armii Krajowej Street where respondents take active participation as members of classes dedicated to them. An intentional and no probabilistic selection process was applied, in which the researcher, basing on own insight about the population, indicated individuals involved in the attempt. [Szreder 2004].

An empirical examination was conducted using the method of the measuring survey, a technique of direct interviews, in which questions concerning gender, age and incidence of chronic illness were placed. 63 women filled in a questionnaire (78.7% of the all examined) and 17 men (21.3% of the all examined). Respondents, in equal number, responded by saying that they hadn't been diagnosed (50% of overall respondents), and had been diagnosed with chronic conditions (50% overall of respondents), such as: arterial hypertension (38.75% of all examined), ischemic heart disease (25% of all examined), rheumatoid arthritis (32.5% of all examined), osteoporosis (16.25% of all examined), thyroid diseases (8.75% of all examined) and diabetes (7.5% of all examined). The conducted study was of experimental character. The insufficient number of persons participating in the research resulted in a lack of ability of generalizing achieved results among the entire population of elderly people living in Poland. However, the subject matter of the conducted examination is still standing especially in relation to an aging society and dietary behavior of elderly people should be the subject of research. The evaluation of attitudes and dietary behavior of seniors is becoming part of the developing silver economy by providing for the realization of dietary needs of this population group.

With regard to new and unknown food, the scale of dietary neophobia formed the basis of assessment of senior consumers' attitudes (Food Neophobia Scale – FNS) [Pilner, Hobden 1992]. It contained 10 statements: 1. I am constantly trying new and different kinds of food; 2. I am afraid of new food; 3. If I do not know what kind of food it is, I won't try it; 4. I like food from various countries; 5. The bizarre appearance of food from various countries is too much for me to eat it; 6. When I am out of the house I try new kinds of food; 7. I am afraid of eating something I haven't eaten up until now; 8. I am

particularly fussy towards the food which I eat; 9. I eat almost everything; 10. I would like to eat food from other regions of Poland or other countries. FNS allows to make a statement describing general predispositions of a given person in dietary neophobia. Each of the respondents had the task to determine the his or her stand on the above statements according to the 5-point Likert scale exemplifying 'no' (1) through to 'yes' (5) [Ritchey et al. 2003]. The higher the number of points obtained, the higher the level of dietary neophobia stated in the examined group. According to the assumptions of FNS methodology, reversed scoring was applied to 5 of the statements: 1, 4, 6, 9 and 10. Based on averages from given replies to individual statements, 3 levels of neophobia appearing among respondents was accepted: low, average and high (Table 1).

By using the Food Attitude Survey method (FAS-R), knowledge and the level of acceptance of elderly people in studying convenience food with health-focused properties were assessed. Earlier research showed that FAS-R can be used to precisely determine individual differences in patterns of nutritional preferences [Frank, Van der Klaauw 1994]. The degree of approval of products was established based on the following statements: 1. I have never tried this product and I am never going to try it; 2. I have never tried this product, but I would try if I had such an opportunity; 3. I don't like this product. it tastes horrible; 4. I don't mind if I eat the given product or not. It tastes well; 5. I like this product very much. I think that it tastes well. In the study, attitudes and dietary preferences of elderly people were examined with regard to 17 food products. The food products were divided into 5 groups: vegetable and fruit preserves and vegetable juices, wholegrain cereal products, dairy products, meat and soy products and fats (Table 2). Elements of presentation were used for the analysis of the results - percent of the examined group (%).

#### ATTITUDES OF ELDERLY PEOPLE WITH REGARD TO NEW AND UNKNOWN FOOD

Attitudes of consumers towards food depend on many factors which influence preferences in a different way, leading to the approval and choice of one product and the rejection of others [BabicZ-Zielińska, Jeżewska-Zychowicz 2015]. Neophobia is one of the attitudes affecting what we eat. Dietary neophobia is a specific reluctance to try something unknown, whereby the neophobe is very careful and suspicious of dishes and unknown products [Socha et al. 2009].

The average from all responses constituted grounds for determining the level of dietary neophobia in the examined group of elderly people. According to the adopted method, 26.25% of all examined demonstrated low levels of neophobia, 25%, of all examined, the highest level, and 48.75% showed an average level of neophobia (Table 1). A factor affecting the results, to a slight extent, was incidence of chronic disease among the examined group of respondents. It can be inferred that fewer elderly people battling against illness demonstrated a low level of neophobia – 11.25%, than healthy persons – 15% (Table 1), which means that these persons were less open to new kinds of food. It may be supposed that this stems from fear of eating food which could, but not necessarily, worsen their medical condition. On this basis, it can be stated, that the cause of negative

attitudes of elderly people with regard to new and unknown food is a lack of knowledge about its nutritious value, contained ingredients and its influence on the human body. It should be noted that the average level of dietary neophobia according to the examined group of elderly people aged 60+ was on a level of 48.75% (Table 1), which is a positive phenomenon and could be lowered to low levels. Manufacturers of functional food should undertake educational campaigns aimed at propagating a health-focused model of eating among the elderly, based on quality features of the product itself, the need for rational trophism and the influence of bioactive elements of the product on health. Information obtained from other consumers is crucial in formulating an opinion about new food.. This information is usually more important than information obtained from alternative sources, particularly if the person who is the source of information has considerable standing with social recognition [Ociczek et al. 2018]. Therefore, undertaking educational campaigns by producers of convenience food with health-focused properties is vital and should be aimed at propagating a health-focused model of consumption in circles of elderly people. It should be based on quality features of the product itself, the need for rational trophism and the influence of bioactive elements on health.

According to Marzena Jeżewska-Zychowicz [2009], amongst Polish consumers, the level of dietary neophobia in 2007 was: 13.1% – low, 72.2% – average and 15.3% – high. It should be emphasized that the study, the results of which were presented by M. Jeżewska-Zychowicz [2009], constitutes the first effort of evaluating neophobia and its condition amongst Polish consumers and does not consider the ageing of society. M. Jeżewska-Zychowicz stated that among Poles there is no custom of using new products and that is connected with many years of minimal product innovation of the food market. The second decisive reason, according to M. Jeżewska-Zychowicz, for the high level of dietary neophobia of Polish consumers is great attachment to traditional Polish cuisine and its dishes.

According to psychologists, attitudes towards food are shaped by a n individual’s familiarity with it. “New food”, similarly to everything that is new, causes conflict, because on the one hand what is new evokes tension and fear, and on the other hand, it triggers interest and curiosity [Kozioł-Kozakowska, Piórecka 2013]. The examined group of people, older men and women, did not declare that they were particularly fussy towards food as such and demonstrated confidence in attitudes to new food as well as a lack of resistance from trying and consuming something unknown (Table 1). People declaring

Table 1. Evaluation of dietary neophobia of persons aged 60+

Range of average	Neophobia level	Incidence of chronic illness in the examined group				Total	
		sick people		healthy people			
		n = 40	%	n = 40	%	n = 80	%
$10.0 \leq x \leq 18.0$	low	9	11.25	12	15	21	26.25
$18.1 < x \leq 30.0$	average	21	26.25	18	22.5	39	48.75
$30.1 < x \leq 50.0$	high	10	12.5	10	12.5	20	25

Source: own research

that they eat almost anything can demonstrate a tendency to more frequently try out new kinds of health-focused food, have greater confidence in convenience and functional food, approve of exotic and oriental tastes of cuisines of the world and use the opportunities parties offer to try out new dishes [Socha et al. 2009].

#### ATTITUDES AND DIETARY PREFERENCES OF ELDERLY PEOPLE WITH REGARD TO CONVENIENCES FOODS WITH NUTRITIOUS PROPERTIES

Dietary behaviors constitute the basic component of a healthy lifestyle of the population in every age group. The study of seniors' behavior towards food and eating showed that, to a great extent, gender, level of education and financial circumstances of examined individuals play a role in shaping health-focused attitudes [Babicz-Zielińska, Tańska 2015]. L. Nowak et al. [2018] observed a polarization of links between a very high and high self-assessment of women and men and decision making concerning a purchase, among others, and the recommendation of new health-focused food. Women, more often than men, and persons with a higher education paid attention to the composition of the product and information about a lack of preservatives in food [Niewczas 2013].

The results of the study concerning attitudes and dietary preferences of elderly people with regard to convenience foods with health-focused properties is presented in Table 2. Seniors could express a desire for trying unfamiliar food to them by emphasizing the statement "I have never tried this food, but I would try it, if I had such a possibility". Both healthy as well as ill persons expressed a desire to try out new food releases ( $\geq 10\%$  of all examined), however the percentage of responses amongst healthy persons was higher with regard to such products, as: birch juice – 32.5% (sick persons 15%), vegetable fish paste with red peppers – 25% (sick persons – 10%), turkey loin with lower salt content – 22.5% (sick persons – 12.5%) and rice wafers with seeds – 15% (sick persons – 10%). Respondents with diagnosed chronic illness were more willing to try out UHT milk without lactose than healthy persons, constituting 22.5% (healthy people – 15%), apple chips and one-day fruit and vegetable juices – 12.5% (healthy people – 7.5%).

Elderly people's approval of products with health-focused properties and their openness to novelty attests to the possibility of forming correct dietary behaviors in this group of respondents, thus positively affecting the condition of their health. As results from studies conducted by Anna Jędrusek-Golińska et al. [2018], in the group of elderly people aged 65+, the most often bought health-focused products were eggs and dairy products enriched in calcium. In own research, it was found that natural probiotic yogurts were more frequently consumed by the group of healthy people (52.5%) than sick persons (25%). The consumption of milk fermented products by seniors is a positive dietary behavior since probiosis is perceived as an alternative method of fighting against pathogens, but also as key in preventing and curing many diseases, among others diseases of the digestive system (mucous colitis or enteritis), and increasing immunomodulation [Malm et al. 2010]. The positive attitudes of respondents with regard to olive oil, rape-linen crater, soft margarine "cardio" is a good sign proving that elderly people limit the consumption of fat [Novelties et al. 2007]. Moreover, respondents liked and often or sometimes ate

Table 2. Attitudes and dietary preferences of elderly people with regard to convenience foods with health-focused properties

Food products	Answers to individual statements Food Attitude Survey (FAS-R) – the criterion of the incidence of respondents to chronic illnesses was considered in discussing and interpreting the findings (sick people, n = 40; healthy people, n = 40; total, n = 80) [%]								
	statement 1			statement 2			statement 3		
	sick people	healthy people	total	sick people	healthy people	total	sick people	healthy people	total
Apple chips	10.0	12.5	11.25	12.5	7.5	10	2.5	5.0	3.75
One-day fruit and vegetable juices	5.0	2.5	3.75	12.5	7.5	10	0.0	0.0	0.0
Birch juice	20.0	15.0	17.5	15.0	32.5	23.75	0.0	5.0	2.5
Vegetable paprika	30.0	15.0	22.5	10.0	25.0	17.5	2.5	10	6.25
Multigrain rolls	5.0	2.5	3.75	7.5	5.0	6.25	2.5	17.5	10.0
Rice wafers with seeds	5.0	5.0	5	10	15.0	12.5	12.5	17.5	15.0
Wholegrain pasta	25.0	10.0	17.5	7.5	10.0	8.75	7.5	2.5	5.0
Cereal coffee	19.5	12.5	15	2.5	7.5	5	5.0	2.5	3.75
UHT milk without lactose	22.5	19.5	20	22.5	15.0	18.75	5.0	2.5	3.75
Cottage cheese – 0% fat	10.0	26.5	18.75	0.0	10.0	5	5.0	17.5	11.25
Natural probiotic yogurt	22.5	5.0	13.75	12.5	0.0	6.25	5.0	12.5	8.75
Turkey loin with a reduced salt content	22.5	10.0	16.25	12.5	22.5	17.5	5.0	12.5	8.75
Soy frankfurters	25.0	25.0	25	7.5	7.5	7.5	17.5	15.0	16.25
Mayonnaise omega 3 : 6	20.0	15.0	17.5	5.0	7.5	6.25	12.5	20.0	16.25
Soft margarine “cardio”	27.5	15.0	21.25	5.0	2.5	3.75	5.0	10.0	7.5
Rape – linseed oil omega-3	10.0	2.5	6.25	5.0	10.0	7.5	12.5	12.5	12.5
Olive oil	0.0	2.5	1.25	2.5	0.0	1.25	0.0	0.0	0.0

Table 2. Cont.

Food products	Answers to individual statements Food Attitude Survey (FAS-R) – the criterion of the incidence of respondents to chronic illnesses was considered in discussing and interpreting the findings (sick people, n = 40; healthy people, n = 40; total, n = 80) [%]						Declaration of product knowledge	Declaration of unfamiliarity of products
	statement 4			statement 5				
	sick people	healthy people	total	sick people	healthy people	total		
Apple chips	47.5	32.50	40.0	27.5	42.5	35.0	78.75	21.25
One-day fruit and vegetable juices	27.5	40.0	33.75	55.0	50.0	52.5	86.25	13.75
Birch juice	30.0	15.0	22.5	35.0	32.5	33.75	58.75	41.25
Vegetable paprika	37.5	35.0	36.25	20.0	15.0	17.5	60.0	40.0
Multigrain rolls	45.0	32.50	38.75	40.0	42.5	41.25	90.0	10.0
Rice wafers with seeds	47.5	37.50	42.5	25.0	25.0	25.0	82.5	17.5
Wholegrain pasta	35.0	40.0	37.5	25.0	37.5	31.25	73.75	26.25
Cereal coffee	25.0	30.0	27.5	50.0	47.5	48.75	80.0	20.0
UHT milk without lactose	37.5	50.0	43.75	12.5	15.0	13.25	61.25	38.75
Cottage cheese – 0% fat	50.0	12.50	31.25	35.0	32.5	33.75	76.25	23.75
Natural probiotic yogurt	35.0	30.0	32.5	25.0	52.5	38.75	80.0	20.0
Turkey loin with a reduced salt content	35.0	45.0	40.0	25.0	10.0	17.5	66.25	33.75
Soy frankfurters	35.0	45.0	40.0	15.0	7.5	11.25	67.5	32.5
Mayonnaise omega 3 : 6	22.5	20.0	21.25	40.0	37.5	38.75	76.25	23.75
Soft margarine “cardio”	35.0	25.0	30.0	27.5	47.5	37.5	75.0	25.0
Rape – linseed oil omega-3	25.0	37.5	31.25	47.5	37.5	42.5	86.25	13.75
Olive oil	25.0	22.5	23.75	72.5	75.0	73.75	97.5	2.5

\* Statements: 1 – I have never tried this food and I am not going to do so; 2 – I have never tried this food, but I would try if I had such a possibility; 3 – I don't like this food. It tastes horrible and I won't try it anymore; 4 – I can eat or not eat this food. It tastes good and I eat it from time to time; 5 – I like this food very much. I think that it is tasty and I eat it pretty often

Source: own research

turkey loin with a lower salt content (57.5% of all examined). This is beneficial dietary conduct as it is recommended that elderly people reduce the intake of salt in their diets, as well as increase their intake of wholesome protein. Consumption of lean turkey, chicken, rabbit and/or veal should cover half an individual's demand for protein [Paddon-Jones, Rasmussen 2009]. From research conducted by Małgorzata Moskal and Grażyna Michalska [2017], it emerges that taste preferences of respondents are an important criterion in deciding what type of meat products to eat.

Elderly people's demand for carbohydrates should be met by replacing simple sugars (e.g. sugar, sweets) with complex carbohydrates, of which vegetables, wholegrain cereals, or leguminous seeds are a main source [Grodzicki et al. 2007]. In own research, there was a positive attitude towards wholegrain cereals containing complex carbohydrates and were consumed in the form of, i.e.: multigrain rolls (80% of all examined), rice wafers with seeds (67.5% of all examined), wholegrain pasta (68.75% of all examined) (sum of responses to statements 4 and 5 in Table 2). Moreover, seniors willingly drank chicory coffee (76.25% of all examined). Positive attitudes were noted towards the frequent and quite frequent consumption of one-day fruit and/or vegetable juices (86.25% of all examined) as well as apple chips (75% of all examined). It is worth emphasizing that it is important to increase the percentage of seniors drinking one-day fruit and or vegetable juices. However, changing attitudes to strongly positive requires educational action. Eating non-oxidizable vitamins at an appropriate level by elderly people is very important. This is particularly important with regard to prenatals such as vitamins A, C, E and folates, which are naturally sourced in an individual's diet by eating raw or low-processed vegetables and fruits in particular [Sahyoun et al. 2005]. Preferences and behaviors of fruit consumers are polarized and dependent on their age and level of income [Jäder 2017]. Conducted research, in 2017, in Skierniewice (Poland), concerning dietary consumer behavior showed that leafy vegetables (lettuce and ready blends) were eaten regularly by over 70% of respondents [Zmarlicki, Brzozowski 2017]. According to the National Institute of Public Health in Poland, a low level of vegetables and fruit intake can have an adverse impact on the condition of the organism by increasing the risk of developing cardiovascular disease, cancer, gastrointestinal disease, excess weight and obesity, among others [Serwis Zdrowie 2018].

In own research, it was demonstrated that elderly people were interested in the consumption of health-focused food (Table 1), however, it was concluded that there was a low approval of convenience foods with health-focused properties among all sorts of groups of food products (Table 2).

Perhaps the cause of low preferential treatment with regard to some foodstuffs, is a non-acceptance of sensory features since taste plays an important role in selecting food [Jędrusek-Golińska et al. 2017, Błaszczak, Grześkiewicz 2014]. Increasing interest among elderly people, as well as the potential sale of products – with a proven positive impact on health- would be possible to achieve, firstly, through educational campaigns and then through widening the assortment [Jędrusek-Golińska et al. 2018].



## CONCLUSIONS

The consumption and/or desire for trying new, unknown food of high nutritional value by the group of seniors aged 60+ is a beneficial occurrence which may be used to popularize health-focused dietary practices in this population group. Conclusions of the conducted scheme point to the high preferential treatment of elderly people aged 60+ with regard to olive oil and one-day fruit and/or vegetable juices. Educational action taken by producers can contribute to an increase in the consumption of products by seniors, of: apple chips, birch juice, vegetable fish paste with red peppers, wholegrain pasta, chicory coffee, UHT milk without lactose, curd cheese "light" free from fat, natural probiotic yoghurt, turkey loin with a low salt content, soya sausages, soft margarine "cardio" and mayonnaise containing polyunsaturated fatty acids omega 3 and 6.

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## POSTRZEGANIE ŻYWNOSCI NOWEJ ORAZ WYGODNEJ O WŁAŚCIWOŚCIACH PROZDROWOTNYCH PRZEZ OSOBY STARSZE

Słowa kluczowe: osoby starsze, postawy żywieniowe, preferencje żywieniowe, żywność

### ABSTRAKT

Postawy względem żywności są dobrymi predyktorami zachowań, a ich znajomość odgrywa ważną rolę w edukacji żywieniowej różnych grup ludności. Celem badania była ocena postaw osób starszych względem żywności nowej i nieznannej oraz znajomości i stopnia akceptacji prezentowanej w badaniu żywności wygodnej o właściwościach prozdrowotnych. Ocenę postaw względem żywności nowej i nieznannej przeprowadzono za pomocą Food Neophobia Scale, a ocenę znajomości i stopnia akceptacji wskazanych w badaniu produktów o właściwościach prozdrowotnych za pomocą Food Attitude Survey. Poziom neofobii żywieniowej badanej grupy osób starszych zależny był od stanu ich zdrowia. Konsumpcja i/lub chęć spróbowania nowej, nieznannej żywności o wysokiej wartości odżywczej przez grupę seniorów po 60. roku życia jest zjawiskiem korzystnym. Dlatego tak ważne jest podejmowanie przez producentów żywności wygodnej o właściwościach prozdrowotnych działań edukacyjnych mających na celu propagowanie prozdrowotnego modelu żywienia w środowisku ludzi starszych. Działania te powinny się opierać na cechach jakościowych produktów spożywczych, konieczności racjonalnego odżywiania się i wpływu składników bioaktywnych na zdrowie.

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