POLISH JOURNAL OF FOOD AND NUTRITION SCIENCES
Pol. J. Food Nutr. Sci. 2006, Vol. 15/56, No 4, pp. 379–384

ROLE OF PSYCHOLOGICAL FACTORS IN FOOD CHOICE – A REVIEW

Ewa Babicz-Zielińska

Department of Trade and Services, Food and Nutrition Assessment Group, Gdynia Maritime University, Gdynia

Key words: attitudes, functional food, genetically-modified food, healthy food, organic food, unfamiliar food

Psychological factors such as motives, personality and attitudes towards food and nutrition have been reviewed, and shown to essentially influence nutritional behavior. Even rational motives, like the wish to be healthy and slim, may result in eating disorders, especially in orthorexia and anorexia nervosa. Both the effect of ingested food on emotional status and the effect of emotions on food choice have been demonstrated. The results of research on consumer attitudes towards transgenic, functional, ecological and unfamiliar foods have been presented. The improper attitudes towards various forms of food and eating have often resulted from unfamiliarity of foods (neophobia) or their effects on health (functional food). The results obtained show that the knowledge of consumers' motives and attitudes is an important factor permitting the food producers to implement the best marketing strategy to increase sales, as well as allowing the dietetics and physicians to asses the risks of development of eating disorders and to change them into healthy attitudes.

INTRODUCTION

Food choice is a complex phenomenon that depends on a number of factors influencing human psyche in a different way. As a result of such influence, some products are chosen while others rejected. Due to a great variety of foods offered, criteria of choice are not always in accordance with the needs of a human body. Following this, the improper food habits may develop and exert negative effects on human well-being [Shepherd & Dennison, 1996].

Research into the behavior and attitudes of consumers play a crucial role in preventing such negative effects. So far studies have been mainly aimed at: (i) estimating demands for new market products, *i.e.* determining to what extent the new product may be accepted and which marketing strategy has to be implemented to increase its sale; (ii) determining feeding patterns of consumer groups and assessing the global food consumption; (iii) and diagnosing eating disorders, *i.e.* the attitudes concerning the restrictive diets and "healthy food" in order to determine whether they may induce such eating disorders as anorexia or orthorexia nervosa.

There have been numerous attempts to classify the factors influencing the consumers` behavior [Wierenga, 1983; Khan, 1981; Shepherd, 1989; Gains, 1994]. Generally, all factors can be put into one of the three following classes [Babicz-Zielińska, 2003]: (1) Product-related factors: physicochemical properties, nutrient contents, sensory attributes, and functionality (convenience, availability, packaging, durability); (2) Consumer-related factors: demographic factors, metabolism (hunger, thirst), psychological factors (motives, personality, attitudes); and (3) Environmental factors: economic factors, social factors (social group, family patterns, habits), cultural factors (traditions, religions), and context (place, time and company associated with eating).

Among factors that determine the quantity and sort of food consumed, the psychological factors play very important roles. Motives, attitudes and personality are considered as the key factors [Woś, 2003].

MOTIVES

The motive induces and directs the consumer's behavior in order to fulfill the expressed demands. The motives can be rational when they result in reasonable behavior, and emotional when they cause spontaneous behavior, following temporary moods or emotions. The majority of motives affecting the consumer's behavior are associated with affiliation to a social group; another may result from desire to preserve good well-being. One of the dominant motives of food choice is the wish to obtain a certain psychical comfort after eating specific foods prepared in a specific way [Babicz-Zielińska, 1999].

Not always the rational motives result in proper food patterns. For example, the desire to be healthy, slim or conserve the youth, can result in improper food behavior referred to as "food faddism". Their sources are most often explained by: (i) beliefs in properties of some foods which prevent illnesses; (ii) beliefs that some foods are especially unhealthy and should be eliminated; (iii) and beliefs that only natural food, without any preservatives or preparations, is healthy [Fieldhouse, 1995].

The pathological obsession about biologically-pure food, which can cause substantial dietetic limitations, is referred to as *orthorexia nervosa*. Orthorectic subjectsexclude from

Author's address for correspondence: prof. Ewa Babicz-Zielińska, Department of Trade and Services, Food and Nutrition Assessment Group, Gdynia Maritime University, ul. Morska 81-87, 81-225 Gdynia, Poland; tel.: (48 58) 690 16 25; e-mail: zielarz@am.gdynia.pl

their diet any food which they consider to be impure because it may contain herbicides, pesticides or artificial substances, line preservatives, or the processed food. This obsession results in a loss of social relationships and affective dissatisfaction because the orthorectic subjects are all the time concerned with eating [Catalina *et al*., 2005]. Donini & Marsil [2004] have shown that persons suffering from orthorexia have a specific attitude to food: preserved food is dangerous for health, and healthy food should be biologically pure.

EFFECTS OF EMOTIONS

The relation between food choice and emotional status is complex. Some foods are chosen in order to improve emotional states – restore vigor, decrease depression. On the other hand, food preferences depend to a substantial extent on current mood.

A number of foods have been considered to influence mood and mental freshness. They include coffee, tea, alcohols, and "energy" drinks. The latter are widely claimed to prevent sleepiness and restore the well-being and energy. Among a number of constituents that can usually be found in these drinks, like inositol and taurine, the main effects of the drinks seems to derive from caffeine and carbohydrates [Smit & Rogers, 2002].

The effect of caffeine is expressed as increased feelings of well-being, energy, motivation, alertness, concentration *etc.* [Mumford *et al.,* 1994]. However, some research have failed to prove any positive effect of caffeine on mood [Landolt *et al*., 1995; Smith *et al.*, 1997]. This could have resulted from the use of improper methods to study this difficult problem. Therefore, in another work [Smit & Rogers, 2002] some special, mutually adding techniques have been applied. After any test, the subjects have assessed their mood state or feeling, *e.g*.: fatigued, tense, thirsty, relaxed, revitalized, and others. The overall mood has also been measured, each time at a 100-mm scale. As it has been shown, it was the caffeine that influenced the mood and could be described as a constituent capable of restoring mental energy.

Some persons demonstrate smaller appetite and lowered food intake when subjected to any emotions, especially negative ones. Others under similar conditions have greater appetite. The relation between mental state and appetite is especially observed among women [Jeżewska-Zychowicz, 1996]. The relation between food choice and emotions can be supported by evidence that a majority of persons suffering from depression are anorectic.

The names of food products, and especially their sensory attributes, are often applied to describe emotional status [Fieldhouse, 1995], *e.g.* in Polish expressions: "cold as a fish", "sour face", "sweet heart", "buttery eyes", *etc*.

The relations between emotion and food preferences have been so far the objects of few papers. In a study carried out among a hundred of American students, the effects of 22 moods on the choice of a number of foods and dishes have been determined [Lyman, 1989]. In boring mood, more diverse foods have been selected. Sweets have been chosen in joy and happiness. People relaxed or being in love, rather than those depressed or sorrow, have preferred alcohols; such results have been attributed to the desire to continue the nice mood. The classification of foods into healthy and unhealthy ones has shown that healthy foods are associated with positive emotions, like self-confidence, friendship, happiness, whereas unhealthy food – with negative emotions as anxiety or boredom. As claimed by the authors, such observation suggests the occurrence of the so-called "body wisdom".

In a study of the author [Babicz-Zielińska, in press], the impact of emotions on the quantity and sorts of foodstuffs consumed has been shown among a hundred of young women, aged 15–19. Sweets have been chosen in anger, sorrow, boredom, stress, namely in negative moods, but also in love and happiness. When tired, subjects have more preferred yogurts and fruit. Boredom has resulted in an increased intake of food; such an effect has been previously reported by as more as 83% of young women. No special preferences have been noted in the last mood, and sweets, junk food, fruit ad yogurts have been preferred.

In a research aimed at determining the influence of intro-extraversion on food behavior [Narojek, 1993], the persons showing a high extraversion degree have eaten more irregularly and preferred to a greater extent the sour taste, meat and fatty dishes.

ATTITUDES

Another important psychological factor influencing food behavior and choice are attitudes. The attitude is defined as an entity composed of a heterogeneous array of thoughts and other responses relevant to expressing the relatively stable meaning and feeling of different attitudes to objects such as products, persons, slogans or ideas toward which people differ as regards positive and negative effect [Olsen, 1999; Jachnis & Terelak, 1998]. The attitude has three components: cognitive, affective and conative. Shepherd [1988] has indicated the affective component as a principal component of an attitude. The preferences expressed most often as liking/unliking degree, have been suggested as properties of attitudes [Olsen, 1999]. Recently, in the EC countries a growing interest can be noted in studies into consumers' attitudes towards novel food, especially towards transgenic, functional, organic and unfamiliar food.

ATTITUDES TOWARDS UNFAMILIAR FOOD

Neophobia is defined as an aversion to eat unfamiliar food. It is a characteristic feature of all-eating organisms, so that of many animals and human beings. Such organisms, when exposed to danger of having toxic food, taste novel foods with extreme caution and strongly prefer familiar foods.

Such behavior is typical of animals and cannot be directly attributed to human beings. In the case of the latter dangerous food is eliminated from the market (*e.g*. beef infected with prions) or distinctly acknowledged as dangerous or harmful (fats, alcohols).

Studies addressing neophobia phenomenon [Hobden & Pliner, 1995; Otis, 1984; Pliner & Pelchat, 1991; Pliner *et al*., 1995; Pliner *et al*., 1993] have usually taken into account a key issue: what factors conserve neophobia and what factors minimize this attitude. The important new approach has been the introduction of the 10-point Food Neophobia Scale [Pliner & Hobden, 1992]. In analyzing the effects of various

factors [Tuorila *et al.*, 2001] the occurrence of neophobia has been shown as less likely with the increasing education and degree of urbanization. Men more often than women have shown the neophobic attitude.

Neophobia is strongly associated with both physiological and emotional states. The persons less timid and moderately hungry have been demonstrated the be characterized by the lowest neophobia degree [Pliner *et al*., 1995]. Adults change their attitudes towards novel foods as affected by a variety of factors: advertising, fashion, and advices of other persons. The positive information about the taste has distinctly increased the acceptance of novel juices [Cardello & Sawyer, 1992]. The neophobia degree can be changed by observation of neophobic or neophilic attitudes of other person, being present at food choice.

Among children, the neophobia has been associated with their temperament [Pliner & Loewen, 1997]. Dependencies have been observed in their case between neophobia and timidity, emotional instability and negative reactions towards food.

In the another authors' research [Babicz-Zielińska, in press], the consumers' attitudes towards ostrich meat have been determined. A lack of acceptance of this meat has been noticed especially among men, aged 30–50 (14.3%). The statement "it is too likable bird to be eaten" which demonstrates the psychic barrier of consumers has expressed the main reason.

ATTITUDES TOWARDS FUNCTIONAL FOOD

Functional food is not generally accepted. In the USA, a group of consumers of general food is mainly constituted by well-educated women, aged 35–55, of higher income [Childs, 1997]. In Europe, such food is bought by less educated women [Hilliam, 1996]. Women, 45–74 of age, easier adapt to functional food as a component of their diets. Having small children or ill family members are another factors developing an interest in functional food [Verbeke, 2005].

There is an important role of beliefs in buying functional food: about own influence on health [Hilliam, 1996], benefits for health [Childs, 1997], prevention of diseases by proper food habits [Wrick, 1995], protective properties of natural foods [Childs & Poryzees, 1997].

Verbeke [2005] has stated that belief in a positive effect of functional food on health is the main factor in its acceptance. To study this issue, he has applied two Likert scales stating that: (1) "Functional foods are all right for me as long as taste good"; (2) "Functional foods are all right for me even if taste worse than their conventional counterpart foods". Among the population studied, 48.9% of respondents have agreed to the first assumption and as little as 9.3% – to the second assumption.

Urala & Lähteenmäki [2004] have studied the attitudes towards functional food, such as: anticipated benefits, confidence, necessity to eat, functional food as a medicine or part of a healthy diet, no nutritional risk at intake of the functional food, a positive relation between the health effect and taste. The first attitude appeared the most reliable at anticipating the wish to eat the functional food.

The studies performed among female students [Kabacińska & Babicz-Zielińska, 2004] have shown that young women usually support an idea to supplement food with some nutritional ingredients. Small children, older persons, pregnant and breast-feeding women have been suggested as the most appropriate consumers of functional food.

ATTITUDES TOWARDS HEALTHY FOOD

Bower *et al.* [2003] have estimated the effects of liking, information and consumer characteristics on the purchase intention and the will to pay more for fats of proved health value. The labeling about characteristics, price and health value of fat has influenced the intention, especially when the liking degree has been high. The main reasons for making decision on purchase or not have included health value and price. Women, older subjects and those who have appreciated health aspects of food have estimated the health value of fat higher.

Minimally-processed vegetables and packed fruit are important for health, because they preserve properties of fresh products at increasing functionality. Recent research [Ragaert *et al.,* 2004] has proved that principal motives for buying these foods are convenience and fast preparation, and a number of subjects know about conserving the nutritional value of food by processed products.

The low-fat products have been especially intensively investigated. It is expected that beliefs in the positive effect of those products on health would result in their acceptance and selection. On the other hand, high-fat foods are more liked because of their good taste [Kähkönen & Tuorila, 1999; Tuorila *et al.*, 1994].

The relations between purchase intention of low-fat products, and consumer gender and health care have been investigated [Kähkönen & Tuorila, 1999]. The labeling about low-fat content has decreased the liking and purchase intention of chocolate snacks, and increased them in the case of low-fat margarines – but only among these consumers who have taken care about their health.

In other study information about health value of fish has promoted their intake [Foxall *et al.,* 1998]. Altekurse *et al.* [1995] have also shown the positive relation between fish intake and health awareness. Trondsen *et al.* [2004a,b] have observed an increased high-fat fish intake among well-educated and younger consumers but only those who have wished to become slimmer. A higher fish intake has been noted for consumers believing in health value of fish, eating more fish in childhood, better educated and having higher incomes.

Food crises change beliefs, attitudes and behavior towards some specific foods. As an example, a change has been noted towards meat that could be poisoned with dioxin. Verbeke & Viaene [2001] and Verbeke [2001] have noted a remarkable increase in consumers' requirements on safety and content of hormones at the stage of production, delivery and guaranties.

Lappalainen *et al.* [1998] have studied the attitudes towards food and nutrition among over 14000 of the EC inhabitants. The consumers have proposed the following definition of healthy nutrition: a diet that contains more fruit and vegetables (the most often proposed by Greeks – 66%), contains fresh food (Italians – 56%), is well-balanced and diverse (Belgians), contains less fats and fatty foods (often chosen, mainly by the Germans – 74%, Englishmen and Luxembourg inhabitants – 64%), has less red meat and meat

products (Belgians – 54%), less sugar (few responses, mainly the Germans – 27%), more fiber (less chosen, mainly by the Swedes – 27%). The following barriers have been indicated in healthy eating: no sufficient time, weak self-observation, necessity of preparing dishes, high cost of food, bad taste, influence of other people, poor knowledge. The main sources of knowledge on healthy eating indicated by the consumers included: TV and radio, magazines and newspapers, specialists in health, family and friends, advertisements and books. The most trusted have been: professionals, government agencies, food labeling, TV and radio, newspapers and magazines.

The Polish consumers have stated [Kabacińska *et al*., 2005] that healthy and safe food should be fresh, without preservatives and supplements, that is also organic food (from ecological farms). Only 1% of subjects have considered all food available on the market as safe for health.

ATTITUDES TOWARDS GENETICALLY-MODIFIED FOOD (GMF)

The genetically-modified food is generally hardly accepted. For example, Saba & Vasallo [2002] have reported that a majority of inquired subjects have represented the negative attitude towards the application of gene technology in growing tomatoes.

The factors determining purchase intentions and feelings towards GMF have been studied in Argentina [Mucci *et al*., 2004]. Generally, purchase intention has been low, and the most motivated subjects have been young and less educated people, those less informed about GMF and those who liked to buy new sorts of food and demonstrated neophilic attitudes. In an earlier report [Mucci & Hough, 2003], the subjects of a small 45-person group have demonstrated a number of negative attitudes towards GMF: it is risky for health and can change environment; and some positive attitudes: it is beneficial and can improve nutrition. It is interesting that the subjects have demanded such food be especially marked.

The research made in four Nordic countries [Grunert *et al*., 2001] has also shown rather negative approach to GMF. The studies have included three genetically-modified foods: cheese, sweets and salmon. The reported reasons of such an attitude included: the uncertainty concerning the long-term intake and effect on health.

The studies among a hundred of Polish consumers [Kabacińska & Babicz-Zielińska, 2005] have shown that scientific research on GMF has been supported by 57% of subjects but only 16% have thought that GMF would be safe for health. The older (45 years or more) persons and those less educated have mainly expressed fear of GMF. Only 17% of subjects have agreed with the statement that the problem of hunger in the world could be solved by GMF.

ATTITUDES TOWARDS ORGANIC (ECOLOGIC) FOOD

Currently, consumers are more and more interested in eating food safe for their health, but obtained in a way neutral to the environment. The effect of such an attitude is an increasing demand for the so-called "organic food" which in Poland is sometimes referred to as "ecologic" food.

The increasing intake of organic food follows decreasing confidence towards conventional food and increasing importance of health [von Alvensleben & Altmann, 1987]. The interest in healthy life seems to be the main reason for purchase of organic food [Carboni *et al*., 2000; Tregar *et al.,* 1994]. Such an interest is associated with an increasing care of consumers on food quality, following *e.g*. reports on pesticides present in some foods. The highest number of organic farms in Europe has been developed in Italy, Austria, Spain and Germany [Ecobank, 2000]. The most Intensive cultivation has been developed for vegetables and fruit.

Saba & Messina [2003] have investigated the role of beliefs, attitudes and intentions in eating ecologic food. A research into attitudes on organic food intake and the presence of pesticides in food has been carried out by means of a questionnaire based on the Fisbein & Ajzen's model [Ajzen & Fishbein, 1980]. The consumers have described the ecologic food as healthy, secure for environment, of better taste and more nutritious than conventional food – exactly as reported in earlier papers. Purchase intention has been high and posed a significant effect on earlier intake.

Schifferstein & Oude Ophuis [1998] have studied determinants associated with health and influencing the intake of organic food in Netherlands. The subjects have reported the frequency of purchase of organic food (never, a few times a year, a few times a month, a few times a week, every day). They have bought organic food usually a few times a week. The mostly reported purchase reasons have been: higher health value, no coloring substances, pesticides, artificial flavors nor preservatives, environment-friendly, better taste. The profile of organic food consumer has shown that it is a person taking care of own health, without any serious health problems, having certain knowledge on nutrition, considering eating of organic food as an important constituent of the way of life.

SUMMARY

The present review of up-to-date research results demonstrates an important influence of psychological factors on nutritional behavior.

The results of research on consumer attitudes towards transgenic, functional, ecological and unfamiliar foods have been presented. The improper attitudes towards various forms of food and eating have often resulted from unfamiliarity of foods (neophobia) or their effects on health (functional food).

The results obtained show that the knowledge of consumers' motives and attitudes is an important factor permitting the food producers to implement the best marketing strategy to increase the sale, and the dietetics and physicians to asses the risks of development of eating disorders and to change them into healthy attitudes.

REFERENCES

1. Ajzen I., Fishbein M., Understanding Attitudes and Predicting Social Behaviour. 1980, Prentice Hall, Englewood Cliff, pp. 1–70.
2. Altekurse S.F., Timbo B.B., Headdrick M.L., Klontz K.C., Associations between diet and health behaviour – results from the 1992 Rhode Island behaviour risk factor survey. J. Behavioral Medic., 1995, 18, 225–232.

3. Alvensleben von R., Altmann M., Determinants of the demand for organic foods in Germany. 1987, *in*: Proceedings AIR-CAT 4th Plenary Meeting: Health, Ecological and Safety Aspects in Food Choice, 4, pp. 68–79.
4. Babicz-Zielińska E., Factors influencing consumers' behavior. Zesz. Nauk. AM, 2003, 48, 59–64 (in Polish).
5. Babicz-Zielińska E., Studia nad preferencjami pokarmowymi oraz determinantami wyboru żywności w wybranych grupach konsumenckich. 1999, Wyd. WSM, Gdynia, pp. 7–71 (in Polish).
6. Bower J.A., Saadat M.A., Whitten C., Effect of liking, information and consumer characteristic on purchase intention and willingness to pay more for a fat spread with a proven health benefit. Food Qual. Prefer., 2003, 14, 65–74.
7. Carboni R., Vasallo M., Comnforti P., D'Amicic A., Indagine sullea attitudini di consumo, la displonibilita a pagare e la certificazione dei prodotti biologici: spunti di riflessione e commento dei risultati scaturiti. La Riv. Ital. Sci. Aliment., 2000, 29, 12–21 (in Italian).
8. Cardello A.V., Sawyer F.M., Effects of disconfirmed consumer expectations on food acceptability. J. Sensory Stud., 1992, 7, 253–277.
9. Catalina M., Bote B, Garcia F, Rios B., Orthorexia nervosa. A new eating behavior disorder? Act. Esp. Psiquiatr., 2005, 33, 66–68.
10. Childs N.M., Functional foods and the food industry: consumer, economic and product development issues. J. Nutraceut. Funct. Med. Foods, 1997, 1, 25–43.
11. Childs N.M., Poryzees G.H., Foods that help prevent disease: consumer attitudes and public policy implications. J. Consum. Market., 1997, 14, 433–447.
12. Donini L.M. Marsil D., Graziani M.P., Imbriale M., Cannella C., Orthorexia nervosa: a preliminary study with a proposal for diagnosis and an attempt to measure the dimension on the phenomenon. Eat Weight Disord., 2004, 9, 151–157.
13. Fieldhouse P., Food and Nutrition. Customs and Culture. 1995, Chapman and Hall, London, pp. 183–188.
14. Foxall G., Leek S., Maddock S., Cognitive antecedents of consumers` willingness to purchase fish rich in polyunsaturated fatty acids (PUFA). Appetite, 1998, 31, 391–402.
15. Gains N., The repertory grid approach. 1994, *in*: Measurement of Food Preferences (eds. H.L. Meiselman, H.J.H. MacFie). Chapman and Hall, London, pp. 51–76.
16. Grunert K.G., Lähteenmäki L., Nielsen N.A., Poulsen J.B., Ueland O., Åström A., Consumer perceptions of food products involving genetic modification – results from a qualitative study in four Nordic countries. Food Qual. Prefer., 2001, 12, 527–542.
17. Hilliam M., Functional foods: the Western consumer viewpoint. Nutr. Rev., 1996, 54, S189–S194.
18. Hobden K., Pliner P., Effects of a model on food neophobia in humans. Appetite, 1995, 25, 101–114.
19. Jachnis A., Terelak J.F., Psychologia konsumenta i reklamy. 1998, Ofic. Wyd. Branta, Bydgoszcz, pp. 191–209 (in Polish).
20. Jeżewska-Zychowicz M., Zachowania żywieniowe konsumentów a proces edukacji żywieniowej. 1996, Wyd. SGGW, Warszawa, pp. 52–67 (in Polish).
21. Kabacińska A., Babicz-Zielińska E., Consumer behavior towards genetically modified food. Bromat. Chem. Toksykol., 2005, suppl., 315–319.
22. Kabacińska A., Babicz-Zielińska E., Consumer behavior of functional food. Bromat. Chem. Toksykol., 2004, suppl., 59–64.
23. Kabacińska A., Rybowska A., Babicz-Zielińska E., Rodzaje żywności zaliczanej przez konsumentów do tzw. zdrowej. 2005, *in*: Konsument żywności i jego zachowania rynkowe w warunkach członkostwa w UE. Wyd. SGGW, Warszawa, pp. 255–258 (in Polish).
24. Kähkönen P., Tuorila H., Consumer responses to reduced and regular fat content in different product, involvement and health concern. Food Qual. Prefer., 1999, 10, 83–91.
25. Khan M.A., Evaluation of food selection patterns and preferences. CRC Critical Rev. Food Sci. Food Nutr., 1981, 15, 129–153.
26. Landolt H.-P., Werth E., Borbély A.A., Dijk D.-J., Caffeine intake (200 mg) in the morning affects human sleep and EEG power spectra at night. Brain Res., 1995, 675, 67–74.
27. Lappalainen R., Kearney J., Gibney M., A pan EU survey of consumer attitudes to food, nutrition and health: an overview. Food Qual. Prefer., 1998, 9, 467–478.
28. Lyman B., A Psychology of Food. 1989, Avi Book, New York, pp. 45–53.
29. Mucci A., Hough G., Perceptions of genetically modified foods by consumers in Argentina. Food Qual. Prefer., 2003, 15, 43–51.
30. Mucci A., Hough G., Ziliani C., Factors that influence purchase intent and perceptions of genetically modified foods among Argentine consumers. Food Qual. Prefer., 2004, 15, 559–567.
31. Mumford G.K., Evans S.M., Kaminski B., Preston K.I., Sannerod C.A., Silverman K., Griffiths R.R., Discriminative stimulus and subjective effects of theobromine and caffeine in humans. Psychopharmac., 1994, 115, 1–8.
32. Narojek L., Niektóre aspekty zachowań żywieniowych, 1993, Wyd. IŻŻ, Warszawa, pp. 58–61 (in Polish).
33. Olsen S.O., Strength and conflicting valence in the measurement of food attitudes and preferences. Food Qual. Prefer., 1999, 10, 483–494.
34. Otis L., Factors influencing the willingness to taste unusual foods. Psycholog. Rep., 1984, 54, 739–745.
35. Pliner P., Hobden K., Development of measures of food neophobia in children. Appetite, 1992, 23, 147–163.
36. Pliner P., Eng A., Krishnan K., The effects of fear and hunger on food neophobia in humans. Appetite, 1995, 25, 77–87.
37. Pliner P., Loewen E.R., Temperament and food neophobia in children and their mothers. Appetite, 1997, 28, 239–254.
38. Pliner P., Pelchat M., Neophobia in humans and the special status of foods of animal origin. Appetite, 1991, 16, 205–218.
39. Pliner P., Pelchat M., Grabski M., Reduction of neophobia in humans by exposure to novel foods. Appetite, 1993, 20, 111–123.
40. Ragaert P., Verbeke W., Devlieghere F., Debevere J., Consumer perception and choice of minimally processed vegetables and packaged fruit. Food Qual. Prefer., 2004, 15, 259–270.

41. Saba A., Messina F., Attitudes towards organic foods and risk/benefit perception associated with pesticides. Food Qual. Prefer., 2003, 14, 637–645.
42. Saba A., Vassallo M., Consumer attitudes toward the use of gene technology in tomato production. Food Qual. Prefer., 2002, 13, 13–21.
43. Schifferstein H.N.J., Oude Ophuis P.A.M., Health-related determinants of organic food consumption in the Netherlands. Food Qual. Prefer., 1998, 9, 119–133.
44. Shepherd R., Belief structure in relation to low-fat milk consumption. J. Human Nutr. Dietet., 1988, 1, 421–428.
45. Shepherd R., Factors influencing food preferences and choice. 1989, *in*: Handbook of the Psychophysiology of Human Eating (ed. R. Shepherd). Wiley, Chichester, pp. 3–24.
46. Shepherd R., Dennison C.M., Influences on adolescent food choice. Proc. Nutr. Soc., 1996, 55, 345–357.
47. Smit H.J., Rogers P.J., Effects of "energy" drinks on mood and mental performance: critical methodology. Food Qual. Prefer., 2002, 13, 317–326.
48. Smith A., Whitney H, Thomas M., Perry K., Brockmann P., Effects of caffeine and noise on mood, performance and cardiovascular functioning. Human Psychopharmac., 1997, 12, 27–33.
49. Tregar A., Dent J.B., McGregor M.J., The demand for organically grown produce. Brit. Food J., 1994, 96, 4, 21–25.
50. Trondsen T., Braaten T., Lund E., Eggen A.E., Consumption of seafood – the influence of overweight and health beliefs. Food Qual. Prefer., 2004a, 15, 361–374.
51. Trondsen T., Bratten T., Lund E., Eggen A.E., Health and seafood consumption patterns among women aged 45–69 years. A Norwegian seafood consumption study. Food Qual. Prefer., 2004b, 15, 117–128.
52. Tuorila H., Lähteenemäki L., Pohjalainen L., Lotti L., Food neophobia among the Finns and related responses to familiar and unfamiliar foods. Food Qual. Prefer., 2001, 12, 29–37.
53. Tuorila H., Meiselman H.L., Cardello A.V., Lesher L.L., Role of sensory and cognitive information in the enhancement of certainty and liking for novel and familiar foods. Appetite, 1994, 23, 231–246.
54. Urala N., Lähteenmäki L., Attitudes behind consumers` willingness to use functional foods. Food Qual. Prefer., 2004, 15, 793–803.
55. Verbeke W., Beliefs, attitude and behaviour towards fresh meat revisited after the Belgian dioxin crisis. Food Qual. Prefer., 2001, 12, 489–498.
56. Verbeke W., Consumer acceptance of functional foods: socio-demographic, cognitive and attitudinal determinants. Food Qual. Prefer., 2005, 16, 45–57.
57. Verbeke W., Viaene J., Beliefs, attitude and behaviour towards fresh meat in Belgium: empirical evidence from a consumer survey. Food Qual. Prefer., 2001, 10, 437–445.
58. Wierenga B., Model and measurement methodology for the analysis of consumer choice of food products. Publ. AGEV, 1983, 2, Ernahrung-Umschau, 30, 21–28.
59. Woś J. (ed.), Zachowania konsumenckie – teoria i praktyka, 2003, Wyd. AE, Poznań, pp. 50–53 (in Polish).
60. Wrick K.L., Consumer issues and expectations for functional foods. Crit. Rev. Food Sci. Nutrit., 1995, 35, 167–173.

Received October 2005. Revision received March and accepted April 2006.

ROLA CZYNNIKÓW PSYCHOLOGICZNYCH W WYBORZE ŻYWNOŚCI – ARTYKUŁ PRZEGLĄDOWY

Ewa Babicz-Zielińska

Katedra Handlu i Usług, Zespół Oceny Żywności i Żywienia, Akademia Morska, Gdynia

Omówiono rolę czynników psychologicznych takich jak motywy, osobowość i postawy w kształtowaniu zachowań żywieniowych. Wykazano, iż nawet racjonalne motywy, takie jak troska o zdrowie i szczupłą sylwetkę, mogą prowadzić do nieprawidłowych zachowań żywieniowych, szczególnie do ortoreksji i anoreksji. Wykazano wpływ stanów emocjonalnych na wybór żywności, jak też wpływ spożywanej żywności na stany emocjonalne. Przedstawiono wyniki badań postaw konsumentów w stosunku do żywności transgenicznej, funkcjonalnej, ekologicznej, oraz nieznanej. Stwierdzono, że niewłaściwe postawy w stosunku do różnych form żywności i żywienia często wynikają z nieznajomości samych produktów (neofobia), czy ich wpływu na zdrowie (żywność funkcjonalna). Otrzymane wyniki wskazują, że znajomość motywów i postaw konsumentów pozwala producentom żywności na podjęcie odpowiedniej strategii marketingowej, natomiast dietetykom i lekarzom – na ocenę stopnia ryzyka powstawania zaburzeń w odżywianiu i zmianę niewłaściwych postaw na prozdrowotne.