Psychosocial opinions on determinants of food choices

Psychospołeczne teorie na temat uwarunkowań wyborów żywieniowych

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Introduction

Researchers dealing with the issue of nutrition have always tried to determine the grounds for food choices. Their deliberations allowed to state that a fundamental role in understanding the complexity of human food choices is played by three elements: developmental point of view, cognitive model and psychophysical approach. These elements are also a theoretical framework for the integrated model of nutrition.

However, the nutrition specialists stress that food choices are most often made not on the basis of the rational nutrition principles but in the context of social meanings of individual products, cultural experiences and the promoted ideal of a slim body [1].

The purpose of this paper was to attempt to review the professional literature on the biological, psychological and social determinants of food choices and to summarize the current state of knowledge on this subject.

Material and methods

In the paper, we used 20 items of Polish and foreign literature on psychosocial determinants of human nutrition. Based on the literature query, we systematized the current state of knowledge related to the issues of the paper. The actual part of the paper has been divided into three sections describing the contemporary models of food choices, respectively:

- cognitive model
- developmental model
- psychophysiological model

The last part of the paper is a summary on the psychological theories of human food choices.

Modern models of food choices

So far, the specialist literature has presented many studies devoted to the determinants of making food choices by specific population groups. Their results indicate clearly that every person has innate food pref-
ferences. As early as in the 1980s it was demonstrated that newborns preferred sweet and salty tastes while they were reluctant to consume bitter products [2]. Studies in that field demonstrated that adults also showed food preference towards sweet tastes [3]. It should be stressed here that preferences for sweet tastes, both in children and in adults, occur in the definite majority of respondents, regardless of their ethnic origin.

Informed human food choices result from a set of variously classified processes. Making a specific food choice depends on, inter alia, physical factors, among which the most important are geographical location, season of the year or the economy development level. An important role is also played here by social factors, in particular, by social class, education, religion or the influence of advertising as well as psychological factors, in particular, nutritional needs, heredity of food preferences or allergies [4].

The literature also provides another way to classify the determinants of human food choices. According to it, they are classified as external factors, among which there are the types and availability of food, socio-cultural determinants and internal factors, including the personality of an individual and their mindset [5].

In the mid-1950s a survey was carried out with respect to the motivation for making food choices. As a result, nine determinants of making specific choices were distinguished: the attractiveness of a product for the senses, health costs, ease of purchase and preparation, impact on body weight control, the consumer’s knowledge of the product, the product’s ability to influence the individual’s emotions, composition of the product, ethical considerations resulting from its production or country of origin [6].

Theoretical considerations and results of empirical studies relating to human food choices allowed to develop three models of food choices. The first one is the developmental model, in which a fundamental role is played by the display of products and factors such as social and associative learning. The second model of food choices is the cognitive model, in which key importance are attitudes of individuals, standards applicable in a given community, control to which the individual is subject and ambivalence. The last model of food choices – psychophysiological model, is based on such factors as: metabolic model of nutritional behavior, neurotransmitters, chemical senses, mood or the presence of stress [1].

**Developmental models of food choices**

In the developmental approach to food choices made by individuals an emphasis is put on experience and an opportunity to learn in the perception development process. According to its objectives, food preferences are determined by the previously mentioned elements. In this concept, an important place is occupied by the display of products to be eaten by consumers. According to specialists, the importance of the display results from the learned sense of security and possibility to become visually familiar with a product prior to its consumption. Also, the absence of negative consequences after the consumption of a given product has a positive impact on food choices [1].

In the researchers’ opinion, the exposure to new products has a cumulative effect. This means that with the growing number of new dishes in the individual’s menu, the number of cases of exposure necessary to accept a new product by the individual is decreasing. The exposure is particularly important in case of individuals suffering from strong fear of consumption of unknown products, i.e. neophobia [7].

Social learning is another element of the developmental model of food choices. It allows to observe the behavior of other people, also in choosing and consuming specific products or dishes. The observation and the ability to learn certain behaviors affects the behavior of an individual and decisions they make – including those concerning nutrition. In this regard, of greatest relevance is the observation of parents, peers, persons important for the individual or information disseminated by mass media [8].

A very important role in this model is played also by associative learning. It refers to the impact of determinants on specific nutritional behaviors. The possibility to associate food (or certain types of food) with specific actions or emotions. One of the most characteristic is linking of food (especially sweet) with a reward or a feeling of satisfaction and happiness. Food can also be a part of control. By means of food, parents may control food preferences of their children, by allowing them to consume some products while limiting or prohibiting the consumption of others [9].

**Cognitive models of food choices**

In the concept of cognitive models of food choices, the focus factor is the cognitive activity of the individual. This activity allows to examine to what extent specific cognitive elements make it possible to predict and explain specific behaviors [10].

Studies conducted in this area demonstrate a weak relation between the individual’s conviction about being able to control and influence their own health and the individual’s dietary behaviors. On the basis of the results of empirical studies, experts have also demonstrated a relation between the essence of specific dietary habits and practical implementation of these
habits by the individual. The more important for the individual this habit is the more willing they will be to introduce it into their dietary habits [11].

**Psychophysiological models of food choices**

The last mentioned approach regarding food choices is based on the psychophysiological point of view, with particular consideration given to the feeling of hunger and satiety. In this concept, hunger is treated as a condition following food deprivation and reflecting the motivation or urge to eat. Hunger may also be defined as the conscious state of the individual’s body expressing the desire or craving for food. On the other hand, satiety is defined as the polar opposite of hunger. In the specialist literature, we may also find definitions according to which satiety reflects the individual’s motivations to stop eating or those according to which satiety is a conscious sense of consuming a sufficient quantity of food by the individual [12].

In experts’ opinion, studies on hunger and satiety are of key importance to understanding the food choices. Therefore, the psychophysiological expression of models of food choices should be considered in terms of:

- metabolic model of eating with an emphasis put on the role of the hypothalamus,
- effect of psychoactive substances on the feeling of hunger and satiety,
- effect of neurotransmitters on the feeling of hunger and satiety,
- effect of the senses on the choice of specific food products,
- effect of food on the cognitive activity and behavior of individuals,
- relation between stress and eating [1].

From the metabolic perspective dietary behaviors are described as taking food from the environment to meet nutritional needs. This perspective is based on homeostasis which means keeping the body balance. According to it, the individual’s body is able to regulate on its own what, when and how much it should eat. According to specialists, a very important role in this respect is played by the hypothalamus which is the hunger and satiety center [1].

The psychophysiological model bases its assumptions on the activity of three main neurotransmitters which directly affect appetite. Those neurotransmitters include: catecholamines, serotonin and peptides. Each of them is of crucial importance in the context of making food choices by the individual. Noradrenaline may intensify the feeling of hunger, increase the calorie intake and craving for sweet products. Neuropeptide Y also intensifies the feeling of hunger, especially for carbohydrates. A similar effect, but geared towards an increased intake of fats, is demonstrated by galanin (Leibowitz, 1986). Researchers have also identified and examined other neurotransmitters the effect of which consists mainly in suppressing hunger, reducing appetite and bringing the feeling of satiety. This group includes cholecystokinin, bombesin, corticoleiberin and serotonin [1].

Some drugs are also of vital importance in making food choices by individuals. As reported by researchers, some antipsychotics and normothymics (chlorpromazine, lithium) result in an increase in body weight due to intensified appetite. A similar effect, especially in terms of intensifying the appetite for carbohydrates, is demonstrated by tricyclic antidepressants – the drugs used most commonly for many years in the treatment of depression. A contrary effect is attributed to selective serotonin reuptake inhibitors – the new generation drugs used in the treatment of depression. Such effect is also demonstrated by tryptophan and sibutramine. Their application, especially long-term, influences the reduction in food intake and thus the body weight reduction. On the other hand, analgescs are a group of drugs which may either reduce or intensify appetite [13].

The attempts to explain the grounds for human food choices pointed at the importance of specific psychoactive substances. Many times, it has been confirmed that they had a direct impact on the hunger and satiety center. According to the results of expert studies, nicotine inhibits appetite and reduces the feeling of hunger. A similar though much stronger effect is demonstrated by amphetamine. Therefore for many years amphetamine derivatives have been the main component of some drugs supporting weight loss. A reverse effect (intensifying hunger and stimulating the appetite) is demonstrated by marijuana. On the other hand, the effect of alcohol on appetite is left unsettled. Some studies in this area indicate its inhibitory effect, while others stress that it may intensify appetite [13].

In the context of the psychophysiological determination of individual food choices, of great importance are also sensory impressions of food – its color, smell, taste. The proper display of food products influences the consumers’ choices [2].

The choice of specific food products may be justified by the individual’s mood. It has been proven that products rich in glucose, the main source of energy for the brain, can improve the individual’s mood, concentration and learning capacity. Glucose also reduces the feeling of nervousness and irritation. Therefore, products rich in glucose are very often chosen by the individuals under the influence of strong emotions such as stress, fear, nervousness, irritation or lowered
mood. Products rich in simple carbohydrates are chosen equally willingly by the individuals who are in the process of education, acquiring new information and for better concentration. Caffeine is chosen by persons who want to improve their concentration and body performance [4].

Greenberg et al. proved however that the caffeine content in food (mostly in beverages) may affect the maintenance of body weight. From their long-term studies it results that decaffeinated beverages served to the test participants reduced the feeling of hunger during a 180-minute test period and increased the concentration of anorexigenic neuropeptide YY (causing the feeling of satiety and loss of appetite) in the first 90 minutes of observation (p>0.05). In turn, caffeine in beverages had no effect on the above indicators. In addition, glucose in beverages did not change the properties described above — regardless of the type of beverage (caffeinated or decaffeinated). However, the information regarding the effect of caffeine on the hunger and satiety center has not been clearly confirmed [15].

In analyzing the factors determining specific food choices by individuals we cannot ignore the importance of such a significant factor as stress. The information provided by the literature is not unanimous as to the impact of stress, particularly strong or chronic, on food choices of individuals. According to some researchers, stress is a factor inhibiting appetite, influencing the reduction in food intake by persons under its influence. The others presented completely different results of their studies. Those results showed that stress could contribute directly to increasing the amount of consumed food. They also demonstrated that the functioning of the individual under conditions of strong or chronic stress contributed to increasing the consumption of snacks in place of regular meals [1].

The phenomenon of the variable impact of stress on the quantity of food consumed has been described as the “stress-eating paradox”. The researchers put forward many hypotheses to explain that phenomenon. The greatest popularity was gained by the hypothesis put forward in 1994 by Greno and Wing. They justified the stress-eating paradox with the model of universal impact, treating food intake under the influence of stress as a universal human body reaction and the model of universal differences stating that deviations from the universal reaction are showed only by individuals susceptible to specific factors [16].

Psychological theories of food choices

The issue of human food choices may also be analyzed in the context of their psychological determinants. In the experts’ opinion, choosing specific dishes and products and refusing others may be a form of the individual’s manifestation. Eating may express human sexuality. Eating, and more precisely the refusal to eat, may be a way of expressing intrapersonal conflicts by the individual. The main reason for refusing to eat by the individual is to try to meet the expectations of the environment (playing multiple social roles while staying healthy and slim). The choice of specific food products by the individual may also be a manifestation of a feeling of guilt or desire to achieve pleasure. Food may lead the individual to achieve well-being. It may constitute a kind of panacea for guilt (“consoling oneself” with food), but it may also induce the feeling of guilt (e.g. after eating sweets). Food and its choice may manifest both self-control and loss of control. As the researchers indicate, over the past decades the fact of being on a diet has become increasingly important and currently it often is a tool to exercise control over the individual. In this context, anorexia may be a manifestation of total self-control, while bulimia just the opposite – total lack of self-control [1].

In addition, as it results from the current state of knowledge related to eating disorders, an important factor influencing the development of disease symptoms is temperament and specific traits of ill persons. An example of studies in this field may be the study by Kjelsas and Augustad conducted among 1,482 Norwegian students, using a psychometric questionnaire to measure personality traits (KSP – Karolinska Scale of Personality). The studies have proven that the development of specific eating disorders is influenced by three personality traits: extraversion, neuroticism and psychoticism [17].

Food choices of individuals may also be a form of social interaction. The place where meals are usually eaten may also be the place for family gatherings, and the mealtime itself is the time of conversations and discussions which strengthen interpersonal ties. Food itself can be an expression of positive feelings of one person towards another. This role is played mainly by sweets being a very good gift for a loved one, a way of expressing gratitude or love. Food may express relations of power within the family—the size of a serving or its content depends on the performed social role or position in the family.

Food may also be one of the forms of expressing the individual’s cultural identity. It can send a message about a person’s religious identity (resignation from certain products or product groups). It may be a symbol of the individual’s social status – people with high economic status choose more expensive but not always healthier products than people with low economic status [1].
Conclusions

On the basis of the provided information, the following conclusions may be drawn:
• Food is much more than just a set of substances necessary for the proper growth, development and functioning of the body. It is an extremely important element of human life. It occupies the main place in almost every culture. In addition, food has now many different meanings and can be an expression of various manifestations.
• Making food choices is not a simple act performed in a mechanic way. Making specific food decisions is affected by many factors (biochemical, psychological and social), of the effect of which the individual is often unaware.

Piśmiennictwo / References