

HEALTH AWARENESS TOWARD DAIRY FUNCTIONAL FOODS IN HUNGARY: A REVIEW

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ABSTRACT

Recently, the development of functional food products has played an essential role in healthy behavior. The increase in knowledge of consumers spurs concerns about health and how diet directly impacts health status. Functional foods are a new type of product that provide consumers with improvements in targeted physiological functions and a healthy lifestyle. Twenty-first-century consumers are seeking foods that have beneficial effects on the body beyond the conventional known nutritional role of the food. However, many consumers are still unclear about what functionality a given represents and the intended purpose of a given food product. In the Hungarian dairy sector, most dairy products stand out as the largest segment of functional foods giving the diversity of Hungarian's functional dairy market. Several studies have looked at the trends of individual perception and consumer behavior regarding new foods in the market and their functional role in health and disease. The objective of this review is to highlight how health awareness influences the acceptance and consumption of dairy functional foods in Hungary.

Keywords: functional food, dairy, health awareness

INTRODUCTION

Generally, European markets for functional foods are less developed, compared to the US and Japanese markets (Villaño *et al.*, 2022). However, Functional food has become one of the main directions of a healthy lifestyle in food production due to its promising positive impact on health and its relationship with the use of natural ingredients (Gallotti & Lavelli, 2020; Ogori *et al.*, 2021; Šojić *et al.*, 2020). Therefore, It has attracted great interest from consumers and manufacturers who are concerned about human welfare and sustainable economic development (Putnik *et al.*, 2020). Not surprisingly, new socio-demographic trends (e.g, longer life expectancy, promotion of healthier lifestyles, better health care, etc.) supported the functional sector to become an increasingly attractive segment of the food industry with a rapidly growing market (Musina *et al.*, 2018).

Food product functionality's growing importance was recognized even before the turn of the millennium by the food industry, which accelerated the development of new products (Szakos *et al.*, 2020). However, new products have a high market failure rate, because most of them have not been preceded by a deeper exploration of

consumer demands (Menrad, 2003). That's why, many ways to improve traditional food processing have increased over the past decade, and the development of new dairy products is gaining attention due to the increase in the demand for palatable, healthy, well-made more sustainable products. Ultrasonic processing or sonication is a promising alternative technology in the food industry as it can improve the technology and functional properties of dairy and dairy products (Carrillo-Lopez et al., 2021).

Importance of functional foods

Due to the understanding of the connection between food and human health, consumer interest in the consumption of healthy foods promoting is growing worldwide, and this has led to the come of a new category of foods, the so-called functional foods (Kandyliis, 2021). The benefits of functional food provide added value to consumers but cannot substitute the main properties of conventional foods (Galanakis, 2021). However, functional foods current consumers may achieve a modern and positive impression of themselves (Grochowicz et al., 2021). These kinds of products provide consumers with better alternatives for achieving a sustainable and healthy lifestyle. Such are found to be different from a given food referred to as a healthy diet by nutrition experts (Eliseeva et al., 2021). In general, the attitude toward both functional foods and their consumers is favorable, so such a concept represents a sustainable trend in a multi-niche market (Siró et al., 2008). The study of Baba et al., (2016), found that retaining health-related consumer interests may be an important issue in food consumption, and thus also in the development of new products to fulfill their need. And also, consumer attitudes to functional food products in light of concerning diseases have already been investigated in general terms (Plasek et al., 2020). A study on Hungary by Szakály et al. (2014) concluded that “in the current situation, there is no other choice than to bring the public’s attention to food products that possess an extra nutritional advantage. Additionally, owing to their ingredients, functional food products can help to prevent a variety of chronic diseases (Alkhatib et al., 2017).

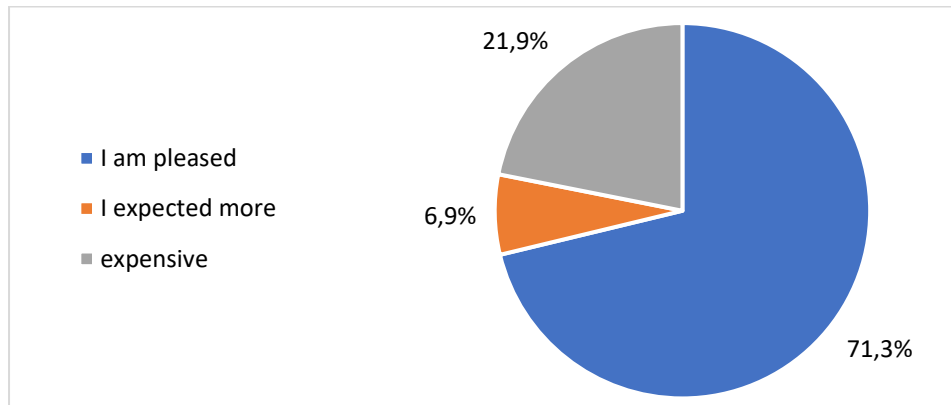
Customer Attitude Toward Functional Food

Food and nutrition play a fundamental role in treatment and prevention (Szakály et al., 2014). Healthy behavior is a complex system that involves many aspects such as physical activity, mental health, hygiene, and avoiding harmful recreational drugs to supplement informed dietary choices, in addition to the awareness about environmental sustainability issues (Macassa, 2021). A study by Szakály et al. (2012) has indicated many significant relationships between lifestyle, healthy behavior, and demand for functional and healthy food products, and it was shown that most consumers choose to eat dairy products as part of their diet as they believe that it is effective in enhancing their health compared to other substitutes. The study of Szabó-Szentgróti et al. (2017), found that when examining how well consumers know the producer and the brand and what the difference is between them, it became clear that people who concede themselves consciously live healthy know the manufacturer and do not confuse them with the definition of brand/branding. However, consumer

behavior and buyers' habits in Hungary have changed extensively, especially during and after the first wave of COVID-19 (Madarász *et al.*, 2022). This creates a new type of consumer expectation for the market, whether it be the price of special diet products or the willingness to pay extra costs (Ali & Ali, 2020). Thus, a study showed that consumer acceptance of functional foods is far from being unconditional, with one of the main conditions for acceptance of taste, besides, product quality, price, convenience, and trustworthiness of health claims (Melovic *et al.*, 2020; Szakály *et al.*, 2019). However, consumers seek to evaluate functional foods first and foremost as foods (Baker *et al.*, 2022).

A study conducted by (Balogh *et al.*, 2020b) conducted on (n=160) Hungarian respondents found that the experience of consumers with functional foods, the majority of respondents (71%) are satisfied with these foods shown in *Figure 1*. Satisfaction with functional foods was likely among those who live in the city with a higher income level and within this, it was more common among women (Balogh *et al.*, 2020b). And also, consumers who find these foods expensive probably have lower incomes or are simply unwilling to pay more than usual (Balogh *et al.*, 2020b). And the explanation for marking the “I expected more” option might be that they did not experience or notice a significant beneficial effect on their body in the long term, or they did not fulfill their expected needs. Furthermore, the response rate of men was more decisive (Balogh *et al.*, 2020b).

Figure 1: Respondents' satisfaction with functional foods



Source: Balogh *et al.* 2020b, p. 166

Factors influencing consumer choices for functional foods

Nowadays, consumers are increasingly seeking to find products that are safe and natural, have a generally recognized safe status, and are manufactured using innovative methods of sustainable and/or environmentally sound technologies (Vőneki *et al.*, 2015). For this reason, the term “functional food” is becoming more common in the social and scientific fields, so the industry is continuously investing in the enhancement of manufacturing that can provide products with additional benefits for the consumer's health (Putnik & Kovačević, 2021). It was shown that health benefits and motivation for

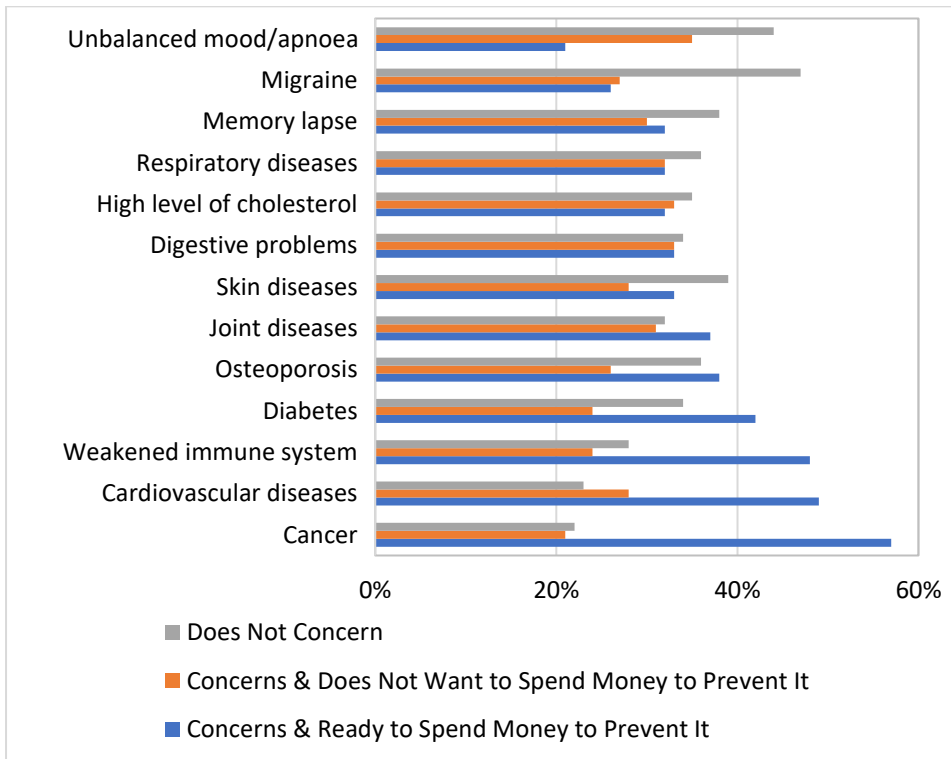
using functional food are the strongest positive determinants of acceptance (*Topolska et al., 2021*). In another hand, regardless of socio-demographic factors, inadequate nutritional knowledge background could limit functional food acceptance (*Baker et al., 2022*). Because of the complex nature of consumer motivations and expectations, proper strategy for functional food design, technological development, and marketing are crucial (*Topolska et al., 2021*). It should be emphasized that the health problems of family members increase consumers' interest in functional products (*Topolska et al., 2021*). Furthermore, people who regard functional food as a necessary product are perceived as innovative (*Gutkowska & Czarnecki, 2020*).

Functional Food And Disease Prevention

Many factors have resulted in the widespread of non-communicable diseases such as changes in lifestyle, less physical activity, and improper nutrition and caused to the extent that today they pose serious health issues, and a significant ratio of deaths are connected worldwide (*Diepeveen et al., 2013*). Globally, 41 million people die from non-communicable diseases annually, which constitutes 71% of all deaths (*WHO, 2021*). Of these, almost 15 million people are between the ages group 30–and 69. Cardiovascular diseases show the biggest risk (17.9 million deaths) followed by diseases related to cancer (9.0 million), respiratory diseases (3.9 million), and diabetes (1.6 million) (*WHO, 2021*). In Hungary, non-communicable diseases are considered an as main problem for society (*Novák et al., 2022*). Based on the statistical data of the World Health Organization, it was concluded that in Hungary the average number of years spent in good health was 66.8 years in 2016, and the average life expectancy was 76 years (*WHO, 2016*). This means that the Hungarian spends an average of 8–9 years suffering from some disease. Statistical data show that in Hungary, diseases related to cardiovascular, malignant tumors, chronic respiratory diseases, diabetes, and some other non-communicable diseases accounted for 94% of all deaths in 2016 (*WHO, 2016*).

Lifestyle changes are the most preferred methods for most diseases, such as for the prevention of cardiovascular diseases and unbalanced moods, and a high level of cholesterol, while dietary food supplements are chosen to avoid a weakened immune system (*Plasek et al., 2020*). Research results showed that those who were concerned about modern lifestyle diseases displayed a more positive attitude toward functional food products and had a larger potential of accepting and consuming them to prevent diseases (*Plasek et al., 2020*). Consumers are concerned about the risks that they can get from non-communicable diseases and they are worried about them, depending on the disease, only a small group of the aware is not going to make financial sacrifices to avoid them. It is important to highlight that with several diseases, the smallest ratio of respondents chose dietary supplements (*Plasek et al., 2020*). Results indicate that consumers of functional food are more concerned about diseases related to cancer. This is the only disease where; besides lifestyle changes, consumers consider taking medicaments as the best option. furthermore, the main health problems people are most affected and worried about compared to the acceptance of mitigation and prevention that might get from consuming functional foods are shown in *Figure 2*.

Figure 2: The attitude of respondents towards different health problems and their propensity to spend money to decrease the probability of their occurrence.

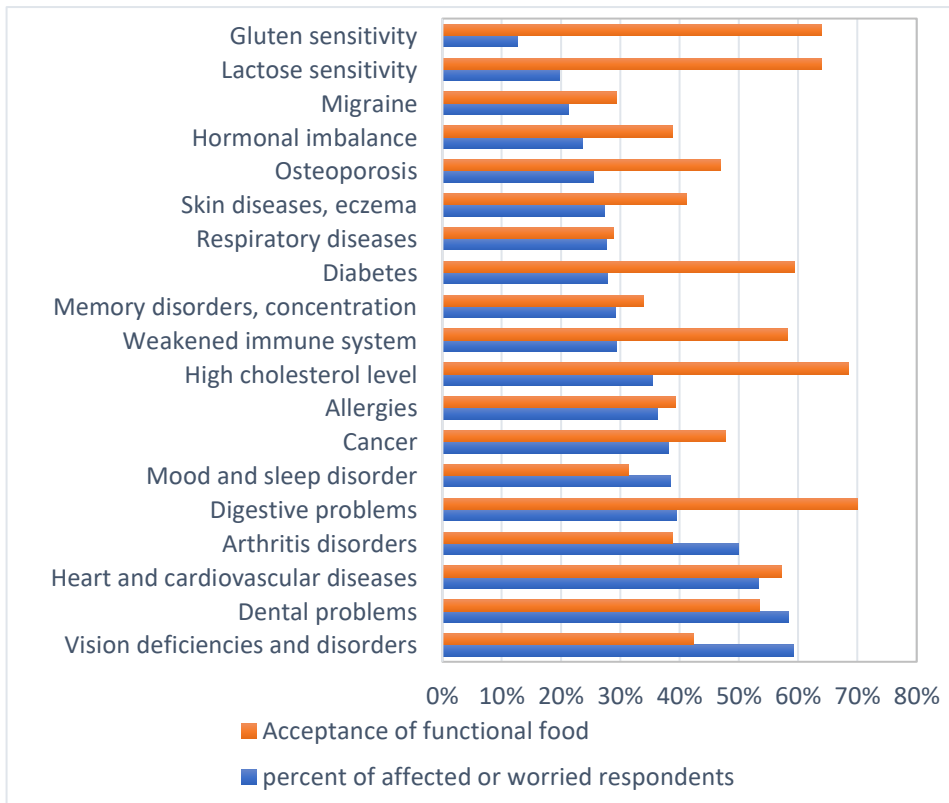


Source: *Plasek et al., 2020, p. 5.*

In another study (*Németh et al., 2020*) conducted on Hungarian customers (n=1002) concerned with lactose intolerance, more people choose not to consume dairy products when they are experiencing unpleasant symptoms and it is usually because of their lack of knowledge. Instead of legal definitions, consumers get their information about the functional food properties through advertisements and labels (*Németh et al., 2020*). Moreover, another study also explains that concerning disease prevention, the consumer gender does not have a significant effect on choosing functional foods (*Plasek et al., 2020*). Numerous literature sources (*Kraus et al., 2017; Meyerding et al., 2018; Verneau et al., 2019*) said that leading role of gender, age, and completed education as fundamental key demographic factors influencing the consumption of functional foods. Significant differences between men and women were found in the field of functional food components, which are significantly more important for women than for men. And also, young consumers are more open to high-technology food processing. *Szakos et al. (2020)* conducted a study on a Hungarian group of (n=1002) respondents who demonstrated in *Figure 3* who would be willing to pay to prevent or mitigate these health problems, and also those who consider themselves concerned/worried but would not like to spend more money on

it. The other group could also be a likelihood target group for product development due to their involvement. Moreover, the inclusion of foods with functional components in the diet can be carried out without further expenses, despite other solutions such as (dietary supplements, medicines, and medical treatments).

Figure 3: Assessing the worrisome/affecting health problems of Hungarian consumers and the suitability of functional foods to prevent or mitigate these problems



Source: Szakos et al., (2020, p. 63.)

DISCUSSION & CONCLUSIONS

Health awareness and consumer acceptance of the new trend concept of functional foods have been widely discussed as key success factors for market orientation, consumer-led product development, and successfully negotiating market opportunities (Baker et al., 2022). Many studies showed that consumer acceptance of functional food products is far from being ultimate, with one of the main conditions for acceptance connecting to taste, besides the quality of the product, price, convenience, and trustworthiness of health claims (Melovic et al., 2020; Szakály et al., 2019). It can be said

that consumers are becoming more and more aware of the risks of non-communicable diseases and they are worried about them, and depending on the disease, only a small group of the concerned is not willing to pay extra money to avoid them (Plasek *et al.*, 2020). However, consumers are aware of the importance of nutrition in maintaining health but there is still a significant lack of knowledge to help them make good decisions (Balogh *et al.*, 2020a). Furthermore, the relationship between attitudes towards functional foods, and beliefs about functional foods, the attributes of functional foods was explained in the more consumers believe in the health-protecting effect of functional foods, the more positive their attitudes towards those foods, and the more they are willing to pay a premium for them (Szakály *et al.*, 2019).

The consumption of dairy products is significantly declined and they are often poorly judged by consumers, and also it is unwise to completely exclude this group of foods even among those who are lactose intolerant (Németh *et al.*, 2020). This is because consuming milk as part of a healthy diet has undeniable positive physiological effects (Németh *et al.*, 2020). Undoubtedly, functional foods provide one of the most favorable and dynamically improved segments of the food industry (Grochowicz *et al.*, 2021). Besides that, there are many factors supporting the concept of functional food products like the increasing consumer awareness and knowledge in combination with new scientific research in various domains and understanding of consumer demand which require a product chain approach as a part of a successful food industry innovations (Topolska *et al.*, 2021). Furthermore, dairy-based lactose-free products consumer, the target group choose that kind of products features: lactose-free label; rich in calcium, vitamins, and fiber, and free of carbohydrate, sugar, and gluten, and also only 2 out of 3 lactose sensitive customers use lactose-free products orderly, so it can be concluded that the level of knowledge and background of this disease, its treatment, and the importance of lactose-free dairy products among these persons is not enough, and this could be solved with education, advertisement, and other information opportunities (Szabó *et al.*, 2021).

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