

THE IMPACT OF HEALTH PERCEPTION AND HEALTH-RELATED DETERMINANTS ON HEALTHY FOOD CONSUMPTION IN OLDER PEOPLE IN SLOVAKIA

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ABSTRACT

The main objective of the paper is to explore the impact of health perception and health-related determinants on achieving healthy food consumption among the elderly and to indicate how possession and importance of different determinants influence the eating behaviour of the elderly population. In our research 18 specific determinants and their manifestation in healthy food consumption were explored. The purpose of the exploration of health perception is to identify seniors' beliefs about food and health-related aspects. Empirical research was conducted on a sample of 400 elderly participants aged above 65 years and living in their own flats. The relationship between health perceptions, health-related determinants and healthy eating behaviour was confirmed by employing correlation analysis. These findings can be used also in other areas such as food choice motives, where behaviour can be investigated by exploring the contribution of various determinants.

Key words: food consumption, health perception, health-related determinants, seniors

JEL codes: M30

INTRODUCTION

Knowing the behaviour of seniors is an essential starting point in determining how to influence them [Stremersch 2008]. Seniors currently represent 18% of Slovakia's population and projections show that by 2035 they will account for more than a quarter of the whole population. Women account for 52% of seniors aged 65–69 and for 70% of those 85 years or older. Differences in life expectancy between men and women have begun to narrow – a trend that is expected to continue. In 2018 more than five in ten Slovaks aged 65 and older reported having a disability or health problem that limits their everyday activities and the disability rate rises with age. At the same time

many seniors consider themselves to be in good health – 40% of those between 65–74 years described their health as very good or good, while among seniors 75 and older only one in four reported very good or good health. These facts indicate the need for careful exploration of the behaviour of seniors in order to promote ageing in an effective way.

In analysing the problems of ageing it is a recognized need to focus more on individual responsibility for healthy life [Kritchevsky 2016]. Recently there can be seen a shift from considering old age to be a problem in itself to considering older people's responsibility for their own quality of life. Successful ageing has been described as decreasing the risk of diseases and maintaining physical and mental functioning and

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active engagement in social life. The World Health Organization [2002] identified the key concepts of productive ageing (i.e. the ability to contribute directly and indirectly in older age) and healthy ageing (i.e. the ability to remain physically and mentally fit) as a base of an active ageing policy framework. The increasing recognition to focus on personal responsibility and individual perceptions of the ‘healthy life’ initiated research in the area of food and nutrition in relation to older people’s healthy consumption.

Nutrition is recognized as one of the determinants of successful ageing, defined as the ability to maintain three key behaviours: low risk of disease and disease related disability, high mental and physical function, and active engagement of life [Kraft and Goodell 1993, Moorman and Matulich 1993]. Good and proper nutrition can significantly reduce the likelihood of developing a number of common chronic diseases and slow down their progression.

LITERATURE REVIEW

The issue of health in the process of ageing has been addressed in a number of studies [Divine and Lepisto 2005, Dean et al. 2009] supporting the concept of health as a multidimensional construct, comprising the physical, mental and social well-being and not merely the absence of disease. We adopt this multidimensional perspective on health by considering the impact of several health-related determinants.

As people age their living circumstances may alter. For example, as people retire, their income goes down and their social network may narrow. As health changes for the worse, access to shops may become a problem. Further, loss of a partner due to death of spouse or children leaving home, may change cooking and eating habits. All these factors affect older people’s behaviour towards food and their perception of food-related determinants. A strong association exists between food consumption and risk of various diseases, particularly obesity, cardiovascular disease and certain types of cancer. Hence, the need to adopt healthier diets is important in seniors’ eating behaviour [Kähkönen et al. 1997].

The ageing process impacts also food and energy intake, which tend to decrease for a number of physi-

ological and psychological reasons including reduced activity (immobility), reduced muscle tissue, lower resting metabolic rate and smaller meals. It is documented that ageing affects the ability to taste and smell [Darian and Tucci 2011]. Seniors are less sensitive to basic tastes and particular smells. Declining ability with age to detect tastes and smells and their intensity has been suggested also to be responsible for the reduced intake of foods. It is known that social factors and the eating environment are significant determinants of food intake. Other factors also contribute to older people’s quality of life, such as access to healthy food products, nutritional information and facilities at home, which impacts food consumption in the senior population [Luomala et al. 2015]. By identifying which of these factors are perceived as important, it may be possible to improve older people’s healthy food consumption.

An obvious consequence of ageing for many older people is the loss of social networks. With the change of living circumstances seniors are less likely to live with other family members or unrelated individuals and more likely to live alone and thus with high probability of eating alone [Moschis et al. 2011]. There is also evidence that older people living alone are more likely to expect support from the state in the form of home assistance and various social services, than do seniors who live with other family members. Such changes can have an effect on the quality of food consumption.

People tend to exhibit eating behaviour that is relevant to their strongest health-related determinants [Papies et al. 2007]. Those who have the most congruent determinants and health perception, achieve better healthy food consumption [Dean et al. 2009]. Adopting this statement to older people, it could be suggested that those with health-related determinants towards healthy food consumption would exhibit healthier consumption compared to those whose determinants are not relevant to healthy diet or those who lack the determinants to achieve the state of healthy eating. By identifying which of the determinants are relevant and how they influence nutrition, it may be possible to improve older people’s food consumption [Keane and Willetts 1994].

METHODOLOGY AND DATA

The objectives of our research are threefold. First, the existence of different segments will be explored within elderly populations for whom health has different distinct meanings (personal well-being vs preventing diseases). Second, the resulting segments will be compared with respect to several food-related determinants. The third objective is the analysis of the role which the possession and importance of food-related determinants play in healthy food consumption.

The sampling frame for the empirical research was elderly people aged 65+ living in their own flats. Non-probability sampling in the form of convenience sampling was employed. A total of 400 questionnaires was distributed in daily clubs for seniors. The questionnaire consisted of questions exploring three areas: perception of health in the senior population, the role of food related determinants and actual level of healthy eating behaviour. To analyse the health perception, we used a modified scheme proposed by Kähkönen et al. [1996] and used 10 items linked to health. The purpose of the health perception scale was to reveal seniors' beliefs about health. Respondents were asked: "When you think about health, how important are the following issues for you?" The degree of importance was

rated on a five-point Likert scale (1 is a very unimportant; 5 is a very important). The results of individual health perceptions is presented in Table 1.

In order to simplify the initial items, we conducted factor analysis on the perception of various items. Two factors were extracted and the total variance explained by this solution was 69.16%. Factor loading of greater than 0.40 was the criterion for accepting a statement into a factor. The results of factor analysis determined two segments of seniors with different health perceptions: a segment associating health with personal well-being (HPI1–HPI6) and a segment associating health with preventing diseases (HPI7–HPI10), with α coefficients of 0.85 and 0.81 respectively.

To measure the achieved level of healthy food consumption, we modified a three-item scale from Kearney et al. [2001]. Respondents identified the extent of their agreement with three simple statements regarding their healthy eating behaviour on a five-point Likert scale, where 1 is a strongly disagree and 5 is a strongly agree. The items were: "I make regular effort to healthy food consumption"; "I eat to a healthy amount"; and "My diet is healthy enough". A principal component analysis of the three items measuring the level of healthy food consumption revealed one factor accounting for 64% of the variance in the personal well-being

Table 1. Health perception items

HPI	Health perception items	\bar{x}	<i>SD</i>	<i>n</i>
HPI 1	Cholesterol content in foods	3.61	0.74	400
HPI 2	Fat content in foods	3.80	0.81	400
HPI 3	Salt content in foods	3.61	0.93	400
HPI 4	Sugar content in foods	3.81	0.90	400
HPI 5	Nutritional information	3.66	0.75	400
HPI 6	Control of body weight	3.32	0.89	400
HPI 7	Physical activities, walking	4.04	0.54	400
HPI 8	Level of participation in community life	3.33	0.74	400
HPI 9	Stress avoidance	3.80	0.58	400
HPI 10	Food choice based on taste, smell and food appearance	3.75	0.78	400

Source: Author's own calculation.

segment and 61% in the preventing diseases segment. A composite score was computed for each participant based on the mean value of all three items (Cronbach α was 0.83 and 0.77 respectively) – Table 2.

Key variables in our research are determinants impacting older people’s healthy food consumption. The determinants that were assessed relate to availability and access to suitable foodstuffs, facilities at home, living circumstances, cooking skills, changes in people’s social networks, etc. By identifying older people’s determinants of food consumption, their level of individual possession and perceived importance of each determinant, we can investigate the relationships between food-related determinants and healthy food consumption. A variety of personal determinants (e.g. skills), material determinants (e.g. income), and social determinants (e.g. family and friends) exist, that seniors can use to organize their food consumption.

Health-related determinants can be seen as means that are in the possession of a person at his/her own disposal and that can be used to organize healthy food consumption. As people age, the importance of individual determinants can change, and the level of possession of individual determinant may also change.

People tend to exhibit eating behaviour that is relevant to their strongest health-related determinants [Sparks et al. 2001]. Those who have the determinants that are important to healthy food consumption exhibit the best results of healthy food consumption. Diener and Fujita [1995] argue that healthy eating is likely to depend on focusing on the possession of those determinants that lead to healthy consumption. Alternatively, it could be argued that people with healthier food consumption are better able to manage and develop the determinants with strong contribution towards

healthy life [Dean et al. 2008]. Hence, seniors with healthy diet-focused determinants would have a higher level of healthy food consumption compared to seniors whose level of possession of such determinants is low, or who lack the determinants needed to achieve healthy consumption.

A list of 18 food-related determinants potentially relevant for senior’s food-consumption in life were identified and included in the survey questionnaire. Respondents were asked two questions relating to each of the 18 determinants, first relating to the respondent’s perceived level of possession of the determinant and the second to the perceived importance of the determinant for achieving healthy food consumption. The first question about the level of possession was formulated: “How do you assess your individual possession of (determinant name)?”. The question about the importance of the determinant was formulated: “How important in attaining healthy food consumption is (determinant name) for you?”. Both the level of possession and the importance of determinants was rated on a five-point scale.

RESULTS AND DISCUSSION

Two segments were identified with different perceptions of health: the first segment consisted of seniors associating health with personal well-being (life is enjoyable) and the second segment associated health with preventing diseases (energy and autonomy). This outcome is also in line with previous research by other authors [Miller and Iris 2000, Robertson 2006]. Analysis of relations between health-related determinants and healthy food consumption was performed separately on these two segments.

Table 2. Level of healthy food consumption

Healthy food consumption items	Personal well-being group		Preventing diseases group	
	\bar{x}	<i>SD</i>	\bar{x}	<i>SD</i>
I make regular effort to healthy food consumption	3.59	0.83	3.88	0.78
I eat to a healthy amount	3.54	0.76	3.79	0.70
My diet is healthy enough	3.41	0.68	3.62	0.72

Source: Author’s own calculation.

The results indicate that seniors with different health beliefs (personal well-being vs preventing diseases) would place different importance on food-related determinants, and this influences the way they form their healthy eating behaviour. Seniors with the health perception of preventing diseases would place higher importance on health determinants, knowledge and price in healthy food consumption. On the other hand, seniors associating health with personal well-being put more emphasis on health, sensory appeal and access to new products.

The means and standard deviations of the 18 determinants indicating their level of possession and importance for both senior segments (personal well-being and preventing diseases) are shown in Table 3. Respondents in both groups viewed themselves as having a high individual level of possession of storage facilities, kitchen appliances and with access to good transport. Also they expressed the ability to taste and smell and to have access to high quality food products (Table 3). However, the participants indicated having low income.

The determinants regarded as most important to achieving healthy food consumption in the personal well-being group were: appetite for food, ability to taste and smell well, knowledge about food and nutrition, family support and good general health.

In the preventing diseases group, the highest importance in attaining healthy eating was placed on: good health, knowledge about food and nutrition, ability to taste and smell, ability to walk. Access to good food service providers was seen as the least important factor, indicating that older people do not rely in their food consumption on external providers (Table 3).

The findings show that for older people food consumption is not only linked with health matters but also relates to food variety and social networks. In terms of importance, the study showed that not only personal factors such as ability to taste and smell and ability to walk, but also material determinants such as storage facilities and social resources such as family support are also important to enhance healthy consumption. Our research found that older people in both identified segments perceived themselves as having good material equipment to cook and store food, good social support in terms of family help and good personal abilities such as ability to taste and smell.

The findings also showed that people rated the importance of those determinants in which they indicated high level of possession as higher. The individuals who rated the importance and the level of possession of different determinants as high, achieved also better results in healthy food consumption. Seniors with high levels of possession on certain determinants mostly perceived these determinants as being more important and relevant to achieving healthy consumption.

In order to check the relation between a determinant's level of possession and its importance for each participant, a correlation coefficient between each level of determinant and perceived importance to achieving healthy food consumption was computed for all 18 determinants. The mean within subject correlation in personal well-being group was 0.48 where 94% of the correlations were positive and only 6% negative, while in the preventing diseases group the mean was 0.54 with 94% positive correlations. This suggests that most respondents focus on enhancing those determinants which they believe as relevant and important for healthy consumption.

The relation between level of possession and importance for the 18 determinants showed in both senior segments a small negative association between perceived individual level of possession and importance for the determinant income (−0.18 and −0.16 respectively). This suggests that those who perceived themselves as having a low income, perceived income to be more important than those who viewed themselves as having a high income. Although this effect is small, it is still statistically significant suggesting that those who do not have money, see it as more important than those people who have money. For the rest of the 17 determinants, there was a significant positive correlation between perceived level of possession and perceived importance, with highest coefficients for ability to taste and smell (0.49 and 0.46 respectively), dental health (0.40 and 0.43 respectively), cooking skills (0.47 and 0.44 respectively) and good general knowledge about food and nutrition (0.41 and 0.46 respectively).

In order to check the congruence of a determinant's perceived importance with healthy food consumption the Pearson correlation coefficient between a determinant's importance and healthy consumption score

Table 3. Correlations of food-related determinants

Food-related determinants	Personal well-being group				Preventing diseases group			
	level of possession	importance	correlation		level of possession	importance	correlation	
			level and importance	importance and healthy diet			level and importance	importance and healthy diet
\bar{x}	\bar{x}	r	r	\bar{x}	\bar{x}	r	r	
Good general health	3.74	4.00	0.23	0.36	3.49	4.12	0.27	0.39
Appetite for food	3.98	3.77	0.43	0.39	3.75	3.62	0.39	0.34
Dental health	3.76	4.01	0.40	0.36	3.54	4.04	0.43	0.38
Knowledge about food and nutrition	3.82	3.80	0.41	0.37	4.03	4.00	0.46	0.42
Cooking skills	3.60	3.53	0.47	0.34	3.79	3.26	0.44	0.38
Ability to taste and smell	4.10	4.02	0.49	0.41	3.94	3.90	0.46	0.39
High quality food products and brands	4.03	3.55	0.38	0.35	3.98	3.68	0.34	0.34
New and different types of food products	3.72	3.18	0.31	0.34	3.88	3.02	0.27	0.29
Food that is easy and quick to prepare	3.44	2.56	0.26	-0.23	3.52	2.39	0.22	-0.20
Food storage facilities (freezer, refrigerator)	4.38	3.89	0.41	0.31	4.32	3.72	0.38	0.30
Kitchen appliances and equipment to make cooking easier	4.08	3.78	0.39	0.32	4.06	3.82	0.36	0.31
Access to food service providers	2.16	2.42	0.31	-0.22	2.66	2.58	0.27	-0.19
Income	2.98	4.08	-0.18	0.37	2.92	4.14	-0.16	0.39
Access to food at low prices	3.59	3.40	0.24	0.20	3.28	3.60	0.22	0.24
Short distance to the food shop	3.43	3.39	0.24	0.23	3.32	3.10	0.27	0.20
Ability to walk / being mobile	3.96	3.85	0.39	0.35	3.59	3.99	0.36	0.39
Family support	3.54	3.80	0.38	0.36	3.80	3.95	0.42	0.39
Access to transport	4.18	3.44	0.29	0.27	4.02	3.64	0.32	0.30

Source: Author's own calculation.

was calculated. The determinant 'knowledge about food and nutrition' produced the highest correlation between importance and healthy food consumption in the preventing diseases segment (0.42). This is not surprising as among the indicators of healthy food consumption was also a statement on eating a healthy diet. To be able to have a healthy food consumption, seniors

need to have information about the quality of food products. Thus, for those who saw these determinants as important, a high level of their possession and high perceived importance led to a high score on healthy food consumption. High levels of correlation between importance and healthy food consumption were documented for ability to taste and smell (0.41 and 0.39

respectively), good general health (0.36 and 0.39 respectively) and good dental health (0.36 and 0.38 respectively). Negative correlation was found for two determinants: access to food service providers (−0.22 and −0.19 respectively) and food that is easy and quick to prepare (−0.23 and −0.20 respectively), indicating the opposite impact on healthy food consumption.

Results show that the greater the congruence between a person's perception of the importance of health-related determinants and healthy consumption, the higher the score on healthy food consumption that person experiences. This implies that people who have higher levels of possession of the determinants that are important to healthy consumption, exhibit better results in healthy food consumption. Those who have their highest possession in areas that are less important to healthy food consumption, exhibit a lower score in healthy consumption. This indicates that either seniors consider determinants with a high level of possession as being highly important to achieve healthy food consumption, or they identify healthy consumption with areas where they perceive high possession.

SUMMARY

The results of our research show how food consumption in the senior population represented by two segments with different approaches to health perception interacts with different determinants through their importance for healthy food consumption.

Older people do not associate food consumption with only health issues, but they also include enjoyment of food and social networks [Kraft and Goodell 1993, Papies et al. 2007]. In terms of determinants, our research suggested that not only personal resources such as the ability to walk, ability to taste and smell, and dental health but also material determinants such as storage facilities or kitchen appliances and social determinants such as family support were perceived to be important in achieving healthy food consumption. It was found that seniors who rated the importance of health-related determinants higher, also exhibited healthier food consumption. Those who possessed some of the determinants in plentiful amounts, indicated these determinants also as more important. Moreover, those who rated their determinants as more

important, achieved better healthy eating behaviour than seniors who rated them as less important.

In our study, healthy food consumption, as we expected, was dependent on income, health issues and living environment. However, the findings show that other determinants such as family support, transport, food knowledge, and kitchen facilities also impact healthy eating behaviour. In addition, the congruence between levels of possession and the importance of health-related determinants could also add to how seniors consume, indicating that seniors' healthy food consumption depends both on the level of possession of particular determinants and also on how important they perceive these determinants are for their consumption behaviour.

The study investigated relationships between eating behaviour and determinants and their contribution to shaping healthy food consumption. These findings can be used also in other areas such as food choice motives, where behaviour can be investigated by exploring the contribution of various determinants.

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WPLYW POSTRZEGANIA ZDROWIA I ZWIĄZANYCH ZE ZDROWIEM DETERMINANTÓW NA SPOŻYCIE ZDROWEJ ŻYWNOŚCI U OSÓB STARSZYCH NA SŁOWACJI

STRESZCZENIE

Głównym celem artykułu jest przedstawienie wpływu postrzegania zdrowia oraz determinantów związanych ze zdrowiem na spożywanie zdrowej żywności przez osoby starsze oraz wskazanie, które z wybranych czynników kształtują zachowania żywieniowe populacji osób starszych. Badaniem objęto 18 specyficznych determinant i ich przejawów w zdrowym spożywaniu żywności. Celem badania percepcji zdrowia była identyfikacja przekonań seniorów na temat żywności i aspektów związanych ze zdrowiem. Badania empiryczne przeprowadzono na próbie 400 starszych osób w wieku powyżej 65 lat, zamieszkujących we własnych mieszkaniach. Związek między postrzeganiem zdrowia, uwarunkowaniami związanymi ze zdrowiem a zdrowym odżywianiem potwierdzono za pomocą analizy korelacji. Wyniki te można wykorzystać także w innych obszarach badawczych takich jak motywy wyboru żywności.

Słowa kluczowe: konsumpcja żywności, postrzeganie zdrowia, determinanty związane ze zdrowiem, seniorzy