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The Crucial Importance of Understanding Health with Regard to Eating Habits: an Intergroup Comparison and Correlation Analysis Among Early Childhood Education and Pre-school Teachers and Students of this Specialization

KEYWORDS

health, eating habits, health education, early school education and pre-school education, healthy eating

ABSTRACT

The aim of the study was to assess: (1) differences in eating habits among female students and teachers in the context of their professional status, professional activity, place of work, age and declaration that healthy eating is (not) one of their five most important criteria of "being healthy," (2) the relationship between eating habits, age and length of employment among women for whom healthy eating is one of the five most important health criteria, and among those for whom it is not so important. The study included variables such as: eating habits, healthy eating as one of the criteria of "being healthy", gender, age, professional status, professional activity, workplace, and length of employment. The study covered 100 women: 46 students and 54 teachers (specialization of studies: early school education

and pre-school education). The Inventory of Health Behaviors was used to conduct the research (IZZ; Juczyński, 2001) – this tool is used to assess health behaviour, and the List of Health Criteria (LKZ; Juczyński, 2001) – this tool is used to assess how health should be defined. The statistical analysis that was carried out pointed to the key role of defining health for eating habits: the women who declare that healthy eating is the basic criterion of "being healthy" display a significantly better way of functioning in this context. The only important correlate of eating habits was age, but this connection was only significant among the women for whom healthy eating is one of the five most important health criteria. The obtained research results draw our attention to the importance of determining teachers' competences in the field of health and didactic skills in promoting it.

Introduction

In the numerous works on this subject, we can find many different definitions of "being healthy." In psychological concepts, they mainly refer to the relationships between an individual and the environment (Asken 1979; Heszen-Klemens 1983); in medical concepts they include searching for the ways to improve the health of humanity; and in pedagogical concepts they refer to spreading health education through proper upbringing (Syrek 2000, after: Demel 1972). The very notion of 'health' has about 120 definitions (Kowalski, Gaweł 2007). The problem is, however, that they are often related to other aspects of functioning (the psychological, biological or social aspect), and the influence on their diversity and development is exerted both by the current scientific research and by socio-cultural factors (Domaradzki 2003).

The definitions of health can be considered in professional and colloquial categories (Woynarowska 2008). The basis for professional definition is the suggestion by G. Sigerist (1946), adopted by the World Health Organisation, which includes such components as physical, psychological, and social wellbeing, with the emphasis on the statement that we should not associate health only with the lack of illness or weakness. In the modern approach to health, the scope of factors that influence understanding and defining the notion has been significantly extended by, e. g. the physiological-biological characteristics, the statement on the lack of illness, or the complete balance that consists in the achievement of perfect health (Tobiasz-Adamczyk 2000). If, however, we are to refer to the colloquial understanding of health, it refers to the way in which non-scientists define it. Then, the definition of health is based on a person's own experience and depends on factors such as: age, level of education, socio-economic status, and cultural conditions (Woynarowska 2008). Interestingly, according to the research that is being carried out, the colloquial perception of health is complex

and ambiguous, but, at the same time, it shares many features in the definition created by professionals (e. g. Kawczyńska-Butrym 2001).

Also, there is no doubt that there is a connection between behaviour oriented at being healthy and understanding what health is for a human being. In definitions, we talk about health-related actions that usually result in certain (positive or negative) consequence for our health. We have to remember about the influence of social mechanisms that, to a large extent, determine the level of awareness of one's own pro- and anti-health behaviours (Sheeran et al. 2013). Stepotoe and his colleagues have suggested an interesting division into the classes of pro-health behaviours (Stepotoe et al. 2010). Apart from behaviours related to preventive actions, avoidance of stimulants, and physical exercises, they emphasized the role of nutrition habits. This group of behaviours includes eating proper amounts of vegetables and fruit, as well as reducing the amounts of products that increase the level of cholesterol. These nutrition behaviours have been specified as those that facilitate health (Stepotoe et al. 2010).

An individual's intra-psychological functioning determines his/her health behaviours (Ogińska-Bulik 2010; Juczyński, Ogińska-Bulik 2003). One of the factors that play the key role in this context is the internal locus of control, which results in higher involvement in undertaking pro-health actions (Ogińska-Bulik 2010; Juczyński, Ogińska-Bulik 2003). What is interesting, the research shows that people who graduated from the university are better in achieving the internal locus of control (Kurowska, Horodecka 2014). Its higher level facilitates making more rational and healthy nutrition choices (Gacek 2013, 2016; Neymotin, Nemzer 2014).

In the report of the Centre for Analysing the Public Opinion (Polish abbreviation: CBOS), related to the Polish society' knowledge concerning health, published in 2012, we read that as many as 50% of the respondents indicated that good nutrition is the factor that improves the condition of human health. The reports from the World Health Organisation (WHO, 2000) seem to confirm these results, because WHO, in its recommendations, writes that what a person eats is one of the most important determinants of his/her health. In this context, proper (healthy) nutrition is considered as making such nutrition choices that are compliant with the recommendations related to eating, constitute the basis for the proper physical and psychological development of a man, and are an important factor for maintaining homeostasis (Woynarowska 2008).

Correct eating habits are shaped by many different factors that (apart from the individual's inner predispositions) include the influence of the family environment (Cooke 2004), school and peers (Woynarowska 2008). Nutrition habits, which are optimum for the correct development and maintenance of health, should be based on the valid knowledge of the topic (e. g. Food and Physical Activity Pyramid; Instytut Żywności i Żywienia [Institute of Food and Nutrition] 2016). Thus, our everyday menu should

be balanced and adjusted to the individual's lifestyle, and healthy eating should be accompanied by regular physical activity (Instytut Żywności i Żywienia 2016).

Each person may perceive health in a different manner. Taking into account health components, these differences also occur between the knowledge provided by scientists and the person's awareness. Such a state of affairs can be explained by the concept of the human nature's polymorphism by Thomas Hobbes and by the results of the research carried out by Puchalski (1997) or Ostrowski (1967). Also, there is a hypothesis according to which subjective beliefs of an individual are not related to the scientific models of health or illness (Czarnecka, Cierpiałkowska 2007).

Once again, it is worth emphasizing that there are many factors that differentiate undertaken health behaviours. As we have already mentioned, they include health, education, the level of actual knowledge and awareness of norms and standards, as well as a person's definition of health (Woynarowska 2008). In the research we have carried out, we tried to verify the role of those variables with reference to a selected health behaviour: nutrition habits.

Research objective

The objective of the research was to evaluate (1) the differences between nutrition habits of ([a] female students vs. female teachers; [b] women who work vs. women who do not work; [c] women who work in kindergartens vs. women who work in primary schools; [d] women who declare that healthy eating is one of their main five criteria of "being healthy" vs. women for whom healthy eating is not one of the main five criteria of "being healthy"; [e] women in early adulthood vs. women in the middle of adulthood); (2) the connections between eating habits and the age/length of employment among women for whom healthy eating is one of the main five criteria of health, and among women for whom healthy eating is not one of such criteria.

On the basis of the above-mentioned data and the assumption that, with age, the awareness of health increases, it was presupposed that in the context of the comparisons between the groups: (1a) female teachers' eating habits would be healthier than those of female students; (1b) eating habits of women who work would be healthier than eating habits of women who do not perform professional work; (1c) primary school teachers' eating habits would be healthier than those of kindergarten teachers; (1d) eating habits of women who declare that healthy eating is one of their main five criteria of "being healthy" would be better than eating habits of women for whom healthy eating is not one of the main five criteria of "being healthy"; (1e) women in the middle of adulthood would have healthier nutrition habits than those in early adulthood. With reference to the analysis of the relationship between the variables,

it was assumed that, in both groups, the correlation between eating habits and age/length of employment would be important and positive.

Method

We used the diagnostic survey, the questionnaire technique and research tools in the form of standardized questionnaires in the research.

Surveyed people. A hundred women took part in the research. Their average age was 31.18 (*SD* = 7.53). The surveyed group included 46 students (specialization of studies: preschool and early school education) and 54 teachers (graduates of the studies in preschool and early school education). 54 women declares that they perform professional work. In the group of teachers, 4 people declared that they work in a nursery, 27 – in a kindergarten, and 23 – in a primary school. The shortest declared period of employment was 1 year, and the longest: 25 years (*M* = 7.34; *SD* = 6.35).

Tools. The following tools were used in the research:

(1) the Inventory of Health Behaviours (Polish abbreviation: IZZ, Juczyński, 2001) – this tool is used to evaluate health behaviours. It includes 24 statements which the surveyed people evaluate in a 5-degree scale (from 1: "hardly ever", to 5: "almost always"). The results make it possible to calculate the general intensity rate of health behaviours, as well as four sub-scales: nutrition habits, positive psychological attitudes, preventive behaviours, and health practices. In the presented research we only focused on analysing the results related to eating habits. The Cronbach's alpha for this sub-scale was 0.78;

(2) the List of Health Criteria (LKZ; Juczyński, 2001) – this tool is used to evaluate the way in which people define health. The surveyed people are given 24 statements related to different dimensions of health. At the first stage, they are to choose 10 statements which they perceive as important health criteria. Then, they select 5 which they consider crucial, ranking from 1: "the least important" to 5: "the most important". Among these statements there is a reference to the way of eating: "We should eat healthy food". The results related to this statement were used in this article. The surveyed people were divided into two groups (a dichotomous variable): women who declare that healthy eating is one of their main five criteria of "being healthy" vs. women for whom healthy eating is not one of the main five criteria of "being healthy";

(3) a sociodemographic questionnaire which was used to evaluate: sex (only women were selected for the study), age (expressed in years and as a dichotomous variable: early adulthood [18-30 years old] vs. middle adulthood [31-60]), professional status (dichotomous variable: students vs. teachers), professional activity (dichotomous

variable: women who work vs. women who do not work), places of work (nursery, kindergarten, primary school), length of employment (expressed in years).

Procedure. The selection of the sample was non-probabilistic (the method of a snowball). The research was carried out in the Silesian Voivodeship in January 2020. Each of the women taking part in the study was presented the main objective of the research that included measuring health behaviours (including nutrition habits) and specifying health criteria ("being healthy"). Then, they were asked to express consent for taking part in the research. After giving their consent, each woman received a set of questionnaires which she was to complete in the presence of the researcher.

Statistical analysis. IBM® SPSS® Statistics (version 25.0) was used to analyse the results. A student's t-test was used to check the importance of the difference between the groups for independent samples. The women's nutrition habits were compared in the following five groups: (1a) female students vs. female teachers; (1b) women who work vs. women who do not work; (1c) women who work in kindergartens vs. women who work in primary schools (because of the small number of participants in this comparative analysis, women working in a nursery were not taken into account); (1d) women who declare that healthy eating is one of their main five criteria of "being healthy" (KZO) vs. women for whom healthy eating is not one of the main five criteria of "being healthy" (KNZO); (1e) women in early adulthood vs. women in middle adulthood. Moreover, due to the lack of a normal distribution of analysed variables, the Spearman's rank correlation coefficient was used to verify the relationships between eating habits and age (expressed in years) and length of employment. The analysis of the connections between the variables was carried out separately, both among women for whom healthy eating is one of the main five health criteria, and among those for whom it is not very important.

Results

Comparisons between groups. Table 1 presents the results of the comparison of nutrition habits in particular groups.

Table 1. Eating habits: comparisons between groups

	$M \pm SD$		p
Comparison 1a: students teachers	 3.29 ± 0.74 3.46 ± 0.75	$t(98) = -1.09$	0.28
Comparison 1b[1]: women who work women who do not work	 3.46 ± 0.75 3.29 ± 0.74	$t(98) = 1.09$	0.28

Comparison 1c[2]: women who work in a kindergarten women who work in a primary school	 3.46 ± 0.70 3.53 ± 0.80	$t(48) = -0.34$	0.73
Comparison 1d: KZO KNZO	 3.61 ± 0.80 3.26 ± 0.69	$t(98) = -2.33$	0.02
Comparison 1e: early adulthood middle adulthood	 3.25 ± 0.65 3.48 ± 0.80	$t(98) = -1.52$	0.13

Annotation. [1] Women who work in a nursery were not taken into account, because there were only few of them. [2] KZO: women who declare that healthy eating is one of the main five criteria of "being healthy," KNZO: women for whom healthy eating is not one of the main five criteria of "being healthy."

The results show that the way of defining health plays the key role in shaping eating habits. It is because it turns out that everyday behaviours related to nutrition are influenced by whether people's definition of health includes healthy eating as one of the five crucial criteria of being healthy. Indeed, in this context, the women who declare that healthy eating is their basic criterion of "being healthy" function better in this area. Other variables (professional status, professional activity, place of work, age) do not diversify the results related to nutrition habits.

Correlation analysis. Table 2 presents the results of the analysis between eating habits and age/length of employment among the women for whom healthy eating is one of the main five criteria of being healthy. Table 3 presents the same analysis, but among those women for whom good nutrition is not so important for being healthy.

Table 2. Correlation analysis in the group of women for whom healthy diet is one of the main five criteria of being healthy

	Age (in years)	**Length of employment**
Eating habits	0.34^{*}	0.11

Annotation. $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

Table 3. Correlation analysis in the group of women for whom healthy nutrition is not one of the main five health criteria

	Age (in years)	**Length of employment**
Eating habits	0,04	0,08

Annotation. $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$.

The results described in the above tables show that the only important correlate for eating habits is age. These variables are significantly interrelated in the group of women for whom healthy nutrition is one of the crucial five health criteria. A positive correlation means that the older a person is, the healthier the eating habits are.

Discussion

The first objective of the presented research was the evaluation of the differences in nutrition education between the students of preschool and early school education, and the teachers who already work in kindergartens and primary schools. The hypothesis assuming that the teacher's eating habits would be better than those of the students has not been confirmed. These results may be related to the fact that their knowledge is not always reflected in the actions they undertake. It is because, according to the analysis carried out among the students, despite the knowledge of the principles of good nutrition, they do not follow these principles in everyday diet (Rasińska 2012). Interestingly, according to the study by Gacek (2002), there are also incorrect behaviours in eating among the teachers. Taking into account the fact that the teachers play the key role in providing students with the information on health behaviours (including on good nutrition), the way of eating presented by this group seems to be alarming (Atay et al. 2018; Rafiroiu, Evans 2005; Perez-Rodrigo et al. 2001). It turns out that higher knowledge and experience (which, in theory, should be the result of a person's education) do not determine taking on more adequate nutrition behaviours. Thus, further research should include the attempt to verify the factors that determine the status of knowledge in those two groups.

Other differences between the groups, which referred to professional activity and the place of work, also turned out to be unimportant. Interestingly, the research carried out in Egypt indicates that women who work know the principles of good nutrition better than women who are not active in professional terms (Yacout 2015). However, these groups do not differ in the scope of their nutrition habits (Yacout 2015). Thus, as we have already mentioned, the level of knowledge does not determine the appearance of healthier behaviours. In other studies, the researchers emphasized the necessity

to carry out nutrition education among preschool teachers (Stankiewicz, Bogdańska 2013) and early school education teachers (Sharma et al. 2013). To sum it up, there are not many analyses that evaluate teachers' knowledge of good nutrition (Chen et al. 2009). Those which are available indicate that teachers' knowledge of the topic is insufficient (Rafiroiu, Evans 2005; Martin et al. 1998; Kinsler et al. 2012).

While analysing the concept of "health", we have to take into account the fact that each person creates his/her own assumptions which shape the idea of health and illness (Raman et al. 2013). *The clinical obesity maintenance model* prepared by Raman et al. (2013) assumes, i. a., that health consciousness and health competences are important in undertaking health behaviours including those related to health choices. Our results seem to confirm this assumption. It is because it turned out that the women who declare that healthy eating is one of their basic health criteria have better eating habits (as compared to the women for whom good nutrition is not one of the most important health criteria). The researchers who analyse the issue of health claim that genes, environmental conditions and nutrition (Kangalgil et al. 2017) are the factors that exert the strongest influence on our health. Eating habits, in turn, are shaped by genetic, sex, social, cultural, ethnical, economical, emotional, and psychological factors (Kiefer et al. 2005). Also, scientists emphasize that each individual creates his/her own set of beliefs and attitudes, which is related to their health and formed in connection with possible difficulties or a chronic state (Leventhal et al. 1992; Leventhal et al. 1980). The results obtained in the present study may confirm such a perception of 'health'. Therefore, it means that if we want to change a person's nutrition habits (e. g. through educational actions), we should aim at creating such a definition of health that would refer to the way of eating, too.

The last aspect of our analysis included the comparisons related to age (early adulthood vs. middle adulthood), and the connection between eating habits and age/length of employment. Some studies confirm that the level of knowledge about health decreases along with a person's age (Jovic-Vranes et al. 2009; Lee 2010). In turn, the research in the group of older Polish people (Muszalik et al. 2013) shows that their results are better than standard ones with reference to some pro-health behaviours (preventive actions, positive psychological attitude and health practices). The results related to their correct eating habits were, in turn, below average, which was not confirmed in the results of our research (Muszalik et al. 2013).

Age turned out to be an important correlate of correct nutrition habits in our analysis. However, this only refers to the group of women for whom healthy eating is one of the five crucial criteria of being healthy. Our results may be explained by the fact that, in this group, the women, with age, develop and upgrade their knowledge of nutrition, because eating habits are among their most important ways to maintain

health. Thus, we can assume that, in the group of our respondents, correct eating habits develop with age, and they are shaped for all their lives.

The length of employment turned out to be an unimportant correlate of good nutrition habits. This means that it is not professional experience (related to working as a teacher), but personal experience (gained for the whole life) that exerts an influence on a person's eating habits. These results may indicate the need to carry out further research in the group of teachers. Such a research can make it possible for us to evaluate teachers' knowledge of good nutrition and specify the determinants of such knowledge. It is because, in the books, there are still not many analyses of the connection between those variables. However, we can find the results related to the connection between teachers' length of employment and the description of their health status: the shorter they work, the better their health status is (Duda-Zalewska 2012).

Conclusions

The knowledge of good nutrition is an important aspect of being healthy. Skills and practices related to teachers' health, as well as their role in the society, are important for teaching about the principles of health and healthy eating to students (St Leger 2001). It is important for teachers to care about good nutrition, because, following their teachers' example, the children may shape their own healthy behaviours. What is more, as B. Woynarowska confirms (2008), nutrition behaviours shaped in childhood determine nutrition habits in adulthood and they are difficult to change at further stages of life. That is why it is very important to specify teachers' detailed competences related to health, as well as didactic skills related to health promotion. This is because, after parents or guardians, teachers are the children's first educators, and the level of their knowledge of health influences not only their own eating habits, but also their students' nutrition behaviours.

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