

Unlocking Healthy Nutritional Habits: A Comparative Analysis with Health and Food and Beverage Industry Employees

Furkan Baltacı

furkan.baltaci@hku.edu.tr

Hasan Kalyoncu University

Sedat Özdemir


Gaziantep Islamic Science and Technology University

Article

Keywords: Healthy Nutrition, Nutritional Habits, Healthy Eating Habits, Education

Posted Date: August 6th, 2024

DOI: <https://doi.org/10.21203/rs.3.rs-4713499/v1>

License:  This work is licensed under a Creative Commons Attribution 4.0 International License. [Read Full License](#)

Additional Declarations: No competing interests reported.

Abstract

Healthy nutritional habits are critical for the health and well-being of future generations. Many people around the world cannot get enough vitamins and minerals due to wrong and unbalanced nutrition. In order to eliminate this, factors that support people's healthy eating habits need to be determined. This study was conducted to determine the factors affecting healthy nutrition habits. In the study, being an expert in eating and drinking, having received formal education on health, or receiving professional support on nutrition were considered as external factors. Healthy nutrition level was evaluated on the basis of nutrition knowledge, emotions about nutrition, positive nutrition habits and poor nutrition habits. In this context, an online survey was applied to a total of 425 employees from the health sector (202 people) and the food and beverage sector (223 people). The obtained data were analyzed comparatively. The results of the study showed that the level of nutrition knowledge was equal in both groups. However, it was concluded that food and beverage sector employees are more sensitive than health sector employees regarding feelings about nutrition, positive nutrition and bad eating habits. While food and beverage sector employees are expected to constantly deal with food, which would cause desensitization, it has been observed that, on the contrary, they are consistent and resistant to healthy eating. It was concluded that although they did not receive formal education on health, the information they acquired through professional support (dietitian) catalyzed the processes of developing healthy eating behavior.

Introduction

Nutrition is a mandatory action that is among the key factors in sustaining life for all living things. According to the definition of the Turkish Public Health Institution (2014), nutrition; is an important behavior that must be followed to stay healthy, improve our health status and get the food and liquids our body needs on time and in the required amount to live a quality life. Today, not being able to eat healthy, along with the lack of a physical exercise routine, are considered two main problems of public health (Suleiman-Martos et al., 2021). Eating and drinking habits have changed significantly over the last 40 years. Individuals have turned to processed and ultra-processed products with low nutritional values and high energy and calorie values. There have also been significant increases in the rate of eating out of home (mainly fast food) (Gorski and Roberto, 2015).

Changes in eating habits will inevitably have negative effects on public health. More than two billion people worldwide are overweight or obese. 11% of the general world population, consisting of mothers and babies, is malnourished (Gorski and Roberto, 2015). Studies have shown the main reason for this situation is socioeconomic structure (Franciscato et al., 2019). Thiele et al. (2004) stated that high nutritional quality in terms of consumption of vitamins, minerals and trace elements is positively related to education level, age and gender. Xu et al. (2015) concluded that the level of urbanization affects healthy eating behaviour. Nutritional quality and healthy eating behaviour of individuals living in areas with low urbanization are higher than individuals living in areas with high urbanization.

Kurbanova (2023) drew attention to the relationship between healthy eating behaviour and level of consciousness. Lê et al. (2013) focused on the relationship between healthy eating behaviour and education level. The study revealed that healthy eating behaviour and diet quality are related to education level. While people with higher education levels are more sensitive about consuming organic food, they also consider the health factor when purchasing food. Vereecken et al. (2004) obtained important results in their study focusing on the role of mothers' education levels in children's healthy nutrition. According to this; Mothers with high education levels try to keep their children away from foods that they classify as unhealthy. This system, which especially uses reward and bargaining mechanisms, was pointed out as a method frequently preferred by educated mothers. Another study revealed that formal education regarding nutrition helps develop positive attitudes about healthy nutrition (Özenoğlu, Yalnız, and Uzdil, 2018). However, studies are showing that the profession performed in daily life has an effect on healthy eating behaviour (Baranauskas et al., 2015; Sargin and Güleşçe, 2022).

Studies on healthy nutrition generally focus on demographic variables or types of diseases and eating habits. There are studies in the literature that include variables such as education level, awareness level and profession. However, these studies focused on a single sample group and tried to explain the issue through individual evaluation of the existing sample. The gap seen in a study that makes a comparative analysis on whether the level of education and the profession affect healthy nutrition has encouraged this research. In this context, a process of comparative analysis of attitudes towards healthy nutrition was undertaken in a sample of health sector and food and beverage sector employees. Health sector employees can receive training on nutrition directly or indirectly during their undergraduate and, if continuing, postgraduate education. Formal education is not mandatory for food and beverage industry workers. They can work in the sector by gaining basic kitchen skills in a master-apprentice relationship. In addition, it is possible to receive semi-formal education through a certificate-based non-formal education network. Comparison of both groups aims to reveal the impact of formal education, sectoral or non-formal education and work on healthy nutrition. The empirical results to be obtained will enable the subject addressed in separate studies to be seen practically in a single study. In addition, the study results are important in understanding the driving motivational factors of food and beverage industry employees regarding healthy eating.

1. Literature Review

1.1. Adequate and Balanced Nutrition

There are nutritional styles specific to each society and are affected by the geographical conditions, the society's economy and socio-cultural situations. As a result of these situations, the importance of local dishes specific to that region has begun to increase (Arslan et al., 2015). One of the most basic needs of the individual is nutrition, and if it is met in the best way, nutrition appears as a confidence-building factor in the implementation of the person's other needs (Erten, 2006).

Nutrition; It is the intake of nutrients necessary for sustaining life, maintaining health and growth. For an individual to be healthy, energy and nutrients must be consumed in an adequate and balanced manner. It has been shown that when any of these nutrients are not taken or taken insufficiently, health

deteriorates and growth and development slow down or stop (Baysal, 2007). It is the intake and use of the necessary nutrients in the body in the appropriate amount and in the most economical way, without losing or deteriorating their nutritional value, to carry out body functions and maintain growth and development in the best way, thanks to adequate and balanced nutrition (Açıköz, 2006). An individual's nutritional needs vary depending on age, gender, genetic structure, physical activity status and existing diseases. The amount of nutrients and the amount of energy increase compared to normal during adolescence (Saygın et al., 2011).

An individual should be fed adequately and balanced to live a physically and psychologically healthy life in every period of life (Kadioğlu et al., 2015; Sakamaki et al., 2005). Bilici (2008) listed the primary conditions for a healthy diet as consuming sufficient amounts of food, having a wide variety, eating balanced meals, having high subjective quality, having high nutritional values, being economical and having high hygiene conditions. With adequate and balanced nutrition, which is seen as the basis of a healthy life, it is aimed for people to be healthy throughout their lives, to improve their health and to live a quality life. By improving the individual's environmental conditions, it is possible to prevent nutritional problems that disrupt the standard of living and diseases that can be caused by unhealthy nutrition, such as cardiovascular diseases, hypertension, diabetes, iron-iodine-protein deficiencies, rickets, dental caries and ultimately obesity. In addition, by making it easier to access and consume healthy foods, nutrition education should be given to the whole society and awareness should be raised (Vettrorri et al., 2019).

Yılmaz and Özkan (2007) stated that gaining adequate and balanced nutrition habits enables individuals to be healthy in the geriatric age group. Therefore, he suggested raising public awareness by giving seminars and training on adequate and balanced nutrition. Demirci (2003) stated that the benefits of healthy nutrition for the human body are the subject of many scientific studies. Adequate and balanced nutrition appears as an important condition that enables individuals to maintain their health, increases body resistance against diseases, improves physical and psychological health, gives energy and increases their success. It is one of the most important conditions for a healthy and successful life. If a person has a balanced and adequate diet, they will have an active life and a healthy appearance. All body structures such as vision, skin structure, muscle strength and hair are active and healthy. Their height is proportional to their body weight and they always have a vigorous and sporty appearance. At the same time, they are individuals who have developed mentally and psychologically (Ülker, 2016).

For adequate and balanced nutrition; Milk and dairy products, proteins such as meat, eggs and legumes, vegetables and fruits, and grain group products should be consumed in sufficient quantities at every meal. Food diversity should be ensured during nutrition and the same products should not be consumed for a long time. When starting the day, you should have breakfast and not skip meals. Salt and sugar production should not be taken more than necessary. Among grain products, care should be taken to consume whole grain products. Water consumption should be at least 2.5 litres per day (T.R. Ministry of Health, 2013). An individual's lifestyle is an important factor in the emergence of problems such as chronic kidney diseases, heart diseases and respiratory diseases (Ricardo et al., 2015; Menotti et al., 2015). Many chronic diseases will be prevented with a balanced and healthy diet, however, nutrition-related lifestyle variables that increase risk factors should be learned and implemented by the general population. It is possible to protect and sustain the health of the individual with a correct eating habit (Leiva et al., 2015; Beydağ, 2014; Sotos-Prieto et al., 2015).

1.2. Disadvantages of Inadequate and Unbalanced Nutrition

Tayar and Korkmaz (2007) stated that it is necessary to have an adequate and balanced diet because if the individual is inadequately and unbalancedly fed, it will cause problems in growth and development and the body's inability to perform its functions properly. Inadequate and unbalanced nutrition can cause problems in the growth, development and routine functions of the individual. Since their bodies are less resistant to microbes, these people become more susceptible to illnesses and disease processes last longer than normal. Any food consumed in inadequate amounts can cause deterioration in body health. However, unbalanced nutrition can also negatively affect people's mental functions such as their desire to work, planning and generating new ideas. If malnutrition is severe, it can lead to more serious health problems (Besler et al., 2015).

With globalization, individuals' intense working hours lead to changes in their food preferences and eating habits. Fast food has become preferred due to the need to eat quickly to save time. Obesity disease seems to be widespread in the world due to irregular and unhealthy nutrition. Obesity; It is the presence of more fat in the body than it should be. Risk factors for obesity; are age, gender, environmental factors, economic status, education level, lack of physical activity, nutritional habits, and genetic and psychological factors. Individuals generally continue the eating habits they acquired during childhood and adolescence into old age. The prevalence of obesity has been increasing since childhood. Those who are obese during childhood and adolescence have a higher risk of becoming obese in adulthood compared to those who are thin during this period (Aykol, 1996).

Unbalanced and unhealthy eating habits pave the way for many diseases such as cardiovascular diseases, diabetes and hypertension, as well as obesity. To be protected from such diseases and to live a healthy life, attention should be paid to nutrition and health should be maintained from childhood (Kocatepe and Tiri, 2015). Maguire and Monsivais (2015) children, pregnant women, people with difficult working conditions and unemployed adults are the groups most affected by malnutrition.

Some situations also hurt a balanced diet. Some of these are as follows (Ministry of National Education, 2011).

- Lack of adequate education on nutrition
- Insufficient use of health institutions
- Having a physical environment with poor conditions
- Ignorance about food hygiene and food safety
- Unconscious nutrition

- The relationship between the production and consumption of food
- Imbalances
- Lack of sufficient food due to reasons such as famine, war, and natural disaster.
- Financial inadequacies in Purchasing
- Inability to break away from traditions
- Rapid population growth

1.3. Factors Affecting Nutritional Habits

Health behavior; it is all the behaviors related to the protection and development of the individual's health. The role of health professionals in achieving healthy lifestyle behaviours is very important. For this reason, the training healthcare professionals receive on this subject and their ability to apply it is of great importance. The healthcare worker must first apply the training he receives to his own life and set an example for society (Alpar et al., 2008; Al-Qahtani et al., 2015). Nutritional habits are an issue that is emphasized all over the world because they affect the individual physically and psychologically. Situations such as the number of meals, the content and quantity of meals, purchasing food, preparing and cooking meals, as well as whether the person eats fast or slow, the time it takes to chew the food, psychological state, whether the food is hot or cold, are important during nutrition. However, education, income, customs and traditions, climate, environment and living space affect eating habits. For such reasons, it is very difficult to change a person's eating habits (Gul, 2011).

Hacıhasanoğlu et. al (2011) stated that the individual acquires his eating habits in the family environment, and then he takes his final form with the influence of the training received and the environment. Nutrition does not mean that an individual unconsciously eats the foods he wants or eats to satisfy his hunger. According to the definition of the World Health Organization (WHO), nutrition; refers to individuals being in a state of complete physical, mental and social well-being. Individuals need to have an adequate and balanced diet to increase their living standards and to consciously consume the foods the body needs in appropriate amounts and at the right time for a healthy life (Besler et al., 2015). Behaviors that affect an individual's healthy nutrition; Factors such as gender, age, economic status, marital status and education level come to the fore. Increasing nutrition awareness is one of the primary requirements for societies to achieve the targeted quality of life. For this purpose, societies should act by placing healthy nutrition at the centre of their lifestyle (Ulaş and Genç, 2010). Many factors affect individuals' food preferences and eating habits. These factors are divided into two groups: individual and external factors (environmental) (Karaağaoğlu and Samur, 2015; Güneş and Turhan, 2006) (see Table 1).

Table 1
Factors Affecting Nutrition

External Factors	Individual Factors
Social, economic and political system	Physiological Needs and Characteristics
Food availability, production and distribution system	Body Structure
Family structure	Personal Values and Beliefs
Family Apps	Food Preferences
Peers	Personal Concepts
Social and Cultural Values	Health
Media	Personal Experiences
Foods to Eat Quickly	
Nutrition Awareness	
Nutrition Awareness Personal Experiences	

2. Methodology

This study aims to comparatively analyze the healthy eating habits of health and food and beverage sector employees. In this context, a survey was conducted with health and food and beverage sector employees in Gaziantep Province. The "Attitude Scale towards Healthy Nutrition (ASHN)", which was tested for validity and reliability by Tekkurşun Demir and Cicioğlu (2019) and consists of four dimensions and 21 5-point Likert-type items, was delivered online to potential participants. Of the 446 returned surveys, 21 were eliminated because they affected the reliability coefficient and normal distribution. Analyzes were made on the remaining 425 survey data. While 202 of the participants are healthcare sector employees (HSE), 223 are food and beverage sector employees (FBSE). The necessary ethics committee permission for the application part of the research was received from Hasan Kalyoncu University Scientific Research and Publication Ethics Board on 20.06.2023.

Academic ethical principles were observed in all methodologies used in this study. In addition, relevant guidelines and guidelines from pioneering studies were followed and implemented throughout the entire methodology. During the data collection phase of the study, no identity information was requested from any participant that would identify. This was only done to ensure the protection of their personal data. Individuals aged 18 and over participated in the study. Informed consent was obtained from participants at the beginning of the online survey form. Potential participants, who were informed about the research in writing, were faced with the option of "I have read and understood. I agree or disagree to participate in this survey with my own consent." For

participants who consented, the survey questions became visible and the answering process began. For potential participants who did not consent, the online answering process was terminated with the warning "Thank you for your time. Your survey process has ended." Even if participants started the survey, they had the chance to go back and leave the survey at any stage. Even if they completed the survey and submitted their answers, they had the authority to go back and correct them or delete them completely. diagnose or expose them.

Data collection was carried out between 26.06.2023 and 16.07.2023. After this date, the system is closed to accepting surveys. S17, S18, S19, S20 and S21, among the negative items in the ASHN, were reverse-coded before analysis. After the items were subjected to validity and reliability analysis, skewness and kurtosis values were checked. After proving the normal distribution (homogeneity) of the data, structural accuracy for the factor structures was tested. At this stage, discriminant (AVE) and convergent (CR) validity were tested. In the last stage, parametric mean comparisons (t-test and F-test) were made for the two groups of samples considered and the analysis process was terminated.

Demographic Profile of Participants

The data regarding the participants in the research sample were separated through frequency analysis and presented in the Table 2. Participants were allowed to choose more than one option in the question "source of nutrition information". In this context, it was determined that HSE made 317 markings and FBSE made 410 markings. The relevant questions were separated according to their frequencies and percentages through multiple-answer analysis based on the total number of markings. The results showed that participants in both sample groups made more than one mark (115 healthcare sector employees and 187 food and beverage sector employees).

Table 2
Demographic Profile of Participants

Health Sector			Food and Beverage Sector		
Gender	n	%	Gender	n	%
Male	75	37,1	Male	161	72,2
Female	127	62,9	Female	62	27,8
Marital Status	n	%	Marital Status	n	%
Married	133	65,8	Married	147	65,9
Single	69	34,2	Single	76	29,1
Educational Background	n	%	Educational Background	n	%
Primary education	2	1	İlköğretim	63	28,2
High school	20	9,9	Lise	51	22,9
Associate Degree	31	15,3	Ön Lisans	37	16,6
Licence	121	59,9	Lisans	43	19,3
Postgraduate	28	13,9	Lisansüstü	29	13
Age	n	%	Age	n	%
18–25	39	19,3	25 years and under	32	14,4
26–30	40	19,8	26–30	36	16,1
31–35	37	18,3	31–35	51	22,9
36–40	35	17,3	36–40	42	18,8
41 and over	51	25,2	41 and over	62	27,8
Monthly Income	n	%	Monthly Income	n	%
Minimum wage or less	11	5,4	Minimum wage or less	38	17
11.500–18.000 TL	45	22,3	11.500–18.000 TL	67	30,1
18.001-23.000 TL	103	51	18.001-23.000 TL	25	11,2
23.000–28.000 TL	12	5,9	23.000–28.000 TL	29	13
28.001-33.000 TL	4	2	28.001-33.000 TL	23	10,3
33.001 TL and above	27	13,4	33.001 TL and above	41	18,4
Job	n	%	Job	n	%
Technician	32	15,8	Support Staff	44	19,7
Doctor/Physician	29	14,4	Service Personnel	49	22
Midwife	31	15,3	Kitchen staff	37	16,6
Nurse	63	31,2	Bar Staff	24	10,8
Support Staff	28	13,9	Sous Chef	27	12,1
Health Officer/Civil Servant	19	9,4	Executive Chef	42	18,8
Professional experience	N	%	Professional experience	n	%
0–5 years	69	34,2	0–5 years	41	18,4
6–10 years	37	18,3	6–10 years	47	21,1
11–15 years	34	16,8	11–15 years	36	16,1
16–20 years	36	17,8	16–20 years	56	25,1
21 years and above	26	12,9	21 years and above	43	19,3
Managerial Duty	n	%	Managerial Duty	n	%
Yes	23	11,4	Yes	72	32,3
Nor	177	87,6	Nor	151	67,7

Health Sector			Food and Beverage Sector		
Gender	n	%	Gender	n	%
Healthy Nutrition Education	n	%	Healthy Nutrition Education	n	%
Received	94	46,5	Received	57	25,6
Not Received	108	53,5	Not Received	166	74,4
Dietitian Support in the Last Year	n	%	Dietitian Support in the Last Year	n	%
Received	28	13,9	Received	76	34,1
Not Received	174	86,1	Not Received	147	65,9
I Had/Still Have a Diet Program	n	%	I Had/Still Have a Diet Program	n	%
Yes	69	34,2	Yes	92	41,3
No	133	65,8	No	131	58,7
Visit to the Internal Medicine Polyclinic Regarding Weight Problems in the Last Year	n	%	Visit to the Internal Medicine Polyclinic Regarding Weight Problems in the Last Year	n	%
Examined	20	9,9	Examined	42	18,8
Not Examined	182	90,1	Not Examined	181	81,2
Source of Information on Nutrition	n	%	Source of Information on Nutrition	n	%
Family	74	17,7	Family	38	9,3
School	66	15,8	School	64	15,6
Social media	111	26,6	Social media	149	36,3
Health personnel	117	28,1	Health personnel	73	17,8
Newspapers, Magazines, TV Programs	49	11,8	Newspapers, Magazines, TV Programs	86	21
Paying Attention to Nutrition in Daily Life	n	%	Paying Attention to Nutrition in Daily Life	n	%
Always	62	30,7	Always	98	44
Sometimes	126	62,4	Sometimes	69	30,9
None	14	6,9	None	56	25,1

When the demographic data of the participants is examined, it is seen that the total number of participants is close to each other. It is seen that the proportion of women is high in HSEs and the proportion of men is high in FBSEs. While participants with undergraduate and graduate education constitute more than half of the total participants in HSEs, participants with primary and high school education constitute half of the total participants in FBSEs. It is seen that the education level of HSEs is higher than that of FBSEs. The lack of formal education required to work in the health sector is seen as the main reason for this situation. Certificates received from non-formal education institutions may be sufficient to work in FBS. While the monthly income level in HSEs is concentrated in the range of 18,001–23,000 TL, in FBSEs the concentration is in the range of 11,500 – 18,000 TL. The rate of HSEs receiving healthy nutrition education (46.5%) is higher than FBSEs (25.6%). FBSEs were more likely to receive dietitian support in the last year (34.1%), to have followed a diet program before or to be currently following it (41.3%), and to have gone to the internal medicine outpatient clinic for weight problems in the last year (18.8%). Their rates are higher than those of HSEs. While almost all HSEs (93.1%) sometimes or always pay attention to their daily diet, this rate is 74.9% for FBSEs. Social media is among the sources where participants get nutrition information. It is important for both groups. While health personnel and family are the priority for FBSEs, newspapers, magazines, TV programs and health personnel are other important sources of information for FBSEs.

Validity, Reliability and Comparison Analysis

The scale used within the scope of the study was primarily subjected to reliability analysis. During the analysis, it was determined that items coded I1 and I15 negatively affected the reliability level. Therefore, both items were removed from the analysis. The reliability level of the remaining 19 items was obtained as $\alpha = 0.779$. This value shows that the data obtained has a good level of reliability (Ural and Kılıç, 2006). Before proceeding with advanced analysis in the study, it was tested through the normality test whether the items for which the scale was created were distributed homogeneously or not, to decide on the type of analysis. After checking the skewness and kurtosis values, it was seen that all values were between - 1.5 and + 1.5. Thus, it was decided that the data obtained was normally distributed (George and Mallery, 2010; Tabachnick and Fidell, 2013) and parametric tests were preferred in data analysis.

The structural validity of the scale used in data collection was tested with confirmatory factor analysis (CFA). 4 dimensions of the scale were analyzed through AMOS24. For the Nutritional Knowledge (NK) dimension tested, $\alpha = 0.891$; $\alpha = 0.708$ for Emotion Towards Nutrition (EN); It was obtained as $\alpha = 0.742$ for Positive Nutrition Habits (PSNH) and $\alpha = 0.726$ for Poor Nutrition Habits (PONH). $AVE \geq 0.50$ for all sizes; It was observed that the assumption of $AVE < CR \geq 0.70$ was met. Thus, it was decided that all factor structures provided combination and discriminant validity (Baltacı, 2021). All factor loadings

exceeded the 0.60 threshold. Fit indices for the resulting confirmatory model were $GFI \geq 0.90$; $CFI \geq 0.90$; $RMSEA \leq 0.08$; $CMIN/DF$ was obtained as ≤ 0.05 . These coefficients proved that the dimensions in the factor analysis model were structurally confirmed (see table 3).

Table 3. Reliability and Construct Validity (CFA) Analysis										
Factors and Items	Factor Loadings	AVE	CR	Normality Test		Sample		t-test		α
				Skewness	Kurtosis	HSE		p	t	
						\bar{x}	\bar{x}			
						FBSE				
Nutritional Knowledge (NK)						3,97	3,91	,258	,689	
I2	,89	,711	,770	-1,043	1,392	3,87	3,91			,891
I3	,93			-1,276	1,461	3,94	3,78			
I4	,86			-1,191	1,403	3,91	3,85			
I5	,67			-1,626	1,121	4,17	4,09			
Emotion Towards Nutrition (EN)						2,98	3,26	,038*	2,789	
I6	,71	,620	,825	-,421	-,795	3,36	3,67			,708
I7	,82			-,077	-1,226	3,08	3,51			
I8	,74			,439	-,888	2,53	3,07			
I9	,76			-,514	-,681	3,31	3,44			
I10	,81			,985	-,134	2,16	1,88			
I11	,87			-,660	-,583	3,42	3,97			
Positive Nutrition Habits (PSNH)						3,53	3,81	,049*	1,008	
I12	,71	,607	,757	-,526	-,610	3,54	4,16			,742
I13	,86			-,477	-,690	3,70	3,40			
I14	,82			-,154	-,924	3,21	3,91			
I16	,78			-,658	-,343	3,69	3,76			
Poor Nutrition Habits (PONH)						2,19	1,62	,032*	3,485	
I17	,88	,637	,799	,348	-,772	2,61	2,08			,726
I18	,75			,821	-,018	2,22	1,53			
I19	,71			1,231	-,983	1,93	1,76			
I20	,84			,558	-,656	2,33	1,48			
I21	,80			1,146	,841	1,87	1,24			
CFA Fit Indices										
		CMIN=282,710		GFI=.927		RMSEA=.048				
		DF=146		AGFI=.897						
		CMIN/DF=1,936		CFI=.903						

The factorial averages of both groups in the sample were compared via t-test. According to the arithmetic statistics obtained, it was seen that the NK level was above the average in both groups and there was no statistically significant difference between them ($t = 0.689$; $p > 0.05$). A significant difference was detected between the participants' EN levels depending on the sector they work in. The result obtained showed that the EN level of FBSEs ($\bar{x}=3.26$) was farther from indecision than that of HSEs ($\bar{x}=2.98$) ($t = 0.038$; $p > 0.05$). FBSEs are relatively more conscious about PSNH ($\bar{x}=3.81$) than HSEs ($\bar{x}=3.53$). However, the PONH level of FBSEs ($\bar{x}=1.62$) is lower than that of HSEs ($\bar{x}=2.19$).

Conclusion

This study determines the factors affecting healthy nutrition. For this purpose, data obtained from healthcare sector employees and food and beverage sector employees were compared. The results showed that the healthy nutrition levels of both groups were almost equal. We expected that the constant cooking of food and beverage industry workers would desensitize them to nutrition. However, food and beverage industry workers were resistant to

maintaining a healthy diet. There is no significant difference between the knowledge levels of both groups. However, food and beverage industry employees were more optimistic about emotion towards nutrition, positive nutrition habits and poor nutrition habits. In addition, the healthy nutrition level of healthcare workers who received professional support was not affected. Dietitian support was an important factor for food and beverage industry employees. This proved that dietitian support is important in gaining healthy eating habits in individuals who have not received formal education.

Discussion & Suggestion

In this study, two groups with formal and informal knowledge about nutrition were compared. In addition, demographic questions were diversified to make in-depth interpretations of the results obtained. The analyses performed in the study primarily showed that the scale used was validated. The demographic results are fully consistent with the two groups selected for the sample. Namely, in Turkey, as in the international arena, it is mandatory to receive formal education to work in the health sector. Except for support personnel (security, cleaning, etc.), people who complete a certain formal education curriculum and graduate from the program are employed in health-related business lines (doctor, nurse, technician, civil servant, etc.) in the health sector. Although formal education is available in the food and beverage industry, this is not mandatory for employment in the sector. People who have no formal education but have experience can be employed in this sector (Öney, 2016). Studies confirm this information. In his study to determine the nutrition knowledge levels of chefs, Çekal (2007) concluded that more than half of the participating cooks had primary and secondary school education, while the majority of them did not receive formal vocational training. When the collected data are examined, it is seen that the high level of education of HSEs and the fact that FBSEs are predominantly at high school and below the level of education supports this claim, which is similar to the literature.

The level of knowledge about nutrition in both groups is close to each other. When the emotional dimension towards nutrition is considered, it can be stated that HSEs are relatively more conscious. The answers given by both groups to the dimension consisting of expressions regarding satisfaction with the consumption of chocolate, fast food, delicatessen products, fried foods and sherbet desserts are at the level of indecision. However, HSEs are relatively dissatisfied with consuming such foods. The fact that FBSEs are on the production side and constantly produce the products in question may cause the harms of such products to be ignored after a while and there will be no harm in consuming them. The desensitization of individuals to some stimuli they are exposed to in daily life (Yumrukuz, 2017) and the fact that the movements they constantly repeat are accepted/normalized after a certain rate of repetition, even if they are unethical (Misirli and Kuzu, 2019), form the basis for explaining the obtained result.

Regarding negative eating habits, both groups are far from indecisive and have a positive average. However, FBSEs are in a more moderate position on this issue. The same situation is seen with bad eating habits. Participating groups are free from bad eating habits. FBSEs have a clearer distance stance than HSEs. When detailed analysis is made for both cases, it is seen that the rate of FBSEs paying attention to nutrition in daily life is higher than that of HSEs. However, the number of participating FBSEs who received support from a dietitian in the last year or who are currently on a diet program and who visited the internal medicine outpatient clinic due to weight problems in the last year is higher than the number of HSEs. This clearly shows that professional support has a significant impact on the acquisition of healthy eating habits and the continuation of the established order (Ahn, Park and Kim, 2018; Hull et al., 2016).

Considering the samples of studies conducted on a similar subject, it is seen that receiving nutrition education is important in acquiring healthy nutrition behaviour. Özenoğlu et al. (2017), in their study conducted with undergraduate students of medical faculty, nutrition dietetics, midwifery and nursing departments, concluded that the department in which they are educated affects eating habits. Onurlubaş et al. (2015) revealed that individuals who received healthy nutrition education from the formal education curriculum through participation in events such as conferences and panels believed that they ate healthy in daily life. Individuals who received healthy nutrition education stated that they could not eat healthily in daily life. In their study conducted with a group of physical education undergraduate students, Poplawska et al. (2018) revealed that senior students ate healthier than first-year students and were selective about food and beverages. Grabia et al. (2022) provided healthy nutrition education to young athletes in adolescence through individual and group training. The results of the study revealed that the training provided encouraged healthy eating behaviour in both groups, although at different levels.

In addition to the education received on healthy nutrition, individual health status and the work done are effective. Friis et al. (2016) revealed that individuals with diabetes are conscious about healthy nutrition. Baranauskas et al. (2015) concluded that endurance athletes who work professionally in high-performance sports are very sensitive to healthy nutrition. Sargin and Güleşçe (2022) concluded that individuals employed in the teaching profession have high attitudes towards healthy nutrition.

When the results obtained in the study are evaluated in general in the light of this information, it can be stated that having received formal health education or working professionally in the food and beverage business catalyzes healthy eating behaviour. In addition, it has been observed that individuals who receive professional support on nutrition, even if they have not received formal health or nutrition education, can develop positive behaviour regarding healthy nutrition. This study discusses the attitudes of HSE and FBSE towards healthy nutrition within the framework of demographic variables. Bringing together different professional groups in other studies will contribute to the generalizability of the results obtained. In addition, using socio-demographic parameters such as personality traits, work tempo, and daily working hours in comparison will contribute to filling the existing literature gap.

Declarations

Ethics approval and consent to participate

This study includes an empirical research. It required collecting data from the sample group through a survey. Permission for data collection and application was received from Hasan Kalyoncu University Scientific Research and Ethics Commission on 20.06.2023. Participation approvals were received via "google forms". The first question asked to the participants was "I voluntarily agree to participate in the survey." Survey questions were opened for

participants who answered "yes" to this question. A "thank you message" was published for those who marked "No" and a warning was sent saying "your survey has ended".

Consent for publication

Personal information (mobile number, e-mail, residence address, citizenship identification number, etc.) of the participants participating in the research was not requested. They only answered general questions posed. Consent to participate in the survey was received electronically online. Those who voluntarily participated in the data collection ticked "yes". So we moved on to the survey questions step. Those who did not want to participate chose "no". Thus, they saw the "thank you message" and the survey process ended.

The first message potential participants encountered was as follows;

This study has a scientific nature. Participating in the survey is voluntary. It is not mandatory. No personal data is requested from you. You can leave the survey process at any time you wish. The data obtained from you will be used only for scientific publication purposes. If you accept that you are participating in the survey voluntarily, please select the "yes" option. Then you can start filling out the survey questions. If you do not voluntarily participate in this survey, please select the "no" option. Thus, you can end the process without moving on to the survey questions step. If you have any questions, you can contact us via the e-mail addresses provided below.

Thank you for your contributions.

Availability of data and materials

The data collected for the study's analyzes are available online. It can be shared upon request. You can sincerely contact us via the email address below;

furkan.baltaci@hku.edu.tr

Competing interests

There are no competing interests or conflicts of interest between the authors of the study or with any institution.

Funding

If our paper is accepted for publication, the open access fee will be covered by TUBITAK in accordance with the agreement between Springer and TUBITAK (TUB1). At this current stage, we cannot state that it will be directly funded as the evaluation process has not even started yet.

Authors' contributions

Dr. Furkan BALTACI collected data from the food and beverage industry. It formed the methodology part of the study. He made his analysis. He supported the writing of the literature section.

Dr. Sedat ÖZDEMİR collected data from the health sector. Wrote the literature section of the study. He supported the conclusion and recommendations section.

Acknowledgements

Not applicable

There is no person or institution to thank.

Authors' information (optional)

Dr. Furkan BALTACI works as an Associate Professor at Hasan Kalyoncu University in Türkiye. He is the head of the Department of Gastronomy and Culinary Arts. He is also the vice dean of the Faculty of Tourism.

Dr. Sedat Özdemir works at the Islamic Sciences and Technology University in Türkiye. He works as an Assistant Professor at the Faculty of Medicine. He is also the chief physician of Oğuzeli State Hospital. He is an internal medicine specialist.

References

1. Açıkgöz S. (2006). Üniversite öğrencilerinin beslenme alışkanlıkları ile özyetkinlik ve iyimserlik ilişkisi, Ankara Üniversitesi, Sağlık Bilimleri Enstitüsü, Yayınlanmamış Yüksek Lisans Tezi, Ankara. Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp>
2. Ahn, J. A., Park, J., & Kim, C. J. (2018). Effects of an individualised nutritional education and support programme on dietary habits, nutritional knowledge and nutritional status of older adults living alone. *Journal of Clinical Nursing*, 27(9-10), 2142-2151. <https://doi.org/10.1111/jocn.14068>
3. Alpar, SE, Senturan, L, Karabacak, U. & Sabuncu, N. (2008). Change in the health-promoting lifestyle behaviour of Turkish University nursing students from beginning to end of nurse training. *Nurse Education in Practice*, 8;382-388. <https://doi.org/10.1016/j.nepr.2008.03.010>

4. Al-Qahtani, M. F. (2015) Health-promoting lifestyle behaviors among nurses in private hospitals in Al-Khobar, Saudi Arabia. *The Journal of the Egyptian Public Health Association* 90: 29-34. <https://doi.org/10.1097/01.EPX.0000461325.97703.8a>
5. Arslan, P., Karaağaoğlu, N., Duyar, İ., & Güleç, E. (1993). Yüksek öğrenim gençlerinin beslenme alışkanlıklarının puanlandırma yöntemi ile değerlendirilmesi. *Beslenme ve Diyet Dergisi*, 22(2), 195-208. Retrieved from <https://www.beslenmevediyetdergisi.org/index.php/bdd/article/view/614>
6. Aykol, N. (1996), Okul öncesi ve ilkokul çocuklarında obesite prevalansının belirlenmesi, obeslerde psikolojik bozuklukların tespiti, serum lipid ve askorbik asit düzeyleri ile kan basıncı arasındaki ilişkinin araştırılması, Hacettepe Üniversitesi, Sağlık Bilimleri Enstitüsü, Nutrisyon ve Metabolizma Programı Doktora Tezi, Ankara. Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp>
7. Baltacı, F. (2020). Turizmin sürdürülebilir gelişiminde yerel halkın davranışsal rolü, çevresel tutumu ve verdiği destek arasındaki ilişki: Alanya örneği. *Journal of Economy Culture and Society*, 63, 213-236. <https://www.doi.org/10.26650/JECS2020-0067>
8. Baranauskas, M., Stukas, R., Tubelis, L., Žagminas, K., Šurkienė, G., Švedas, E., ... & Abaravičius, J. A. (2015). Nutritional habits among high-performance endurance athletes. *Medicina*, 51(6), 351-362. <https://doi.org/10.1016/j.medici.2015.11.004>
9. Baysal A. (2007), Beslenme. Şahin Matbaacılık: Ankara.
10. Besler, H.T., Rakıcıoğlu, N., Ayaz, A., Demirel, Z.B.....& Özeli H.G., (2015), Türkiye'ye özgü beslenme rehberi, Hacettepe Üniversitesi Sağlık Bilimleri Fakültesi Beslenme ve Diyetetik Bölümü, Ankara, 11-13. Retrieved from <https://tekinakpolat.com/wp-content/uploads/2017/12/turkiye-beslenme-rehberi.pdf>
11. Beydağ, KD, Uğur, E, Sonakın, C. & Yürügen, B. (2014). Sağlık ve yaşam dersinin üniversite öğrencilerinin sağlıklı yaşam biçimi davranışlarına etkisi. *Gümüşhane Üniversitesi Sağlık Bilimleri Dergisi*, 3, 599-609. Retrieved from <https://dergipark.org.tr/en/download/article-file/84240>
12. Bilici, S. (2008), Optimal Beslenme ve Sağlık, T.C. Sağlık Bakanlığı, Temel Sağlık Hizmetleri Genel Müdürlüğü Beslenme ve Fiziksel Aktiviteler Daire Başkanlığı, Ankara.
13. Çekal, N. (2007). Aşçıların beslenme (besin öğeleri) bilgi düzeyleri üzerine bir araştırma. *Anatolia: Turizm Araştırmaları Dergisi*, 18(1), 64-74. Retrieved from <https://dergipark.org.tr/en/download/article-file/154359>
14. Demirci, M. (2003), Beslenme, Rebel Yayıncılık Basım, Tekirdağ.
15. Erten, M. (2006). Adıyaman ilinde eğitim gören üniversite öğrencilerinin beslenme bilgilerinin ve alışkanlıklarının araştırılması. Gazi Üniversitesi, Aile Ekonomisi ve Beslenme Anabilim Dalı, Yayınlanmamış Yüksek Lisans Tezi, Ankara. Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp>
16. Demir, G. T., & Cicioğlu, H. İ. (2019). Sağlıklı beslenmeye ilişkin tutum ölçeği (SBİTÖ): Geçerlik ve güvenilirlik çalışması. *Gaziantep Üniversitesi Spor Bilimleri Dergisi*, 4(2), 256-274. <https://doi.org/10.31680/gaunjss.559462>
17. Franciscato, S. J., Janson, G., Machado, R., Lauris, J. R. P., Andrade, S. M. J. D., & Fisberg, M. (2019). Impact of the nutrition education program Nutriamigos® on levels of awareness on healthy eating habits in school-aged children. *Journal of human growth and development*, 29(3), 390-402. <http://dx.doi.org/10.7322/jhgd.v29.9538>
18. Friis, K., Vind, B. D., Simmons, R. K., & Maindal, H. T. (2016). The relationship between health literacy and health behaviour in people with diabetes: a Danish population-based study. *Journal of diabetes research*, 2016, 1-8. <https://doi.org/10.1155/2016/7823130>
19. George, D., & Mallery, M. (2010). SPSS for Windows Step by Step: A Simple Guide and Reference, 17.0 update, Pearson: Boston
20. Grabia, M., Markiewicz-Żukowska, R., Bielecka, J., Puścion-Jakubik, A., & Socha, K. (2022). Effects of Dietary Intervention and Education on Selected Biochemical Parameters and Nutritional Habits of Young Soccer Players. *Nutrients*, 14(18), 3681. <https://doi.org/10.3390/nu14183681>
21. Gorski, M. T., & Roberto, C. A. (2015). Public health policies to encourage healthy eating habits: recent perspectives. *Journal of Healthcare Leadership*, 81-90. <https://www.tandfonline.com/doi/full/10.2147/JHL.S69188>
22. Gül, T. (2011). *Sağlıklı beslenme kavramı ve üniversite öğrencilerinin beslenme alışkanlıklarına yönelik tutum ve davranışları: Çukurova Üniversitesi Örneği*. Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Ekonometri Anabilim Dalı Yüksek Lisans Tezi. Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp>
23. Güneş, Y. & Turhan, R. (2006), Beslenmenin gelişim ve öğrenmedeki etkisi, *Özel Ekin Koleji Empati Dergisi*, 3(30), 1-8. Retrieved from <http://www.ekin.k12.tr/dosya/empati30.pdf>
24. Hacıhasanoğlu, R., Yıldırım, A., Karakurt, P. & Sağlam, R. (2011). Healthy lifestyle behaviour in university students and influential factors in eastern Turkey, *International Journal of Nursing Practice*, 17, 43-51. <https://doi.org/10.1111/j.1440-172X.2010.01905.x>
25. Hergüner, G. Yücel, A. S. Yaman, Ç. Sevil, Ü. Korkmaz, M. & Küçüközkan, Y. (2019). Sağlık ve Beslenme ilişkisinin incelenmesi, 2. Uluslararası Sağlıklı Yaşam Kongresi, 10-11 Ekim 2019. İstanbul. Retrieved from https://gavispanel.gelisim.edu.tr/Document/dkavgaoglu/20191029162946557_64333dd7-2b97-4af0-ae7d-dbb3f99d2fea.pdf
26. Hull, M. V., Jagim, A. R., Oliver, J. M., Greenwood, M., Busted, D. R., & Jones, M. T. (2016). Gender differences and access to a sports dietitian influence dietary habits of collegiate athletes. *Journal of the International Society of Sports Nutrition*, 13(1), 38. <https://doi.org/10.1186/s12970-016-0149-4>
27. Kadioğlu, M. & Ergün A. (2015). Üniversite öğrencilerinin yeme tutumu, öz-etkililik ve etkileyen faktörler. *Marmara Üniversitesi Sağlık Bilimleri Enstitüsü Dergisi*. 5(2), 96-104. <https://doi.org/10.5455/musbed.20150309011008>
28. Karaağaoğlu, N. & Samur, G. E. (2015), *Anne ve çocuk beslenmesi*, Pegem Akademi, Ayrıntı Basım Yayın ve Matbaacılık, Ankara.
29. Kim, S. ve Choe, J.Y. (2019). Testing an attribute-benefit-value-intention (ABVI) model of local food consumption as perceived by foreign tourists, *International Journal of Contemporary Hospitality Management*, 31 (1), 123-140. <https://doi.org/10.1108/IJCHM-10-2017-0661>

30. Kocatepe, D., & Tırıl, A. (2015). Sağlıklı beslenme ve geleneksel gıdalar. *Journal of Tourism & Gastronomy Studies*, 3(1), 55-63. Retrieved from <https://jotags.net/index.php/jotags/article/view/107/145>
31. Kurbanova, H. A. (2023). Assessment of parents' awareness of healthy eating, eating habits and frequency of consumption of individual foods. *Scientific Progress*, 4(2), 287-291. Retrieved from <https://cyberleninka.ru/article/n/assessment-of-parents-awareness-of-healthy-eating-eating-habits-and-frequency-of-consumption-of-individual-foods/viewer>
32. Lê, J., Dallongeville, J., Wagner, A., Arveiler, D., Haas, B., Cottel, D., ... & Dauchet, L. (2013). Attitudes toward healthy eating: a mediator of the educational level–diet relationship. *European journal of clinical nutrition*, 67(8), 808-814. Retrieved from <https://www.nature.com/articles/ejcn2013110>
33. Leiva, O. A., Martínez, S. M., & Celis-Morales, C. (2015). Effects of an intervention to reduce cardiovascular risk factors in university students. *Revista médica de Chile*, 143(8), 971-978. <https://doi.org/10.4067/s0034-98872015000800002>
34. Maguire, E. R., & Monsivais, P. (2015). Socio-economic dietary inequalities in UK adults: an updated picture of key food groups and nutrients from national surveillance data. *British Journal of Nutrition*, 113(1), 181-189. <https://www.doi.org/10.1017/S0007114514002621>
35. Menotti A, Puddu PE, Maiani G. & Catasta, G. (2015). Lifestyle behaviour and lifetime incidence of heart diseases. *International Journal of Cardiology*, 201, 293-299. <https://doi.org/10.1016/j.ijcard.2015.08.050>
36. Milli Eğitim Bakanlığı, (2011), Sağlıklı beslenme, Mesleki Eğitim ve Öğretim Sisteminin Güçlendirilmesi Projesi, Halkla İlişkiler ve Organizasyon. Retrieved from <https://sagliklibesleniyorum.meb.gov.tr/>
37. Misirli, Ö., & Kuzu, A. (2019). Öğretmen adaylarının sosyal medya etiğine ilişkin görüşlerinin etik ikilem senaryolarıyla incelenmesi. *Eskişehir Osmangazi Üniversitesi Sosyal Bilimler Dergisi*, 20, 1093-1107. <https://doi.org/10.17494/ogusbd.555129>
38. Onurlubaş, E., Doğan, H. G., & Demirkıran, S. (2015). Üniversite öğrencilerinin beslenme alışkanlıkları. *Journal of Agricultural Faculty of Gaziosmanpaşa University (JAFAG)*, 32(3), 61-69. <https://doi.org/10.13002/jafag861>
39. Öney, H. (2016). Gastronomi eğitimi üzerine bir değerlendirme. *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, (35), 193-202. Retrieved from <https://dergipark.org.tr/en/download/article-file/1724952>
40. Özenoğlu, A., Yalınz, T., & Uzdil, Z. (2018). Sağlık eğitiminin beslenme alışkanlıkları ve sağlıklı yaşam biçimi davranışları üzerine etkisi. *Acıbadem Üniversitesi Sağlık Bilimleri Dergisi*, (3), 234-242. <https://doi.org/10.31067/0.2018.20A>
41. Pérez-Rodrigo, C., & Aranceta, J. (2001). School-based nutrition education: lessons learned and new perspectives. *Public health nutrition*, 4(1a), 131-139. <https://doi.org/10.1079/PHN2000108>
42. Ricardo, A. C., Anderson, C. A., Yang, W., Zhang, X., Fischer, M. J., Dember, L. M., ... & Townsend, R. R. (2015). Healthy lifestyle and risk of kidney disease progression, atherosclerotic events, and death in CKD: findings from the Chronic Renal Insufficiency Cohort (CRIC) Study. *American Journal of Kidney Diseases*, 65(3), 412-424. <https://doi.org/10.1053/j.ajkd.2014.09.016>
43. Popławska, H., Dmitruk, A., Kunicka, I., Dębowska, A., & Hołub, W. (2018). Nutritional habits and knowledge about food and nutrition among physical education students depending on their level of higher education and physical activity. *Polish Journal of Sport and Tourism*, 25(3), 35-41. <https://doi.org/10.2478/pjst-2018-0018>
44. Sakamaki R, Toyama K, Amamoto R, Cuhuan-Jun L. & Naotaka S. (2005). Nutritional knowledge, food habits and health attitude of Chinese university students a cross-sectional study. *Nutrition Journal*.4(1), 1-5. <https://doi.org/10.1186/1475-2891-4-4>
45. Sargın, K., & Güleşçe, M. (2022). Öğretmenlerin sağlıklı beslenmeye ilişkin tutumlarının değerlendirilmesi (Van ili örneği). *Gaziantep Üniversitesi Spor Bilimleri Dergisi*, 7(1), 1-11. <https://doi.org/10.31680/gaunjss.1000390>
46. Saygın M, Öngel K, Çalışkan S, Yağlı M, Has M, Gonca T. ve Kurt Y. (2011). Süleyman Demirel Üniversitesi öğrencilerinin beslenme alışkanlıkları, *S.D.Ü Tıp Fakültesi Dergisi*, 18 (2):43-47. Retrieved from <https://dergipark.org.tr/en/download/article-file/196841>
47. Sotos-Prieto M, Bhupathiraju SN, Falcón LM, Gao X, Tucker KL. & Mattei J. A (2015). Healthy Lifestyle Score Is Associated with Cardiometabolic and Neuroendocrine Risk Factors among Puerto Rican Adults. *The Journal of Nutrition*, 145,1531-1540. <https://doi.org/10.3945/jn.114.206391>
48. Suleiman-Martos, N., García-Lara, R. A., Martos-Cabrera, M. B., Albendín-García, L..... & Gómez-Urquiza, J. L. (2021). Gamification for the improvement of diet, nutritional habits, and body composition in children and adolescents: a systematic review and meta-analysis. *Nutrients*, 13(7), 2478. <https://doi.org/10.3390/nu13072478>
49. Tabachnick, B. G. & Fidell, L. S. (2013). *Using multivariate statistics* (Vol. 6, pp. 497-516). Boston, MA: Pearson.
50. Tayar, M. & Korkmaz, H. N. (2007) *Beslenme, Sağlıklı Yaşam*, Nobel Yayın Dağıtım: İstanbul.
51. Thiele, S., Mensink, G. B., & Beitz, R. (2004). Determinants of diet quality. *Public Health Nutrition*, 7(1), 29-37. <https://doi.org/10.1079/PHN2003516>
52. Türkiye Halk Sağlık Kurumu (2014) Retrieved from <http://beslenme.gov.tr/index.php?page=68>
53. T.C. Sağlık Bakanlığı, (2013), Türkiye Sağlıklı Beslenme ve Hareketli Hayat Programı, Retrieved from <http://beslenme.gov.tr/index.php?lang>
54. Ulaş, B. & Genç, M. F. (2010). Malatya asker hastanesinde 2007 yılında görev yapan personelin sağlıklı beslenme konusundaki tutum ve davranışları, *İnönü Üniversitesi Tıp Fakültesi Dergisi*, 17, (3), 187-193. Retrieved from <https://dergipark.org.tr/en/download/article-file/139319>
55. Ural, A., Kılıç İ. (2006). *Bilimsel araştırma süreci ve SPSS ile veri analizi*, Detay Yayıncılık: Ankara.
56. Ülker, S. (2016), Yeterli ve Dengeli Beslenme, Retrieved from http://Sabriulkerfoundation.Org/Tr/Yeterli_Ve_Dengeli_Beslenmehttp://Beslenme.Gov.Tr/Content/Files/Yayinlar/Brosurler/Saglikli_Beslenme_Serisi_Brosurleri_2007/01.Pdf
57. Vereecken, C. A., Keukelier, E., & Maes, L. (2004). Influence of mother's educational level on food parenting practices and food habits of young children. *Appetite*, 43(1), 93-103. <https://doi.org/10.1016/j.appet.2004.04.002>

58. Vettori, V., Lorini, C., Milani, C., & Bonaccorsi, G. (2019). Towards the implementation of a conceptual framework of food and nutrition literacy: Providing healthy eating for the population. *International journal of environmental research and public health*, *16*(24), 5041. <https://doi.org/10.3390/ijerph16245041>
59. Xu, X., Hall, J., Byles, J., & Shi, Z. (2015). Assessing dietary quality of older Chinese people using the Chinese Diet Balance Index (DBI). *PLoS One*, *10*(3), e0121618. <https://doi.org/10.1371/journal.pone.0121618>
60. Yılmaz, E. ve Özkan, S. (2007), Üniversite Öğrencilerinin Beslenme Alışkanlıklarının İncelenmesi, *Fırat Sağlık Hizmetleri Dergisi*, *2*(6), 87-102. Retrieved from https://www.researchgate.net/profile/Emel-Yilmaz-6/publication/292989057_Universite_ogrencilerinin_beslenme_aliskanliklarinin_incelenmesiInvestigation_of_Nutritional_Habits_in_University_Students/links/56b498e108ae2f3201130f6b/Ueniversite-ogrencilerinin-beslenme-aliskanliklarinin-incelenmesi-Investigation-of-Nutritional-Habits-in-University-Students.pdf
61. Yumrukuz, Ö. (2017). Şiddete karşı duyarsızlaşma ve sosyal medya ilişkisi üzerine bir inceleme. *Marmara İletişim Dergisi*, *(28)*, 89-106. Retrieved from <https://dergipark.org.tr/en/download/article-file/378749>
62. Yücel, A. S. Korkmaz, M. Hergüner, G. Yaman, Ç. Sevil, Ü. & Küçüközkan, Y. (2019). Çocukların Aile Özelliklerine Göre Beslenme Alışkanlıklarının İncelenmesi. 2. Uluslararası Sağlıklı Yaşam Kongresi, 10-11 Ekim 2019. İstanbul. 56-61. Retrieved from <https://www.saglikliyasamkongresi.org/eng/>

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [GraphicalAbstract.docx](#)