

The Relationship between Prospective Teachers' Nutritional Literacy and Healthy Lifestyle Behaviors

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Abstract: *In this research, it is aimed to investigate the relationship between nutritional literacy and healthy lifestyle behaviors of prospective teachers according to various variables. Correlational survey model of the quantitative research methods is used in this survey. A moderate positive relationship was found between prospective teachers' nutritional literacy and healthy lifestyle behaviors. Based on the positive relationship between nutritional literacy and healthy lifestyle behaviors, it is recommended that nutritional literacy level be associated with healthy lifestyle by giving nutrition education at all school levels and undergraduate education in order to increase the level of healthy lifestyle behaviors in individuals.*

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Introduction

A HEALTHY life and a balanced diet enable people to continue their lives with high quality and ensure that all organs in their bodies function fully and correctly. In order to give meaning to these concepts to individuals, especially in young people, individuals should be conscious about foods and have nutritional literacy.

Nutrition is one of the leading human needs thus; adequate and balanced nutrition is indispensable for a healthy life. If individuals do not take enough nutrients into their bodies, health problems arise and their productivity in their lives decreases (Mertoğlu et al., 2020). Individuals have to eat in order to continue their lives and to think and act in a healthy way. Nutrition has a great importance not only for the individual to eat healthy, but also for the society to be healthy and to develop economically. Healthy nutrition supports the physical, mental and social development of individuals. The two basic conditions of a healthy diet are balanced and adequate nutrition (Pekcan, 2012; Özmert, 2005). Since nutrition allows individuals to continue their lives in a healthy way, giving nutrition education to individuals has an important place. Among the aims of nutrition education are the individuals to lead a quality life and the promotion of appropriate and healthy food consumption in the society. Nutrition education draws attention to the development of long-term behavioral changes of individuals rather than knowledge and events about nutrition. Individual and social benefits of nutrition education, development in physical and mental health, and academic success are increased in knowledge about nutrition. Thanks to nutrition education, safe consumption of foods and awareness of this consumption take place in society (Sahu et al., 2022; Kame, 2022).

Nutritional literacy means, “the degree to which individuals have the capacity to obtain, process, and understand nutrition information and skills needed in order to make appropriate nutrition decisions” (Silk et al., 2008). Nutritional literacy in the literature; accessing, utilizing and interpreting basic nutritional information as a specific area of health literacy that reflects the ability to utilize conceptualizes it (Aktaş & Özdoğan, 2016a; Özdenk & Özcebe, 2018).

Individuals' ability to critically examine and understand information about foods; and, having the correct information about the consumption of foods is defined as nutritional literacy. Nutritional literacy also brings awareness about foods. The increase in the variety of food and the abundance of nutrition environments outside the home further increase the importance of literacy for nutrition (Aktaş & Özdoğan, 2016b). Having nutritional literacy also enables individuals to decide on healthy food choices. Individuals with sufficient nutritional literacy are expected to be aware of basic nutrition information, to understand and realize the information of nutrients, to

read simple labels and to control their skills. However, being aware of nutritional literacy ensures that the importance of nutrition education and the quality of nutrition is realized (Demir Özdek & Özcebe, 2018). The existence of nutrition awareness in individuals brings together healthy individuals and healthy societies as well (Arslan & Mertoğlu, 2022). Nutritional literacy is defined as the whole behavior of consuming or not consuming foods, sharing objective and real information about foods or not, and making the decision to choose the source of the information obtained about foods (Zöllner et al., 2009). Increasing the level of nutritional literacy in individuals has been determined as an important factor in maintaining a healthy life in society and preventing non-communicable diseases. One of the situations that negatively affect nutritional literacy is the publication of unproven articles in newspapers, websites and magazines (Chandrasekara et al., 2022).

According to WHO (World Health Organization) (2019), healthy lifestyle has been defined as,

1. A way of living that lowers the risk of being seriously ill or dying early. Not all illness and disease is preventable: however a large proportion of deaths, particularly those from coronary heart disease and lung cancer, can be avoided.
2. A way of living that helps you enjoy more aspects of your life. Health is not just about avoiding a disease or illness. It is about physical, mental and social well-being.
3. A way of living helps your whole family. When you adopt a healthy lifestyle you provide a more positive role model for other people in your family, particularly children.

A healthy life brought about by healthy nutrition enables individuals to maintain their health and increase their quality of life (Pekcan, 2012; Özmert, 2005). In the absence of a healthy diet, some health problems also arise. The resulting imbalance is generally in direct proportion to the density of the nutrients consumed. The basics of unhealthy nutrition in individuals; It creates situations caused by lack of awareness about foods and economic difficulties (Saygin et al., 2011). Lifestyles that support a healthy life are one of the most important factors of health status. However, this lifestyle plays an important role in supporting and maintaining a healthy life. Health promotion is receiving increasing attention in societies. Healthy lifestyle behaviors in societies and individuals are one of the most important aspects of health promotion. With the acquisition of accurate and objective information about healthy living behaviors in society, lifestyles that support healthy life can exist. In particular, individual lifestyles emerge with the construction of valuable healthy structures (Abbasi, 2020; Ahmadi & Roosta, 2015; Davis & De Guzman, 2022; Lopes Sousa et al., 2014).

The Statement of Problem

Many studies (Arslan & Mertoğlu, 2022; Aksoy & Uçar, 2014; Dilsiz, 2020; Akgün Kostak et al., 2014; Özyazıcıoğlu et al, 2011; Vural & Bakır, 2015) on nutritional literacy and healthy lifestyle behaviors have been found in the literature and literature. Nutrition is a condition that exists for individuals throughout their lives and must be maintained. A healthy diet is necessary and important for a healthy life. Every individual deserves a comfortable and peaceful life; however, individuals may not attach sufficient importance to their nutrition due to their conditions and lifestyles. However, it is thought that nutritional literacy, which is present or absent in individuals, may affect healthy lifestyle behaviors positively or negatively. For this reason, the level of the relationship between nutritional literacy and healthy lifestyle behaviors in individuals is considered important. However, studies on nutritional literacy and healthy lifestyle behaviors are scarce.

The core of research question is that there is a certain correlation between the nutritional literacy of future teachers and healthy lifestyle, and the correlation coefficient may be influenced by factors such as gender, living environment, and healthy nutrition status. The research sought answers to the following questions:

- What is the nutritional literacy and healthy lifestyle behavior levels of prospective teachers?
- How does prospective teachers' nutritional literacy and healthy lifestyle behavior levels affect the gender of prospective teachers?
- How does the place where teacher candidates live affect prospective teachers' nutritional literacy and healthy lifestyle behavioral levels?
- How does prospective teachers' nutritional literacy and healthy lifestyle behavior levels affect the healthy nutrition status of prospective teachers?
- What is the correlation coefficient between prospective teachers' nutritional literacy and healthy lifestyle behaviors?

Method and Materials

The method of the research was determined as a correlational survey model, one of the quantitative research methods. The correlational survey model is used to determine the extent to which the factor values of two or more factors are related or vary in an identifiable model (Survey and Correlational Research Design, 2022, ss: 240). The sample of this research is simple random sample. Individuals from a population are randomly selected. Every individual has an equal right to be elected. This study was based on a single limitation. That limitation is that individuals are teacher candidates. Participation in the study is on a voluntary basis (Thomas, 2023). The study group consists of 273 prospective teachers studying at a state university in Istanbul (women = 212, 77.7 %; men = 61, 22.34%). Of the 273 people, 172 (63%) living with family, 35 (12,8%) living with friends, 26 (9.5%) living in state

dormitories, 26 (9.5%) living in private dormitories, and 14 (5.1%) living alone. The scales were sent to the prospective teachers once via e-mail as a Google Forms. The mail explained the purpose of the study, why they were invited and the time commitment required. Prospective teachers participated in the research voluntarily.

Data Collection Tools

Nutritional literacy Scale (NLS)

In this study, the Adolescent Nutritional literacy Scale, developed by Bari (2012) and adapted to Turkish by Sonay Türkmen, Filiz, & Kalkan (2017) and tested for validity and reliability, was used to determine the nutritional literacy levels of teacher candidates. The scale consists of 22 items. Items 1, 2, 3, 4, 5, 6, 7 are reverse items. Each item is of a Likert type, which can score between 1 and 5 (1 = I strongly disagree, 2 = I do not agree, 3 = I am undecided, 4 = I agree, 5 = I completely agree). The Cronbach alpha value of the scale is 0.80. In this study, the Cronbach alpha value of the scale was determined as 0.86. The increase in the scores of adolescents shows that the level of nutritional literacy also increases.

Health Promoting Lifestyle Profile - II (HPLP II)

In this study, developed by Walker et al. (1996) and adopted to Turkish by Bahar et al. (2008) and tested for the validity and reliability of the Health Promoting Lifestyle Profile II (HPLP II) which consists of 52 items was used. There is no reverse item in the scale. The scale is a 4-point Likert scale: (1 = never, 2 = sometimes, 3 = often, 4 = regularly). According to HPLP II scale information; The highest score that can be obtained is 208, and the lowest score is 52. The Cronbach alpha value of the scale is 0.92. In this study, the Cronbach alpha value of the scale was determined as 0.93.

Data Analysis

Data analysis of the research was done with the SPSS Package Program. Descriptive analysis was used for the data of the research. Descriptive analysis provides information to the researcher about the distribution of the data and determines the similarities between the variables (An Overview of Descriptive Analysis, 2022). Independent samples t-test was used in the analyzes for the NLS ($N = 273 > 30$, $p = 0.06 > 0.05$) and HPLP II ($N = 273 > 30$, $p = 0.063 > 0.05$). In all analyses, alpha was set to $p = 0.05$. Correlation analysis was performed to determine the relationship between the two scales. Since the variances are normally distributed, Pearson correlation coefficient is pre-

ferred. In order to interpret the relationship between the two scales, $p < 0.05$ and the coefficient should be between -1 and +1 (Pearson Correlation, 2022).

Results

The aim of this study is to examine the relationship between prospective teachers' and healthy lifestyle behaviors according to various variables. In this section, the findings obtained from the research questions are presented below.

According to **Table 1**, it is seen that the average scores of prospective teachers from NLS are high. It is seen that the average scores of the prospective teachers from HPLP II are in the middle value.

When **Table 2** is examined, it is seen that the NLS scores of the prospective teachers make a significant difference in favor of the women ($p < 0.05$). It has been determined that female prospective teachers' NLS score averages are higher than male prospective teachers' NLS score averages. It has been determined that the average scores of female prospective teachers from HPLP II are higher than the average points of male prospective teachers from HPLP II. However, it is seen that the HPLP II scores of the prospective teachers do not make a significant difference according to gender ($p > 0.05$).

When **Table 3** is examined, the NLS scores of the prospective teachers do not make a significant difference according to the place they live. The highest average score (84.74) was found among prospective teachers living alone. It is seen that prospective teachers' HPLP II scores make a significant difference according to the places they live. Significant differences in the analysis; it was determined among those living with family and with friends, between those living in a state dormitory and with family, between those living in a private dormitory and alone, among those living alone and with friends and among those living alone and living in a state dormitory.

In **Table 4**, it is determined that the NLS scores of the prospective teachers made a significant difference according to their healthy nutritional status ($p < 0.05$). The mean NLS score of the prospective teachers who think they are eating healthy (79.88) is higher than the mean score of NLS (75.67) of the prospective teachers who do not think they eat healthy. It was determined that prospective teachers' HPLP II scores made a significant difference according to their health status ($p < 0.05$). The mean score of prospective teachers who think they are eating healthy (135.54) in HPLP II is higher than the mean score of prospective teachers who think they are eating healthy (123.41) from HPLP II.

When **Table 5** is examined, it is seen that there is a moderately positive and significant relationship between prospective teachers' nutritional literacy and healthy lifestyle behaviors. This means that as the prospective

Table 1. Prospective Teachers' NLS and HPLP II Scores.

Measure	N	SD	\bar{x}
NLS	273	11.29	78.02
HPLP II	273	20.98	130.12

Table 2. Independent Samples t-test Results Of Prospective Teachers' NLS and HPLP II p Values by Gender.

Measure	Gender	N	\bar{x}	SD	p
NLS	Women	212	79.37	271	0.000
	Men	61	73.21		
HPLP II	Women	212	130.91	271	0.246
	Men	61	127.37		

Table 3. ANOVA Results of Prospective Teachers' NLS and HPLP II Scores by Place of Residence.

Measure	Residence	N	\bar{x}	p	Meaningful
NLS	With family (1)	172	75.45	0.063	
	Private dormitories (2)	26	77.11		
	With friends (3)	35	76.40		
	Alone (4)	14	84.78		
	State dormitories (5)	26	74.34		
	Total	273	78.00		
HPLP II	With family (1)	172	132.77	0.004	1-3, 1-5, 2-4, 3-4, 4-5
	Private dormitories (2)	26	124.34		
	With friends (3)	35	123.48		
	Alone (4)	14	140.14		
	State dormitories (5)	26	121.92		
	Total	273	130.12		

Table 4. Independent Samples t-test Results of Prospective Teachers' NLS and HPLP II p Values by Healthy Nutritional Status.

Measure	Healthy nutritional status	N	\bar{x}	SD	p
NLS	Yes	151	79.88	271	0.002
	No	122	75.67		
HPLP II	Yes	151	135.54	271	0.000
	No	122	123.41		

Table 5. Correlation Between NLS And HPLP II Of Prospective Teachers.

		NLS	HPLP II
NLS	Pearson Correlation	1	0.324**
	Sig. (2-tailed)		0.000
	N	273	273
HPLP II	Pearson Correlation	0.324**	1
	Sig. (2-tailed)	0.000	
	N	273	273

**Correlation Coefficient

teachers' nutritional literacy scores increase, their healthy lifestyle behavior levels will also increase.

Discussion

In this study, it was determined that the prospective teachers' nutritional literacy levels were high. This result can be interpreted as follows: Prospective teachers have real and objective information about nutrition, they are conscious about foods, they are aware of foods they should and should not consume. In studies on nutritional literacy, high level (Arslan & Mertoğlu, 2022), sufficient (Zoellner et al., 2009), low level (Ayer, 2018; Özdenk, 2020) were suggested. The result of the research shows parallelism with Arslan and Mertoğlu (2022) and Zoellner et al. (2009). However, in other studies on nutritional literacy in the literature; low level (Ayer, 2018; Özdenk, 2020).

In this study, healthy lifestyle behavior levels of prospective teachers were determined as moderate. This result is similar to other studies in the literature. In a study conducted by Demirci Apaydın and Çelik (2022) and

Ertop et al. (2012), it was determined that the healthy lifestyle behavior levels of the participants were moderate.

In the study, the nutritional literacy levels of female teachers were higher than male teachers. The fact that women's nutritional literacy levels were higher than men in this study was interpreted by the researchers as follows: Women are more active in nutrition, kitchen and food branches, they read more and have more information on these subjects. For this reason, women can analyze which food is beneficial and which food is harmful to their body more accurately than men. It is seen that there are different results in the studies on nutritional literacy levels and gender in the literature; female participants have higher nutritional literacy than males (Özenoğlu et al., 2021; Pak, 2020; Bozdoğan & Yılmazel, 2019; Tamel, 2018), male participants have higher nutritional literacy than females (Demir Özdenk & Özcebe, 2018; Gömleksiz et al., 2020).

In the literature, it has been determined in some studies that healthy lifestyle behavior levels do not differ according to gender (Cihangiroğlu & Deveci, 2011; Abbasi et al., 2020). In the study, no significant change was found between healthy lifestyle behaviors and gender factors. This result is similar to the studies in the literature.

In the study, it was determined that the nutritional literacy of the teachers did not create a significant change according to the places they live. This can be interpreted as follows: Nutritional literacy may not have much to do with the living environment. However, it is noteworthy that the scores obtained from NLS are highest for individuals living alone. Individuals living with the family are not a harbinger of their meals or the food taken at home, so it may not be possible to question the food taken. Likewise, individuals living in dormitories generally benefit from dining halls. However, individuals living alone or with friends are personally responsible for the food cooked in their homes and brought to their kitchens. Assuming this responsibility, evaluating foods and choosing them wisely may bring about the necessity of being a conscious nutrition literate. This result differs from the result of the study by Dilsiz (2020). In his study, the researcher states that the average score of the participants living with their families from the nutritional literacy scale is high.

The level of healthy lifestyle behaviors was also higher in individuals living alone at home. This finding can be explained as follows: The healthy nutritional status of individuals living alone also positively supports their lifestyles. However, it can be an indication that there is a correct ratio between nutritional literacy and healthy lifestyle behaviors.

In the literature, in the study conducted by Bozdoğan and Yılmazel (2019), it was seen that the nutritional literacy level of the participants who stated that they never consumed fast-food type foods was high. In a study conducted by Ertop et al. (2012), a significant change was found between

university students' adequate and balanced nutritional status and healthy lifestyle behavior levels. In this study, the mean NLS and HPLP II scores of the individuals were determined to be high according to their healthy nutritional status. This is an indication that individuals mark the items with understanding and consciously. It is predictable that an individual who thinks that he or she lives and eats healthy is nutritionally literate. The results of the studies given above showed parallelism with the results of the current study.

In this study, it was determined that there was a moderately positive and significant correlation between NLS and HPLP II. This result indicates that when NLS scores increase, HPLP II scores also increase. This is a significant situation; because individuals with nutritional literacy are also expected to have high healthy lifestyle behaviors. It is obvious that the health status of individuals who know nutrition and are conscious consumers will also improve positively. In a study conducted by Demirci Apaydın and Çelik (2022) in the literature, a weak positive relationship was found between the nutritional literacy of the participants and their healthy lifestyle behaviors. In a study conducted by Mertoğlu et al. (2020), it was determined that the effect of nutrition education on healthy lifestyle behaviors was "very high". In a study conducted by Mertoğlu (2019), it was determined that the interdisciplinary nutrition education given to teacher candidates had a positive effect on healthy lifestyle behavior levels.

Limitations

This research can also be conducted with different research models with larger sample sizes, measuring a wider range of demographic variables, and form a longer perspective.

Conclusion

In this study, the relationship between prospective teachers' nutritional literacy and healthy lifestyle behaviors was examined according to various variables. The conscious acquisition of nutritional literacy in individuals will also bring healthy lifestyle behaviors. Arslan and Mertoğlu (2022) examined the relationship between media literacy and nutritional literacy, which is different from the subject of the research but related to it. Researchers stated that there is a strong positive relationship between the two variables. It is difficult to underestimate the power of the media today. The introduction, analysis and presentation of foods in the media will be understood more clearly and accurately by individuals who are nutritionally literate. Therefore, the media can affect both the nutritional literacy and healthy lifestyles of individuals. The result of this sub-problem in this research -except Dilsiz (2020), no other study has been found in the literature- can be seen as a new

contribution about whether nutritional literacy depends on where individuals live to the literature. Similarly, no other study has been found in the literature examining the change of healthy lifestyle behaviors in terms of where individuals live. Again, one of the sub-problems of this research sought an answer to this question. Therefore, this result can distinguish the article from similar ones.

In addition, there is a moderate and positive relationship between healthy lifestyle behaviors and nutritional literacy. No other study has been found in the literature examining a moderate and positive relationship between healthy behaviors and nutritional literacy, this can be seen new contribution in the literature.

When the results of the research are examined;

- Due to the lower nutritional literacy of male participants, seminars, training and even events on nutrition and healthy life can be organized for these individuals. In the media, advertisements, spot news, etc. can be arranged for this result of the research, and studies can be carried out to improve the nutritional literacy of men.
- This research was carried out with prospective teachers, and the same study can be conducted with teachers from different branches and students from all levels.
- Studies, seminars, training and activities on nutritional literacy can be organized not only for university students but also for students from all levels.
- Different from the subject of this research, the relationship between nutritional literacy and different variables can be looked at.
- Relational survey, which is a quantitative research method, was used in this study. By reusing the same topic, the study can also be carried out with qualitative data collection tools (observation, interview, focus group interview).

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