



Education Quarterly Reviews

Korkmaz, C. (2022). Assessment of Health-Promoting Lifestyle Profiles and Nutritional Knowledge Levels of Pre-Service Physical Education and Science Teachers: A Comparative Study Example. *Education Quarterly Reviews*, Vol.5 Special Issue 2: Current Education Research in Turkey, 564-576.

ISSN 2621-5799

DOI: 10.31014/aior.1993.05.04.644

The online version of this article can be found at:

<https://www.asianinstituteofresearch.org/>

Published by:
The Asian Institute of Research

The *Education Quarterly Reviews* is an Open Access publication. It may be read, copied, and distributed free of charge according to the conditions of the Creative Commons Attribution 4.0 International license.

The Asian Institute of Research *Education Quarterly Reviews* is a peer-reviewed International Journal. The journal covers scholarly articles in the fields of education, linguistics, literature, educational theory, research, and methodologies, curriculum, elementary and secondary education, higher education, foreign language education, teaching and learning, teacher education, education of special groups, and other fields of study related to education. As the journal is Open Access, it ensures high visibility and the increase of citations for all research articles published. The *Education Quarterly Reviews* aims to facilitate scholarly work on recent theoretical and practical aspects of education.



ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide



Assessment of Health-Promoting Lifestyle Profiles and Nutritional Knowledge Levels of Pre-Service Physical Education and Science Teachers: A Comparative Study

Example

Cihat Korkmaz¹

¹ Faculty of Sports Science, Kahramanmaraş Sütçü İmam University, Türkiye

Correspondence: Cihat Korkmaz. E-mail: korkmaz.cihat68@gmail.com

Abstract

The study aimed to examine pre-service physical education and science education teachers' health-promoting lifestyle profiles, nutrition habits, knowledge of nutrition levels, and their relationships with some demographic variables (gender, department, smoking, physical activity level). The study is a descriptive study conducted in a government university in Türkiye. The samples consisted of fourth-year pre-service physical teachers (N=37) and pre-service science teachers (N=32). Nutrition Habits Assessment Form, Health Promoting Lifestyle Profile II instrument (HPLP II), and Nutrition Knowledge Level for Adults Scale, which consisted of two parts, "Basic Nutrition Scale" and "Food Preference Scale," were used as data collection tools. Descriptive statistics and parametric tests analyzed data. Considering differences in the physical activity subscale between different departments, a significantly higher score was recorded among pre-service physical education teachers compared to pre-service science teachers. A significantly higher score was observed in the subscales on interpersonal relations and stress management and Basic Nutrition Scale Score among pre-service science teachers compared to pre-service physical education teachers. A significantly higher score was observed in the subscales on physical activity and interpersonal relations among male compared to female students. The HPLP II scores of the pre-service teachers, which exercised three times more than three times a week, were higher than those who exercised once a week and didn't exercise.

Keywords: Pre-Service Physical Education Teachers, Pre-Service Science Teachers, Health Promoting Lifestyle Profile, Nutrition Habits

1. Introduction

The health status of individuals affects their productivity and society's health (Özmen et al., 2007). The health status of individuals is affected by the physical, social, cultural, and economic environment in which they live. Today, the increasing prevalence of various diseases overwhelmed healthcare services worldwide (Glasgow & Schrecker, 2016; Kostova, Husain, Sugerman, Hong, Saraiya, & Keltz, 2017). Choo and Kang (2015) stated that

a health-promoting lifestyle is essential to disease prevention. Health-promoting lifestyle behaviors help to improve physical and mental health outcomes and decrease healthcare costs (Suda, Nakayama, & Morimoto, 2007; Aaby, Friis, Christensen, Rowlands, & Maindal, 2017; Mikkelsen, Stojanovska, Polenakovic, Bosevski, & Apostolopoulos, 2017). Healthy lifestyle behaviors are activities and efforts which help individuals stay healthy, become happier, prevent diseases, and increase the quality of their lives (Murray & Lopez, 2013). Individuals develop healthy nutrition habits, regular physical activity, health responsibility, and stress management for a healthy lifestyle. Changing some practices and creating new behaviors at older ages is difficult. For adults, it is very challenging to change their unhealthy behaviors. Therefore, developing healthy lifestyle behaviors at an early age is very important. Adolescence and the following youth period have a critical importance. In this context, schools and universities are appropriate settings for developing healthy lifestyle behaviors in adolescents and young people.

The university period is a period of significant changes in the lives of individuals. During this period, young students also experience physical, mental, and social changes. With the start of university life, many students leave their families and try to adapt to foreign living conditions. In this period, behaviors such as alcohol use, smoking, and unhealthy diet are increasingly observed (Werch et al., 2007). Healthy nutrition habits are one of the most critical health-promoting lifestyle behaviors. Nutrition plays a vital role in being healthy and maintaining health (Ahmad, Mohid-u-din & Qadir, 2018; Malkoç et al., 2020; Saroja & Priya, 2021). As mentioned above, it has been revealed in various studies that university students generally do not have healthy nutrition habits (Salama & Ismael, 2018; El-Ahmady & El-Wakeel, 2017; Abraham et al., 2018; Teleman et al., 2015; Gupta & Kochar, 2008; Driskell et al., 2005).

When the studies in the literature are examined, it has been observed that the healthy lifestyle profiles of university students, who generally study in health-related fields such as medicine and nursing, are reviewed concerning various variables (Mašina et al., 2017; Alzahrani et al., 2019; Safaile et al., 2020).). No studies were found in which the healthy lifestyle profiles of pre-service teachers were investigated. As future teachers, pre-service teachers will affect students' developing health-promoting lifestyle behaviors. Teachers need to have healthy lifestyle behaviors in terms of their health and be role models for their students. Various studies have stated that teachers are critical in shaping students' eating habits (Nanayakkara et al., 2018; Prelip, Erausquin, et al., 2006). Teachers can affect public health by indirectly involving students and families through their relationships with their students (Motamedrezaei et al., 2013). Therefore, within the scope of this study, healthy lifestyle profiles, nutrition habits, and basic nutrition knowledge levels of pre-service physical education and science teachers were investigated concerning various variables. It is thought that the findings of this study will provide information about the healthy lifestyle profiles of pre-service physical education and science teachers and will show whether the studied department causes a difference in the development of healthy lifestyle profiles of the pre-service teachers. Physical education and science teachers are responsible for teaching health-related subjects due to the course content of their branches. Therefore, examining the pre-service physical education and science teachers' health-promoting lifestyle profiles, nutrition habits, and nutritional knowledge levels in terms of various variables will help to identify the deficiencies of pre-service teachers and help develop various suggestions for eliminating these deficiencies.

2. The aim of the study

The study aims to examine health-promoting lifestyle profiles, nutritional habits, and nutritional knowledge levels of pre-service physical education and science teachers and compare the pre-service teachers in two different branches regarding the variables mentioned. Within the scope of the study it is aimed to seek answers to the following research questions:

- 1) What are the nutritional habits of pre-service physical education teachers?
- 2) What are the nutritional habits of pre-service science teachers?
- 3) Do the health-promoting lifestyle profiles of pre-service physical education teachers differ from the health-promoting lifestyle profiles of pre-service science teachers?
- 4) Do pre-service physical education teachers' nutrition knowledge levels differ from pre-service science teachers?
- 5) Do pre-service teachers' health-promoting lifestyle profiles and nutritional knowledge levels change according to gender?

- 6) Do pre-service teachers' health-promoting lifestyle profiles and nutritional knowledge levels change according to their smoking status?
- 7) Do pre-service teachers' health-promoting lifestyle profiles and nutritional knowledge levels change according to the frequency of weekly exercise?

3. Method

Within the scope of the study, health-promoting lifestyle profiles, nutritional habits, and nutritional knowledge levels of pre-service physical education and science teachers were examined, and the pre-service teachers from two different branches were compared in terms of the variables mentioned. For this purpose, descriptive study design, one of the quantitative research methods, was designed. Quantitative data were collected by applying the data collection tools given below. The nutrition Habits Assessment Form was used to determine the nutritional habits of pre-service teachers. The Health Promoting Lifestyle Profile II instrument was used to assess healthy lifestyle behaviors, and Nutrition Knowledge Level for Adults Scale was used to determine nutritional knowledge levels.

3.1 Data collection tools

3.1.1 Nutrition Habits Assessment Form

The form in the study of Ermiş et al. (2014) was used to prepare information about the nutritional habits of teacher candidates. The form includes the weekly frequency of exercise, smoking status, believing the importance of healthy nutrition, the most important meal, the reasons for skipping meals, and considerations in choosing meals. The form aimed to have information about the daily eating habits of teacher candidates. The answers given to the form were analyzed as percentage frequency.

3.1.2 Health Promoting Lifestyle Profile II instrument (HPLP II)

HPLP II developed by Walker and his friends (1996) and adapted to Turkish by Bahar and her friends (2008). The scale consists of 6 sub-dimensions and 52 items. The scale is a 5-point Likert type and does not contain negative items. The sub-dimensions of the scale are spiritual growth (6, 12, 18, 24, 30, 36, 42, 48, 52), health responsibility (item no 3, 9, 15, 21, 27, 33, 39, 45, 51), exercise. (item no 4, 10, 16, 22, 28, 34, 40, 46), nutrition (2, 8, 14, 20, 26, 32, 38, 44, 50), interpersonal support/relationships (1, 7, 13, 19, 25, 31, 37, 43, 49), and stress management (item no. 5, 11, 17, 23, 29, 35, 41, 47) (Yalçınkaya, Özer, & Karamanoğlu, 2007). The Cronbach Alpha internal consistency coefficient for the reliability of the scale was found to be 0.91 by Yalçınkaya, Özer, and Karamanoğlu (2007). In this study, the scale was applied to 127 pre-service teachers studying in science teaching and physical education teaching departments to calculate the reliability of the scale. Cronbach Alpha was calculated as 0.90 for the entire scale.

3.1.3 Nutrition Knowledge Level for Adults Scale

The Nutrition Knowledge for Adults Scale was developed by Batmaz (2018). The scale consists of two parts named the "Basic Nutrition Scale" (BNS) and the "Food Preference Scale" (FPS). The scores obtained from the nutrition knowledge level scale evaluation criteria for adults are evaluated as bad, moderate, sound, and very good. The highest score that can be obtained from the basic nutrition section is 80; The highest score that can be obtained from the food preference section is 48. Those with a basic nutrition scale score less than 45 are evaluated as poor, those with a score of 45-55 as moderate, those with a score of 56-65 as sound, and those with a score above 65 as very good. On the other hand, in the food preference scale score, the knowledge level of those below 30 is evaluated as bad, 30-36 points as medium, 37-42 points as good, and above 42 points as very good. The reliability coefficient Cronbach's Alpha for the BNS and FPS were found to be 0.71 and 0.70, respectively.

3.2 Data analysis

Percentage frequency analysis, independent samples t-test, and one-way ANOVA were used in data analysis. To

perform independent samples t-test and one-way ANOVA, the data should show a normal distribution (Büyüköztürk, 2018; p40). The results of the Kolmogorov-Smirnov test used to determine whether the data showed a normal distribution are given in the table below.

Table 1: Tests of Normality

	Kolmogorov-Smirnov(a)		
	Statistic	df	Sig.
HPLP II	0,08	69	0,20
BNS	0,08	69	0,20
NPS	0,10	69	0,05

According to the Kolmogorov-Smirnov test for all three scales, since $p > 0.05$, it was seen that the data showed normal distribution.

3.3 The samples

The sample of the study consists of physical education (N=37) and science teacher candidates (N=32) studying at a state university in the 2022-2023 academic year. The sample was determined by the criterion sampling method, one of the non-random sampling methods. In the Criterion sampling method, units meeting the specified criteria are included in the sample (Büyüköztürk et al., 2020, p94). Since the pre-service teachers' nutritional habits and nutritional knowledge levels will be examined within the scope of the study, the pre-service teachers who took nutrition courses were included in the study. Detailed information about the sample is given in Table 2.

Table 2: Distribution of the samples by department and gender

	Physical edu.		Science Edu.		Total	
	N	%	N	%	N	%
Female	20	54,1	27	84,4	47	68,1
Male	17	45,9	5	15,6	22	31,9
Total	37	100	32	100	69	100

4. Findings

The answers to the Nutritional habits Assessment Form are given in Table 3 as percentages.

Table 3: The % frequency values of the answers to the Nutrition Habits Assessment Form

	Department	Sci.	Phys.	Total
		Edu.	Edu.	
Weekly frequency of exercise	none	40,6	13,5	26,1
	Once a week	43,8	16,2	29,0
	2-3 times a week	12,5	51,4	33,3
	More than three times a week	3,1	18,9	11,6
Smoking status	Yes	9,4	27,0	18,8
	No	90,6	73,0	81,2
Believing the importance of healthy nutrition	Yes	93,8	97,3	95,7
	No	0,0	0,0	0,0
	Sometimes	6,3	2,7	4,3
The most important meal	Breakfast	40,6	62,2	52,2
	Lunch	0,0	8,1	4,3
	Dinner	59,4	29,7	43,5
Skipping meal	Yes	28,1	21,6	24,6
	No	12,5	27,0	20,3
	Sometimes	59,4	51,4	55,1

The most skipped meal	Breakfast	15,6	24,3	20,3
	Lunch	81,3	73,0	76,8
	Dinner	3,1	2,7	2,9
Reasons for skipping a meal	not being able to wake up	6,3	5,4	5,8
	lack of time	34,4	29,7	31,9
	being late for school	9,4	5,4	7,2
	No preparer	6,3	5,4	5,8
	diETING	0,0	2,7	1,4
	loss of appetite	43,8	40,5	42,0
	Economic reasons	0,0	10,8	5,8
Considerations while choosing a meal	Price	25,0	2,7	13,0
	satiety	6,3	18,9	13,0
	Favorite/desired food	50,0	43,2	46,4
	nutritiveness	15,6	32,4	24,6
	material quality	3,1	2,7	2,9

When Table 3 was analyzed, it was seen that there were differences between physical education and science teacher candidates in terms of the frequency of doing weekly exercise. 51,4 % of the physical education teacher candidates exercise 2-3 times a week and 18,9 % more than 3 times a week, whereas 12,5 % of science teacher candidates exercise 2-3 times a week and 3,1 % more than 3 times a week. While 40,6 % of science teacher candidates do not exercise at all, this rate in physical education teachers is 13,5 %.

While 27 % of physical education teacher candidates smoke, 9,4 % of science teacher candidates smoke.

More than 90 % of physical education and science teacher candidates believe in the importance of healthy nutrition. While 62,2 % of physical education teacher candidates and 40,6 % of science teacher candidates think that the most important meal is breakfast, 29,7 % of physical education teacher candidates and 59,4 % of science teacher candidates think that the most important meal is dinner.

24,3 % of physical education teacher candidates and 15,6 % of science teacher candidates expressed that they skip breakfast the most and 73 % of physical education teacher candidates and 81,3 % of science teacher candidates skip lunch.

29,7 % of physical education teacher candidates and 34,4 % of science teacher candidates expressed not being able to find time for skipping meals, 40,5 % of physical education teacher candidates and 43,8 % of science teacher candidates expressed not having an appetite as the reason. 10,8 % of physical education teacher candidates stated economic reasons for skipping meals.

While 43,2 % of physical education teacher candidates and 50 % of science teacher candidates expressed that their favorite meal is effective in choosing a meal, 32,4 % of physical education teacher candidates and 15,6 % of science teacher candidates stated that nutritious meals are effective in their choice. 25 % of science teacher candidates stated that price is effective in choosing a meal.

The HPLP II, HPLP II Subscales, BNS and FPS scores of physical education and science teacher candidates were compared with the independent samples t-test. The table below shows the results of the independent samples t-test of HPLP II, HPLP II Subscales, BNS and FPS scores in terms of department.

Table 4: Independent samples t-test results of HPLP II, HPLP II Sub-dimensions, BNS and FPS scores in terms of department

	Dep.	N	Mean	Std. Deviation	df	t	p
HPLP II	Sci.	32	139,34	16,89	67	1,28	0,20
	Phys. E.	37	133,81	18,58			

Spiritual growth	Sci.	32	29,09	3,43	67	1,63	0,10
	Phys. E.	37	27,70	3,60			
Health responsibility	Sci.	32	22,84	5,62	67	1,86	0,06
	Phys. E.	37	20,59	4,36			
Physical activity	Sci.	32	17,18	3,62	67	2,69	0,00
	Phys. E.	37	19,83	4,43			
Nutrition	Sci.	32	20,87	4,41	67	0,26	0,79
	Phys. E.	37	20,62	3,43		0,26	
Interpersonal relations	Sci.	32	27,78	3,61	67	2,32	0,02
	Phys. E.	37	25,37	4,92			
Stress management	Sci.	32	21,56	3,06	67	2,52	0,01
	Phys. E.	37	19,67	3,10			
BNS	Sci.	32	54,87	4,69	67	4,59	0,00
	Phys. E.	37	47,86	7,79			
FPS	Sci.	32	37,09	7,41	67	1,31	0,19
	Phys. E.	37	34,72	7,51			

When Table 4 was analyzed, it was seen that there was no statistically significant difference between physical education and science teacher candidates' HPLP II total, HPLP II subscales' spiritual growth, health responsibility, nutrition sub-dimensions and FPS scores in terms of department ($p > 0,05$).

According to Table 4, there was a statistically significant difference in favor of physical education teacher candidates when physical education and science teacher candidates were compared in the HPLP II exercise sub-dimension ($p < 0,05$). When physical education and science teacher candidates were compared in HPLP II interpersonal relations and stress management sub-dimensions, there was a statistically significant difference in favor of science teacher candidates. When physical education and science teacher candidates were compared, a significant difference was found in BNS scores in favor of science teacher candidates ($p < 0,05$).

The scores of the teacher candidates from HPLP II, HPLP II sub-dimensions, BNS and FPS in terms of gender were compared with the independent samples t-test. The table below shows the results of the independent samples t-test of HPLP II, HPLP II Sub-dimensions, BNS and FPS scores in terms of gender.

Table 5: The results of the independent samples t-test of HPLP II, HPLP II Sub-dimensions, BNS and FPS scores in terms of gender.

	Gender	N	Mean	Std. Deviation	df	t	p
HPLP II	Male	22	142,40	17,57	67	1,95	0,05
	Female	47	133,55	17,52			
Spiritual growth	Male	22	29,27	3,32	67	1,48	0,14
	Female	47	27,91	3,63			
Health responsibility	Male	22	21,81	4,83	67	0,20	0,84
	Female	47	21,55	5,23			
Physical activity	Male	22	20,95	4,23	67	3,35	0,00
	Female	47	17,51	3,84			
Nutrition	Male	22	20,90	3,70	67	0,24	0,80
	Female	47	20,65	4,01			
Interpersonal relations	Male	22	28,04	4,04	67	2,00	0,04
	Female	47	25,76	4,56			
Stress management	Male	22	21,40	3,17	67	1,53	0,13
	Female	47	20,14	3,18			
BNS	Male	22	50,90	7,83	67	0,15	0,87

	Female	47	51,21	7,25			
FPS	Male	2	37,18	5,81	67	1,15	0,25
	Female	47	35,19	8,16			

When Table 5 was analyzed, a statistically significant difference was not found between physical education and science teacher candidates' HPLP II, all sub-dimensions with the exception of exercise and interpersonal relations of HPLP II, BNS and FPS scores in terms of gender ($p>0,05$). A statistically significant difference was found in teacher candidates' HPLP II exercise and interpersonal relations sub-dimensions in favor of male students ($p<0,05$).

The scores of the teacher candidates from HPLP II, HPLP II sub-dimensions, BNS and FPS in terms of smoking status were compared with the independent samples t-test. The table below shows the results of the independent samples t-test of HPLP II, HPLP II Sub-dimensions, BNS and FPS scores in terms of smoking status.

Table 6. The results of the independent samples t-test of HPLP II, HPLP II Sub-dimensions, BNS and FPS scores in terms of smoking status

	Smoking status	N	Mean	Std. Deviation	df	t	p
HPLP II	yes	13	134,23	17,22	67	0,47	0,63
	no	56	136,87	18,17			
Spiritual growth	yes	13	27,76	2,42	67	0,64	0,52
	no	56	28,48	3,79			
Health responsibility	yes	13	20,61	5,25	67	0,80	0,42
	no	56	21,87	5,05			
Physical activity	yes	13	19,53	4,44	67	0,87	0,38
	no	56	18,39	4,22			
Nutrition	yes	13	19,38	3,57	67	1,40	0,16
	no	56	21,05	3,92			
Interpersonal relations	yes	13	26,38	4,13	67	0,09	0,92
	no	56	26,51	4,62			
Stress management	yes	13	20,53	3,52	67	0,01	0,98
	no	56	20,55	3,16			
BNS	yes	13	48,84	7,23	67	1,23	0,22
	no	56	51,64	7,38			
FPS	yes	13	36,92	4,82	67	0,78	0,43
	no	56	35,57	8,01			

When Table 6 was analyzed, a statistically significant difference was not found between physical education and science teacher candidates' HPLP II, HPLP II Sub-dimensions, BNS and FPS scores in terms of smoking status ($p>0,05$).

The teacher candidates' HPLP II, HPLP II Sub-dimensions, BNS and FPS scores were compared with one way ANOVA in terms of the frequency of doing weekly exercise. The exercise sub-dimension of the analyzed HPLP II scale was not included. Variance homogeneity was tested with Levene Statistics. The Levene test was found as $p>0,05$ in all the scales and sub-dimensions included in the analysis. The table below shows the descriptive statistics of HPLP II, HPLP II Sub-dimensions (except for exercise), BNS and FPS scores in terms of the frequency of doing weekly exercise.

Table 7: The descriptive statistics of HPLP II, HPLP II Sub-dimensions (except for exercise), BNS and FPS scores in terms of the frequency of doing weekly exercise

		N	Mean	Std. Dev.
HPLP II	none	18	131,61	15,32
	Once a week	20	134,40	17,68
	2-3 times a week	23	135,82	18,71
	More than three times a week	8	153,62	13,56
Spiritual growth	none	18	27,33	4,89
	Once a week	20	28,15	2,49
	2-3 times a week	23	28,82	3,33
	More than three times a week	8	29,75	2,81
Health responsibility	none	18	21,27	5,24
	Once a week	20	21,65	5,50
	2-3 times a week	23	21,30	4,89
	More than three times a week	8	23,37	4,65
Nutrition	none	18	20,00	4,20
	Once a week	20	20,35	4,25
	2-3 times a week	23	20,86	3,50
	More than three times a week	8	23,00	2,92
Interpersonal relations	none	18	27,05	5,50
	Once a week	20	25,95	2,85
	2-3 times a week	23	25,65	4,87
	More than three times a week	8	29,00	3,92
Stress management	none	18	20,94	2,71
	Once a week	20	20,45	3,39
	2-3 times a week	23	19,60	3,38
	More than three times a week	8	22,62	2,61
BNS	none	18	51,94	7,18
	Once a week	20	52,25	5,81
	2-3 times a week	23	48,39	8,40
	More than three times a week	8	54,25	7,10
FPS	none	18	36,00	8,83
	Once a week	20	34,75	7,54
	2-3 times a week	23	34,56	6,31
	More than three times a week	8	41,75	5,44

Table 8: The ANOVA results of HPLP II, HPLP II Sub-dimensions (except for exercise), BNS and FPS scores in terms of the frequency of doing weekly exercise

		Sum of Squares	df	Mean Square	F	Sig.
HPLP II	Between Groups	2873,94	3	957,98	3,29	0,02
	Within Groups	18926,25	65	291,17		
	Total	21800,20	68			
Spiritual growth	Between Groups	40,29	3	13,43	1,05	0,37
	Within Groups	827,35	65	12,72		
	Total	867,65	68			
Health responsibility	Between Groups	29,03	3	9,67	0,36	0,77
	Within Groups	1722,90	65	26,50		
	Total	1751,94	68			
Nutrition	Between Groups	54,14	3	18,04	1,20	0,31
	Within Groups					

	Within Groups	975,15	65	15,00		
	Total	1029,30	68			
Interpersonal relations	Between Groups	78,13	3	26,04	1,30	0,28
	Within Groups	1301,11	65	20,01		
	Total	1379,24	68			
Stress management	Between Groups	57,82	3	19,27	1,94	0,13
	Within Groups	643,24	65	9,89		
	Total	701,07	68			
BNS	Between Groups	287,40	3	95,80	1,81	0,15
	Within Groups	3425,67	65	52,70		
	Total	3713,07	68			
NPS	Between Groups	341,01	3	113,67	2,11	0,10
	Within Groups	3492,90	65	53,73		
	Total	3833,91	68			

The one way ANOVA results showed that HPLP II scores displayed a statistically significant difference in terms of the frequency of doing weekly exercise. Tukey test was performed with the purpose of determining between which groups the difference occurred in terms of the frequency of doing weekly exercise. According to the results of the Tukey test, it was found that there was a statistically significant difference between those who do not exercise at all and those who exercise 3 times and more a week; those who exercise once a week and those who exercise 3 times a week and in favor of those exercise 3 times a week.

5. Results and Discussion

When teacher candidates' frequency of doing weekly exercise was analyzed, it was found that there were great differences between science and physical education teacher candidates. It was seen that physical education teacher candidates have a habit of regularly doing exercise, whereas a majority of science teacher candidates do not regularly exercise. It was seen that there is consistency between the answers given to the nutrition habits assessment form and HPLP II's exercise sub-dimension. The scores of physical education teacher candidates are higher compared to science teacher candidates in HPLP II's exercise sub-dimension as well. In the literature, it has been seen that students' behavior of regularly doing exercise changes in terms of their department when behavior of regularly doing exercise of university students from different departments were analyzed. For instance, in Ermiş, Doğan, Erilli and Satici's study (2014), it was found that there was a statistically significant difference between students in departments related to diet and health and students in other departments, in favor of students in health related departments in terms of the "regularly doing sports" and "smoking" variables. In the study mentioned, it was considered that the difference was due to having knowledge and awareness about health. In this study, it can be considered that the difference related to regularly doing sports is due to physical education teaching department is related to sports and that teacher candidates develop this behavior by the nature of this department. A majority of science teacher candidates do not exercise at all (40,6 %). The rate of those who exercise once a week is 48,8 %. This shows that science teacher candidates do not exercise. The acquisition of the habit of regularly doing exercise by young people is important in terms of leading a healthy life and preventing possible health related problems in the future. When it is considered that teacher candidates become role models for future students with their behaviors, acquiring the habit of regularly doing sports gains even more importance.

The rate of physical education teacher candidates who stated that they exercise 3 times and more a week and 2-3 times a week is about 70 %. This is an expected result since these students receive education in a department related to sports. However, when the findings were analyzed, it was seen that the rate of physical education teacher candidates who exercise once a week and those who do not exercise at all is about 30 %. This is a very high rate for teacher candidates who receive education in a department which is related to sports sciences. Physical education teacher candidates' not doing exercise regularly might have possible negative effects both on their health and their lessons.

When teacher candidates' smoking status was analyzed, it was seen that there is a great difference between physical education and science teacher candidates. While 27 % of physical education teacher candidates smoke, this rate is about 9 %. The finding that the rate of smoking in physical education teacher candidates who receive education in a sports related department and mostly have the habit of regularly doing exercise as stated above is higher compared to science teacher candidates is surprising. As indicated above, about 70 % of physical education teacher candidates regularly exercise. However, their rate of smoking is about 30 %. This reinforces the idea that the behavior of regularly doing exercise is formed by nature of the academic department, rather than a health related awareness.

These findings show that both physical education and science teacher candidates believe in the importance of nutrition. However, it is arguable to what extent they follow healthy diets in practice. A majority of the teacher candidates in both departments stated that they skip meals. When it was analyzed which meal physical education and science teacher candidates found the most important, breakfast and dinner came to the fore. The teacher candidates in both departments do not think that lunch is an important meal. As a result of this, it was observed that the most skipped meal by the teacher candidates of both departments is lunch. When it is considered that teacher candidates spend a majority of their time at school and start their classes at early hours in the morning, lunch should be an important meal for them. The findings indicate that students do not eat after breakfast until night time. When their ages and daily activity levels are taken into consideration, this is not healthy. When teacher candidates' reasons for skipping meals were analyzed, it was seen that there was no difference between the departments. The two reasons which came to the fore were not being able to find time and not having an appetite. While the reason of not being able to find time might be a reason for skipping breakfast, it might also be related to the fact that there is a long waiting time since cafeterias are crowded during lunch time. Therefore, the reasons for skipping meals can be analyzed in a more detailed manner. However, the rate of suggesting not having an appetite as a reason for skipping meals is quite high for both physical education and science teacher candidates. The teacher candidates are aged 22-23. Not having an appetite at these ages can have various reasons. The teacher candidates' not having an appetite can affect their health and general academic performance.

When the factors which influence choosing a meal for physical education and science teacher candidates were analyzed, it was seen that the teacher candidates in both groups prefer meals they like. The percentage of teacher candidates who prioritize nutrition is higher in physical education teacher candidates (about 30 % in physical education teacher candidates and about 15 % in science teacher candidates). It can be seen that although the teacher candidates in the study have lessons about nutrition, a majority of the teacher candidates do not prioritize nutritiousness of meals. This rate of is lower in science teacher candidates. When the teacher candidates knowledge levels on food preference and nutrition were analyzed, the findings are interesting. When the teacher candidates' BNS scores were analyzed, it was seen that both groups' knowledge level on nutrition was middle level. In addition, when the BNS scores of physical education and science teacher candidates were compared, it was found that the scores of science teachers were higher. Despite this finding, it was seen that the rate of prioritizing nutritiousness in choosing meals was lower in science teacher candidates. This finding shows that although the teacher candidates are knowledgeable about nutrition, they are insufficient in putting their knowledge to practice. This results indicates that the knowledge of the teacher candidates remains theoretical.

In the interpersonal relations and stress management sub-dimensions of HPLP II of physical education and science teacher candidates, the scores of science teacher candidates are higher compared to physical education teacher candidates. In this study, while there is no significant difference in the total scores of HPLP II in terms of gender, Akgün, Kostak et al.'s study (2014) has shown that female students' score in HPLP II is higher compared to male students. In the exercise and interpersonal relations sub-dimensions of HPLP II of the teacher candidates, it was seen that the scores of male teacher candidates were higher compared to the female teacher candidates. It was seen that female teacher candidates do not regularly exercise in daily life compared to the male teacher candidates. The possible reasons behind this should be analyzed. In addition, female teacher candidates' scores in the interpersonal relations sub-dimension, which is an indicator of individuals' interaction with their close environment, is lower compared to the male teacher candidates. Regular daily exercise behavior is extremely important for a healthy life. Additionally, an individual's relations with his/her close environment is important in terms of leading a healthy life. It was seen that the female teacher candidates were not as easy going as the male teacher candidates in their interpersonal relations, interactions and the support they receive. Similarly, there are studies in the literature which

analyze the differences in HPLP II and its sub-dimensions in terms of gender. Similarly, Alzahrani and others (2019) in their research showed that health-promoting profiles differed by gender, particularly with respect to physical activity and interpersonal relationships in favor of the males. Hacıhasanoğlu, Yıldırım, Karakurt, and Sağlam (2011) and Wei, Harada, Ueda, Fukumoto, Minamoto, and Ueda (2012) displayed that physical activity score average was higher in male students compared to female students. Additionally, Wei and his friends (2012) searched for the relationships of various demographic variables of Japanese university students with a health-promoting lifestyle profile. Their findings displayed that female students practiced significantly better health responsibility, interpersonal relations, and nutrition than males, and male students practiced significantly better physical activity than females. Wei et al.'s study (2012) has shown in support of this study in the exercise sub-dimension that males' rate of doing regular exercise is higher compared to females. However, as different from this study, it was shown that females' scores in interpersonal relations and nutrition were higher. Masina, Madzar, Musil and Milosevic (2017) examined gender differences among medical students and found that there was a significant difference between female and male students in favor of female students in the subscales of health responsibility and interpersonal relations. There was a significant difference between female and male students in favor of male students in the subscales of on physical activity and stress management. While Masina et al.'s study (2017) supports the findings of this study in terms of physical activity, it conflicts in terms of health responsibility and interpersonal relations categories. While there is no significant difference between the health responsibility and stress management scores of female and male teacher candidates in this study, Nassar and Shaheen (2014) and Mehri, Solhi, Garmaroudi, Nadrian, and Sigaldehy (2016) in their research have shown that health responsibility and stress management score averages of male students were higher than that of female students. When the difference in HPLP II and its sub-dimensions were analyzed in terms of gender, it was observed that there are different findings in the literature. In this respect, it is not possible to make a healthy interpretation about healthy life-style behaviors in terms of gender.

Th findings of the study show that the scores received from HPLP II in terms of the frequency of doing weekly exercise display differences. It was seen that the HPLP II scores of the teacher candidates who exercise three times and above a week were higher. Similarly, Akgün Kostak et al. (2014) have shown in their study that the HPLP II scores of individuals who regularly exercise is higher compared to those who do not regularly exercise. The behavior of regularly doing exercise has an important place in an individual's leading a healthy life. It is observed that individuals who regularly exercise are more successful in displaying healthy life-style behaviors.

6. Suggestions

It was seen that a majority of the science teacher candidates do not regularly exercise. The possible reasons behind this finding should be analyzed. The sports facilities of the faculty and university campus of the teacher candidates and to what extent students benefit from these facilities should be analyzed and whether there are problems related to lack of facilities or accessing these facilities should be determined. In addition, selective general culture lessons should be added to the science teaching program to encourage students to do sports and the teacher candidates should be encouraged to take these lessons.

The analysis of the relationship between physical education teacher candidates' doing regular exercise and their academic success and general health will help in identifying the general situation along with the other findings in this study. There is a need to analyze the reasons why physical education teacher candidates do not regularly exercise and its consequences and to reorganize the education process to allow teacher candidates to make exercise a part of their lives. Acquiring the habit of doing regular exercise will affect the success of physical education teachers in their professional lives as well.

It was seen that both physical education and science teacher candidates in particular skip lunch. It should be analyzed why lunch is skipped as a meal. The meal facilities and the conditions of cafeterias and whether the teacher candidates skip lunch due to these aspects (such as the small amount of meal choices, waiting in lines) should be analyzed. One of the reasons given for skipping a meal was not having an appetite. The teacher candidates' lack of appetite reasons and health conditions and whether it is caused by a health problem should be analyzed.

Although the teacher candidates are knowledgeable about nutrition, the fact that they ignore nutritiousness in their meal preferences requires the replanning of the content and learning activities related to nutrition. Activities which will allow students to implement their knowledge on nutrition to daily life should be planned to make it possible for knowledge to be used actively.

References

- Aaby, A., Friis, K., Christensen, B., Rowlands, G., & Mairdal, H. T. (2017). Health literacy is associated with health behaviour and self-reported health: a large population-based study in individuals with cardiovascular disease. *European Journal of Preventive Cardiology*, 24(17), 1880-1888.
- Abraham, S., Noriega Brooke R., & Shin J. Y. (2018). College students eating habits and knowledge of nutritional requirements. *Journal of Nutrition and Human Health*, 2(1), 13-17.
- Ahmad, M., Mohid-u-din, S. & Qadir, M. (2018). A survey study of nutritional awareness among students. *International Journal of Physiology, Nutrition and Physical Education*, 3(1), 1796-1797.
- Akgün Kostak, M., Kurt, S., Süt, N., Akarsu, Ö., & Ergül, G. D., (2014). Healthy lifestyle behaviors of nursing and classroom teaching students, *TAF Preventive Medicine Bulletin*, 13(3), 189-196.
- Alzahrani, S. H., Malik, A. A., Bashawri, J., Shaheen, S. A., Shaheen, M. M., Alsaib, A. A., Mubarak, M. A., Adam, Y. S., & Abdulwassi, H. K. (2019). Health-promoting lifestyle profile and associated factors among medical students in a Saudi university, *SAGE Open Medicine*, 7, 1-7.
- Bahar, Z., A. Beşer et al. (2008). Healthy life style behavior scale II: a reliability and validity study. *Cumhuriyet Nursing Journal*, 12(1), 1-12.
- Batmaz, H. (2018). Development of a nutrition knowledge level scale for adults and validation reliability study (Unpublished Master Thesis). Marmara University, Institute of Health Sciences, İstanbul, Türkiye.
- Büyüköztürk, Ş. (2018). *Sosyal Bilimler için Veri Analizi El Kitabı: İstatistik, Araştırma Deseni, SPSS Uygulamaları ve Yorum (Data Analysis Handbook for Social Sciences: Statistics, Research Design, SPSS Applications and Interpretation)*. Pegem Akademi Publication, 24. Edition, Ankara, Türkiye.
- Büyüköztürk, Ş., Çakmak, E. K., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2020). *Eğitimde Bilimsel Araştırma Yöntemleri (Scientific Research Methods in Education)*. Pegem Akademi Publication, 28. Edition, Ankara, Türkiye.
- Can, G., Özdilli, K., Erol, Ö., Unsar, S., Tulek, Z., Savaser, S., Özcan, S., & Durna, Z. (2008). Comparison of the health-promoting lifestyles of nursing and non-nursing students in Istanbul, Turkey, *Nursing and Health Sciences*, 10, 273–280
- Choo, J. & Kang, H. (2015). Predictors of initial weight loss among women with abdominal obesity: a path model using self-efficacy and health-promoting behaviour. *Journal of Advance Nursing*, 71(5), 1087–97.
- Driskell, J. A., Kim, Y. N., & Goebel, K. J. (2005). Few differences found in the typical eating and physical activity habits of lower-level and upper-level university students. *Journal of the American Dietetic Association*, 105(5), 798–801.
- El-Ahmady, S., & El-Wakeel, L. (2017). The effects of nutrition awareness and knowledge on health habits and performance among pharmacy students in Egypt. *Journal of Community Health*, 42(2), 213-220. DOI 10.1007/s10900-016-0245-z
- Ermış, E., Doğan, E., Erilli, N. A., & Satici, A. (2014). An examination of nutritional habits of university students: The model of Ondokuz Mayıs University. *Journal of Sports and Performance Researches*, 6(1), 30-40.
- Glasgow, S. & Schrecker, T. (2016). The double burden of neoliberalism? Noncommunicable disease policies and the global political economy of risk. *Health Place*, 39, 204–11.
- Gupta, N. & Kochar, G. (2008). Role of nutrition education in improving the nutritional awareness among adolescent girls. *The Internet Journal of Nutrition and Wellness*, 7(1), 1-4.
- Hacıhasanoğlu, R., Yıldırım, A., Karakurt, P. & Sağlam, R. (2011). Healthy lifestyle behavior in university students and influential factors in eastern Turkey. *International Journal of Nursing Practice*, 17, 43-51. <http://dx.doi.org/10.1111/j.1440-172X.2010.01905.x>
- Kostova, D., Husain, M. J., Sugerman, D., Hong, Y., Saraiya, M., Keltz, J., et al. (2017). Synergies between communicable and noncommunicable disease programs to enhance global health security. *Emerging Infectious Diseases Journal*, 23(1), 40-46.
- Malkoç, N., Yaşar, O. M., Turgut, M., Kerem, M., Köse, B., Atlı, A. & Sunay, H. (2020). Healthy nutrition attitudes of sports science students. *Progress in Nutrition*, 22(3), 1-7. DOI: 10.23751/pn.v22i3.9480
- Mašina, T., Madžar, T., Musil, V., & Milošević, M. (2017). Differences in health-promoting lifestyle profile among croatian medical students according to gender and year of study. *Acta Clinica Croatia*, 56(1), 84-91.
- Mehri, A., Solhi, M, Garmaroudi, G, Nadrian, H., & Sighaldehy, S. S. (2016). Health promoting lifestyle and its determinants among university students in Sabzevar, Iran. *International Journal of Preventive Medicine*, 7(65), 1-6.

- Mikkelsen, K., Stojanovska, L., Polenakovic, M., Bosevski, M., & Apostolopoulos, V. (2017). Exercise and mental health, *Maturitas*, 106, 48–56.
- Motamedrezaei, O., Moodi, M., Miri, M. R. & Khodadadi, M. (2013). The effect of nutrition and food hygiene education on the knowledge of female elementary school teachers in city of ferdows. *Journal of Education and Health Promotion*, 2(10), 16-19.
- Murray, C. J. L. & Lopez, A. D. (2013). Measuring the global burden of disease. *The New England Journal of Medicine*, 369, pp448-57.
- Nanayakkara, J., Margerison, C., & Worsley, A. (2018). Teachers' perspectives of a new food literacy curriculum in Australia. *Health Education*, 118(1), 48-61.
- Nassar, O.S. & Shaheen, A.M. (2014). Health-promoting behaviours of university nursing students in Jordan. *Health*, 6, 2756-2763. <http://dx.doi.org/10.4236/health.2014.619315>
- Özmen, D., Çetinkaya, A. Ç., Ergin, D., Şen, N. & Erbay, P. D. (2007). Eating habits and body weight control behaviors of high school students. *TAF Preventive Medicine Bulletin*, 6(2), 98-105.
- Prelip, M., Erasquin, J. T., Slusser, W., Vecchiarelli, S., Weightman, H., Lange, L. & Neumann, C. (2006). The role of classroom teachers in nutrition and physical education. *Californian Journal of Health Promotion*, 4(3), 116-127.
- Safaie, N., Ketabi, S., Kia, N., Mirmohammadkhani, M., Moonesan, M. R., & Paknazar, F. (2020). Exploration of mental health problems in association with health-promoting lifestyle profile in Iranian medical students: A cross-sectional study. *Journal of education and health promotion*, 9(1), 84.
- Salama, A. A. & Ismael, N. M. (2018). Assessing nutritional awareness and dietary practices of college-aged students for developing an effective nutrition educational plan. *The Canadian Journal of Clinical Nutrition*, 6(2), 22-42.
- Saroja, M. M. & Priya, E. M. J. (2021). Awareness on healthy dietary habits among prospective teachers in Tirunelvelidistrict. *Turkish Journal of Computer and Mathematics Education*, 12(3), 4060-4066.
- Suda, M., Nakayama, K., & Morimoto, K. (2007). Relationship between behavioral lifestyle and mental health status evaluated using the GHQ-28 and SDS questionnaires in Japanese factory workers. *Industrial Health*, 45(3), 467–473.
- Teleman, A. A., Waure, C., Soffiani, V., Poscia, A., & Di Pietro, M. L. (2015). Nutritional habits in Italian university students. *Annali dell'Istituto Superiore di Sanità*, 51(2), 99-105.
- Wei, C.-N., Harada, K., Ueda, K., Fukumoto, K., Minamoto, K. & Ueda, A. (2012). Assessment of health-promoting lifestyle profile in japanese university students. *Environmental Health and Preventive Medicine*, 17, 222-227. <http://dx.doi.org/10.1007/s12199-011-0244-8>
- Werch, C. E., Bian, H., Moore, M. J., Ames, S., DiClemente, C. C., & Weiler, R. M. (2007). Brief multiple behavior interventions in a college student health care clinic. *Journal of Adolescent Health*, 41, 577–85.
- Yalçınkaya, M., Özer Gök, F., & Karamanoğlu Yavuz, A. (2007). Evaluation of healthy lifestyle behaviors in health care workers. *TAF Preventive Medicine Bulletin*, 6(6), 409-420.