DETERMINATION OF PRE-SERVICE TEACHERS' ADEQUATE AND BALANCED EATING HABITS (THE CASE OF MUGLA)

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ABSTRACT

For individuals to have quality lives and to be useful and productive for their societies, they need to have a healthy body. And for the protection of physical health, eating habits are of great importance. Therefore, the purpose of the current study is to investigate the adequate and balanced eating habits of the pre-service teachers who will educate our future generations in relation to their gender, place of residence, water consumption and body mass index (BMI).The population of the current study is comprised of the student sattending the Education Faculty of MuglaSıtkıKocman University in the spring term of 2014-2015 academic year and the sampling consists of randomly selected 848 pre-service teachers. The collected data were analyzed through SPSS 14 program package and interpreted by using percentages (%), frequencies (n), t-test and Chi-square statistics. At the end of the study, it was concluded that the students' eating habits are at the medium level in terms of adequate and balanced nutrition. Moreover, their adequate and balanced eating habits do not vary significantly depending on their gender, place of residence and BMI. However, in terms of their water consumption that is very important for body health, direct water consumption of the students was found to be normal. Though no significant difference in their water consumption levels based on their gender, place of residence and BMI values was observed, it can be told that with BMI values ascending from normal to extreme, the water consumption need of the individual is increasing.

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STRUCTURED ABSTRACT

The main responsibility in educating children about healthy eating patterns should be taken by teachers but for teachers to be able to this, they need to be conscious and knowledgeable about health eating habits. In this connection, it seems to be important to determine the eating habits of pre-service teachers who will take the responsibility of educating future generations and be role models for the society in the future. Moreover, given that most of the pre-service teachers are still adolescents, they are in their developmental period and this is the most important period in terms of shaping eating habits, they should be encouraged and informed for adopting healthy eating habits. Thus, the purpose of the current study was set to be to determine the state of the pre-service teachers' adequate and balanced eating habits in relation to gender, place of residence, water consumption and BMI values. In line with the purpose of the study, problem statement of the study is expressed as follows: "What is the state of the pre-service teachers' adequate and balanced eating in relation to gender, place of residence, water consumption and BMI values?. And the sub-problems are as follows:

1. Does the state of the pre-service teachers' adequate and balanced eating vary significantly depending on their gender?

2. Does the state of the pre-service teachers' adequate and balanced eating vary significantly depending on their place of residence?

3. Does the state of the pre-service teachers' adequate and balanced eating vary significantly depending on their BMI values?

4. Does the state of the pre-service teachers' water consumption vary depending on their gender, place of residence and BMI values?

This is a qualitative study employing the descriptive method. Descriptive research is a kind of research investigating events as they are to determine the actual state of the events (Tanrıöğen 2011: 59).As it allows conducting research on large samples and eliciting individuals' attitudes and situations, the study was designed in the form of a survey study.The population of the study is comprised of all the pre-service teachers attending the Education Faculty of Muğla Sıktı Koçman University in 2014-2015 academic year and the sampling consists of 848 pre-service teachers randomly selected from the population.In the current study, as a data collection tool, eating habits questionnaire consisting of two parts was used. For the construction of this eating habits questionnaire, first literature was reviewed and then the opinions of dieticians were sought and thus the items were formed. While the first part of the questionnaire includes items to elicit personal information of the participants, the second part of the questionnaire includes items to elicit data about the eating habits of the participants.In the analysis of the data, SPSS 14 was used. On the basis of the data provided in the questionnaire about the height and weight, each participant's body mass index was calculated. The formula used to calculate body mass index is as follows: "Body Mass Index (BMI) = Body Weight (kg.) / Height squared (m.)". The pre-service teachers' responses to the questionnaire items were entered into the computer in a suitable format and then their analysis

was conducted by calculating percentages (%) and frequencies (N) and running t-test and Chi-square test and then the results were interpreted. Significance level for the correlations was set to be 0.05.

While there is no connection between the consumption of grain products including carbohydrates providing a large amount of the daily energy need of the body and gender, in terms of the consumption of fruit and vegetables and meat-dairy products, there is a correlation in favor of the male pre-service teachers.Racetteet al., (2005) conducted a study on 764 university students and reported that gender affects eating habits. Female students consume more fatty foods than male students but their fruit and vegetables consumption is similar.

It was found that there is a correlation between the pre-service teachers' frequency of consuming the fruit and vegetables and meat-dairy products required for adequate and balanced eating and place of residence in favor of the pre-service teachers living with their parents.

Of the pre-service teachers participating in the current study, 568 (64%) have a "normal", 193 (22.8%) have a "low", 32 (3.8%) have a "medium" BMI value. BMI values were not calculated for 17(2%) pre-service teachers who did not indicate their heights and weights that are necessary to calculate BMI values.According to the data reported by The Turkish Statistical Institute Health Survey (TÜİK, 2012), 17.2% of the Turkish population is obese, 34.8% is overweight, 44.2% is normal weight and 3.9% is thin.

It was found that there is no correlation between BMI values and the frequency of consuming fruit and vegetables and meat-dairy products necessary for adequate and balanced eating.Özgün-Başıbüyük and Akın (2007) found that women have higher BMI values than men.

When our data related to BMI values and frequency of consuming food items are examined, it is seen that the pre-service teachers consuming more meat-dairy products than grain products and fruit and vegetables have medium or high BMI values.

A correlation was found between water consumption and gender in favor the male students.

No significant correlation was found between the pre-service teachers' water consumption and place of residence.

No significant correlation was found between the pre-service teachers' water consumption and BMI values.

In this regard, it can be concluded that the pre-service teachers' state of adequate and balanced eating habits is at the medium level and state of water consumption is at the low level.In light of the findings of the study, the following suggestions were made.

1. In the study, a result was found that male students consume more fruit and vegetables, and meat-dairy products than female students.In this regard, given that the female students might be more concerned about their weight and therefore prone to go on a diet, the female students should be better informed about eating and dieting.

2. The study revealed that living with the family has positive contributions to the development of healthy eating habits; therefore, students staying in different places of residence should be informed about how to feed themselves as if they were living with a family.

3. It was found that many students stay in dormitories and are at the medium level in terms of adequate and balanced eating. This may indicate that foods offered in dormitories are not suitable for adequate and balanced eating; therefore, more healthy foods to raise students' adequate and balanced eating level to the level of "good" should be provided in dormitories.

4. The pre-service teachers consuming more meat-dairy products than grain products were found to have higher BMI values. Thus, the students should be informed about the ideal amounts of food items to be consumed from the healthy eating pyramid.

5. The pre-service teachers' water consumption level was found to be low. Therefore, the pre-service teachers should be informed about the relationship between healthy body and water consumption.

Keywords: Eating, Adequate and Balanced Eating, Pre-service Teacher, Body Mass Index

ÖĞRETMEN ADAYLARININ YETERLİ VE DENGELİ BESLENME ALIŞKANLIKLARININ BELİRLENMESİ (MUĞLA İLİ ÖRNEĞİ)

ÖZET

Başta kendi yaşam kalitesini sağlama amacı olmak üzere bireylerin; topluma yararlı ve üretken olabilmeleri için sağlıklı bir vücuda sahip olmaları gerekmektedir. Vücut sağlığının korunmasında ise beslenme alışkanlıkları ön plana çıkmaktadır. Bu nedenle araştırmanın amacı geleceğimizin temel taşı olan çocuklarımızın, sağlıklı ve bilinçli beslenme alışkanlığı kazanarak yetişmesini sağlayacak ve de toplumların doğru beslenmelerine yön verecek olan yarınlarımızın önemli rol modelleri olacak olan, öğretmen adaylarının beslenme alışkanlıklarının yeterli ve dengeli beslenme durumlarını cinsiyet, barınılan yer, su tüketimleri ve vücut kitle indeksi değeri (VKİ) değişkenleri açısından incelemektir. Araştırmanın evrenini 2014 -2015 eğitim öğretim yılı bahar döneminde Muğla Sıtkı Koçman Üniversitesi Eğitim Fakültesinde öğrenim gören öğrenciler oluştururken; örneklemini ise tesadüfî olarak belirlenen 848 öğretmen adayı oluşturmaktadır. Veriler SPSS 14 paket programı ile analiz edilmiş, yüzde (%), frekans (n), t testi ve ki-kare istatistiksel yöntemleriyle yorumlanmıştır. Araştırma sonucunda öğretmen adaylarının beslenme alışkanlıkları açısından yeterli ve dengeli beslenme durumlarının orta düzeyde olduğu görülmüştür. Ayrıca cinsiyet, barınılan yer ve VKİ değerleri açısından yeterli ve dengeli beslenme durumlarının farklılaşmadığı ve orta düzeyde olduğu tespit edilmiştir. Vücut sağlığı açısından önemli bir yere sahip olan su tüketim durumları açısından ise öğretmen adaylarının direkt su tüketim miktarlarının normal olduğu belirlenmiştir. Cinsiyet, barınılan yer ve VKİ

değerleri açısından su tüketim düzeylerinde bir değişim gözlenmemekle birlikte VKİ değeri normalden aşırıya doğru gittikçe bireyin su ihtiyacının arttığını söylemek olasıdır.

Anahtar Kelimeler: Beslenme, Yeterli ve Dengeli Beslenme, Öğretmen Adayı, Vücut Kitle İndeksi

INTRODUCTION

Health is defined in TDK's revised Turkish dictionary as "*physical, social and spiritual well-being of an individual*" (TDK, 2014). There are many factors that can adversely affect an individual's health. These factors range from minor domestic and workplace accidents, stress, communication problems to genetic factors. Today, one of the most serious health problems is being overweight or obesity which mostly results from wrong eating habit and affects not only the physical health but also the physical and spiritual health of an individual. Eating is the principal determiner of health and the development of motor skills of an individual (Baysal, 2007; Ersoy, 1990). Therefore, it is of particular importance for individuals who are taken as role models in the society to be conscious about nutrition and to direct the eating habits of the society in the right direction.

Eating is a basic need that is defined as the utilization of food required by an individual to maintain his/her life (growth, development, doing physical activities etc.) from birth to death (PekşenAkça, 2010: 90; Güneş, 1989: 18). When Maslow's hierarchy of needs is considered, physiological needs such feeding are the most basic needs of humans. If this basic physiological need cannot be met in any period of an individual's development, it is inevitable for this individual to encounter some health problems. Besides this, the greatest emphasis should be put on the term "need" in the definition of eating. This means that the individual should take the food items at correct amounts required by his/her life conditions (age, gender, working conditions etc.) (KılıçandŞanlıer, 2007:32). A great amount of research has reported that inadequate or excessive intake of nutrients might negatively affect the development of an individual (ÇetinandSarper, 2013: 86; Yılmaz and Özkan, 2007, cited in PekşenAkça, Arslan and AkıncıDemirbaş 2013: 2; Demirkaynak, 2004: 2, Kaya,1999:10; Merdol, 1999: 15). Nancy et al., (2005) found that wrong eating habits adopted by individuals might increase the risk of catching chronic health problems such as obesity or cardiovascular diseases at older ages (cited in Gümüş, Bulduk and Akdevelioğlu, 2011: 787).Therefore, establishment of healthy eating habits during adolescence may contribute to the protection from diseases in the coming years (Belmaker and Cohen, 1985).

For the generation of healthy communities, health as well as education of people cannot be overlooked. As in every field of life, inculcation of healthy eating habits in individuals should start at early ages. Türket al., (2007) stressed that it is difficult for adults to change their wrong eating habits; thus, it is of vital importance to impart good eating habits at early ages (cited in Çetin and Sarper, 2013).

Sound and accurate information about the concepts of adequate and balanced eating is necessary to develop correct eating habits. With such information, it can be possible for the individual to determine the best amount and type of food for himself/herself. Baysal (1993: 5-6) defines adequate and balanced eating as the intake of each of the nutritional elements necessary for the growth, renewal and functioning of the body at the right amounts and as the proper use of them in the body (cited in Açıkgöz, 2006: 8).Nutritional elements are classified under six categories as protein, fat, carbohydrate, mineral, vitamin and water. For an individual to have healthy eating habits, he/she must take each of these nutritional elements at the proper amounts indicated in the healthy eating pyramid (see Figure 1) (Arslan, 2014: 18).
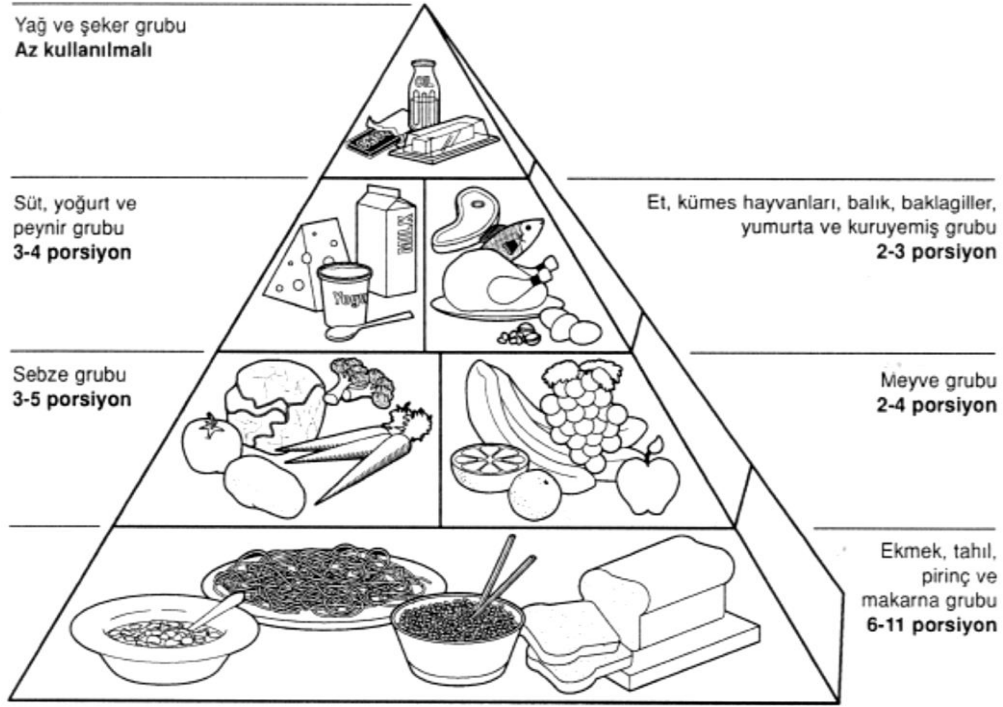
Figure 1: Healthy Eating Pyramid (Source: Beers M.H. andBerkow R., 2002)

While the bottom of the pyramid includes the most needed nutrients, its top includes the least needed nutrients. The nutrients least needed by the body are fats and sweets; the nutrients most needed by the body are grains. Moreover, consumption of vitamin rich fruits and vegetables in season, fresh and at proper amounts is of great importance for balanced diet and human health. Fruits and vegetables should be followed by food items rich in proteins such as milk and dairy products, meat, fish and egg.

In addition to this, though water is not considered to be a nutrient, it has an indispensable role to play for the sustainability of life; thus, great care should be taken for the adequate consumption of it (Zorba, 2000:96). Though stated at different amounts in different sources, daily intake of the water should be between 2.5 and 3 liters (Ersoy, 2011: 119; Tayaret al., 2011:158; Zorba, 2000: 101). The reason for the different amounts of daily water intake proposed in the literature is the changing need for water depending of the water loss of the body in different states such as resting or working. Atasever (2003:44) suggests that in the state of resting, 2 liters of water on average should be consumed daily and in the state of activity, 3 to 4 liters of water should be taken depending on the conditions of the activity. These amounts of water are met by direct and indirect intake of water. Pehlivan (2009: 23) stated that at least half of this total water intake is met through direct water intake and the rest is met indirectly through the consumption of foods and other drinks.

In this regard, the main responsibility in educating children about healthy eating patterns should be taken by teachers but for teachers to be able to this, they need to be conscious and knowledgeable about health eating habits. In this connection, it seems to be important to determine the eating habits of pre-service teachers who will take the responsibility of educating future generations and be role models for the society in the future. Moreover, given that most of the pre-

service teachers are still adolescents, they are in their developmental period and this is the most important period in terms of shaping eating habits, they should be encouraged and informed for adopting healthy eating habits. Thus, the purpose of the current study was set to be to determine the state of the pre-service teachers' adequate and balanced eating habits in relation to gender, place of residence, water consumption and BMI values. In line with the purpose of the study, problem statement of the study is expressed as follows: "What is the state of the pre-service teachers' adequate and balanced eating in relation to gender, place of residence, water consumption and BMI values?. And the sub-problems are as follows:

6. Does the state of the pre-service teachers' adequate and balanced eating vary significantly depending on their gender?

7. Does the state of the pre-service teachers' adequate and balanced eating vary significantly depending on their place of residence?

8. Does the state of the pre-service teachers' adequate and balanced eating vary significantly depending on their BMI values?

9. Does the state of the pre-service teachers' water consumption vary depending on their gender, place of residence and BMI values?

METHODOLOGY

Research Model

This is a qualitative study employing the descriptive method. Descriptive research is a kind of research investigating events as they are to determine the actual state of the events (Tanrıöğen 2011: 59).As it allows conducting research on large samples and eliciting individuals' attitudes and situations, the study was designed in the form of a survey study.

Population and Sampling

The population of the study is comprised of all the pre-service teachers attending the Education Faculty of MuğlaSıktıKoçman University in 2014-2015 academic year and the sampling consists of 848 pre-service teachers randomly selected from the population.

Data Collection Instruments

In the current study, as a data collection tool, eating habits questionnaire consisting of two parts was used. For the construction of this eating habits questionnaire, first literature was reviewed and then the opinions of dieticians were sought and thus the items were formed. While the first part of the questionnaire includes items to elicit personal information of the participants, the second part of the questionnaire includes items to elicit data about the eating habits of the participants.

Data Collection Process

For the collection of the data, the classes of the participants were visited when their classes were about to be over and the volunteer students were given the questionnaire to complete.

Data Analysis

In the analysis of the data, SPSS 14 program package was used. On the basis of the data provided in the questionnaire about the height and weight, each participant's body mass index was calculated. The formula used to calculate body mass index is as follows: "Body Mass Index (BMI) = Body Weight (kg.) / Height squared (m.)". The pre-service teachers' responses to the questionnaire items were entered into the computer in a suitable format and then their analysis was conducted by calculating percentages (%) and frequencies (N) and running t-test and Chi-square test and then the

results were interpreted. Significance level for the correlations was set to be 0.05. While entering the body mass indices of the participants into the program, the criterion shown in the table below was used.

Table 1: *The Criterion Used While Entering the Participants' BMI values into SPSS Program*

SPSS value assigned	Body Mass Index Values		Explanation
	Female	Male	
1	Lower than 19.1	Lower than 20.7	Lightweight
2	19.1 – 25.8	20.7 – 26.4	Normal weight
3	25.9 – 27.3	26.5 – 27,8	Overweight
4	27.4 – 32.2	27.9 – 31.1	Obese
5	32.3 – 44.8	31.2 – 45.4	Extremely obese
6	Higher than 44.8	Higher than 45.4	Deadly obese

(**Source:**http://www.populermedikal.com/diyetegzersiz/bmi.asp - 24.12.2014, 14.10)

RESULTS

Table2: *The State of the Participants' Adequate and Balanced Eating in relation to Gender*

Criterion	Gender	Yes		Partially		No		Total		$\overline{X}$	t-test
		N	%	N	%	N	%	N	%		
Frequency of the consumption of grain products	Female	164	31,8	*265*	*51,5*	86	16,7	515	60,7	2,1961	T = -,034
	Male	96	28,8	*162*	*48,6*	75	22,5	333	39,3	2,1982	p = .973
	Total	260	30,7	*427*	*50,4*	161	19	848	100		p > 0,05
Frequency of the consumption of fruit and vegetables	Female	188	36,5	*253*	*49,1*	74	14,4	515	60,7	2,1262	T = -3,539
	Male*	74	22,2	*189*	*56,8*	70	21	333	39,3	2,3453	p = .000
	Total	262	30,9	*442*	*52,1*	144	17	848	100		*p < 0,05*
Frequency of the consumption of meat-dairy products	Female	*266*	*43,9*	191	37,1	98	19	515	60,7	1,9320	T = -2,533
	Male*	112	33,6	*142*	*42,6*	79	23,7	333	39,3	2,0901	p = .011
	Total	*338*	*39,9*	333	39,3	117	20,9	848	100		*p < 0,05*

When Table 2 is examined, it is seen that 515 (60.7%) of 848 pre-service teachers participating in the study are females and 333 (39.3%) of them are males. It is also seen that grain products that have an important place in an adequate and balanced diet are "partially" consumed by 265 (51.5%) of the female pre-service teachers and 162 (48.6%) of the male pre-service teachers. Considering the data presented in the healthy eating pyramid, consumption of grain products must be viewed to be important by individuals. Moreover, the results of t-test revealed that there is not a significant correlation between gender and consumption of grain products ($P>0.05$). Thus, it can be argued that regardless of their gender, the pre-service teachers tend to "partially" consume grain products. This can be maintained to be not a positive finding in terms of adequate and balanced eating and thus the pre-service teachers seem to have wrong eating habits.

When the pre-service teachers' fruit and vegetable consumption is investigated to evaluate the state of adequate and balanced eating in relation to gender, it is seen that 253 (49.1%) of the female pre-service teachers and 189 (56.8%) of the male pre-service teachers "partially" consume fruit and vegetables. Given that consumption of daily fresh fruit and vegetables is of great importance for the protection of human health, partial consumption of these food items seems to be not at a level desired for adequate and balanced eating. Moreover, the results of t-test analysis showed that there is a significant correlation between fruit and vegetable consumption and gender in favor of the males ($p < 0.05$). On the basis of this finding, it can be contended that the male pre-service teachers' fruit and vegetable consumption is more adequate than that of the female pre-service teachers. But, most of the pre-service teachers stated that they "partially" consume fruit and vegetables and this indicates that they are not at the desired level for adequate and balanced eating. These findings can be interpreted as the pre-service teachers' having wrong eating habits.

When the pre-service teachers' meat-dairy products consumption is investigated in relation to gender, it is seen that 226 (43.0%) of the female pre-service teachers responded as "yes" and 142 (42.6%) of the male pre-service teachers responded as "partially". In light of the data provided by percentages and frequencies, it can be thought that the female pre-service teachers attach greater importance to the consumption of meat-dairy products than the male pre-service teachers. However, the results of t-test revealed a significant correlation between meat-dairy products consumption and gender in favor of the male pre-service teachers ($p < 0.05$).Though this finding may indicate that the male students are more adequate in terms of consuming meat-dairy products, their "partial" consumption of grain products and fruit and vegetables might be interpreted as their having wrong eating habits.

When all the data are subjected to a general evaluation, it is seen that regardless of their gender, the option selected most by the participants was "partially" as response to consumption frequency of the food items important for adequate and balanced eating; thus, it can be claimed that the participants' general state of adequate and balanced eating is at the "medium" level.

Table3: *The State of the Participants' Adequate and Balanced Eating in relation to Their Place of Residence*

Criterion	Place of residence	Yes		Partially		No		Total		Chi-Square Tests
		N	%	N	%	N	%	N	%	
Frequency of the consumption of grain products	With the family	*26*	*54,2*	18	37,5	4	8,3	48	5,7	χ2 =15,645
	Dormitory	103	28,1	*190*	*51,9*	73	19,9	*366*	*43,2*	s.d.= 6
	Student house	97	29,1	*168*	*50,5*	68	20,4	333	39,3	p=.016
	Others	34	33,7	*51*	*50,5*	16	15,8	101	11,9	*p < 0,05*
	Total	260	30,7	*427*	*50,4*	161	19	848	100	
Frequency of the consumption of fruit and vegetables	With the family	*31*	*64,6*	15	31,3	2	4,2	48	5,7	χ2 =39,449
	Dormitory	97	26,5	*196*	*53,6*	73	19,9	*336*	*43,2*	s.d.= 6
	Student house	91	27,3	*186*	*55,9*	56	16,8	333	39,3	p=.000
	Others	43	42,6	*45*	*44,6*	13	12,9	101	11,9	*p < 0,05*
	Total	262	30,9	*442*	*52,1*	144	17	848	100	
Frequency of the consumption of meat-dairy products	With the family	*33*	*68,8*	12	25	3	6,3	48	5,7	χ2 =27,672
	Dormitory	133	36,3	*149*	*40,7*	84	23	*336*	*43,2*	s.d.= 6
	Student house	121	36,3	*135*	*40,5*	77	23,1	333	39,3	p=.000
	Others	*51*	*50,5*	37	36,6	13	12,9	101	11,9	*p < 0,05*
	Total	*338*	*39,9*	333	39,3	177	20,9	848	100	

When Table 3 is examined, it is seen that 366 (43.2%) of the pre-service teachers live in a dormitory, 333 (39.3%) live in a student house and 101 (11.9%) selected "the others" as their place of residence. The number of the pre-service teachers living with their families is the lowest with 48 (5.7%). High majority of the pre-service teachers live in dormitories or student houses as probably they study in a different city from their home towns.

Of the pre-service teachers living in a dormitory, 190 (51.9%) responded to the frequency of consuming grain products as "partially", 196 (53.6%) responded to the frequency of consuming fruit-vegetables as "partially" and 149 (40.7%) responded to the frequency of consuming meat-dairy products as "partially". On the basis of these findings, it can be maintained that the state of adequate and balanced eating habits of the pre-service teachers staying in a dormitory is at the "medium" level.

Of the pre-service teachers staying in student houses, 168 (50.5%) marked the option of "partially" for the consumption of grain products, 186 (55.9%) marked the option of "partially" for the consumption of fruit and vegetables and 135 (40.5%) marked the option of "partially" for the consumption of meat-dairy products.On the basis of these findings,it can be maintained that the state of adequate and balanced eating habits of the pre-service teachers staying in a student house is at the "medium" level.

When Table 3 is examined, it is seen that living with the family has some positive contributions to the eating habits. Of the pre-service teachers living with their families, 26 (54.2%) selected the option "yes" for the consumption of grain products, 31 (64.6%) selected the option of "yes" for the consumption of fruit and vegetables and 33 (68.8%) selected the option of "yes" for the consumption of meat-dairy products.Moreover, Chi-square results revealed that there is a significant

correlation between the place or residence and the consumption of both grain products and fruit and vegetables and meat-dairy products in favor of those living with their families (p < 0,05).This shows that living with the family makes more positive contributions to the state of adequate and balanced eating than the other types of place of residence.The state of adequate and balanced eating of the pre-service teachers living with their families is at the level of "good".

When these findings are generally evaluated, it is seen that regardless of their place of residence, the option selected most by the participants was "partially" as response to consumption frequency of the food items important for adequate and balanced eating; thus, it can be claimed that the participants' general state of adequate and balanced eating is at the "medium" level.

Table 4: *The State of the Participants' Adequate and Balanced Eating in relation to Their BMI Values*

Criterion	BMI value	Yes		Partially		No		Total		Chi-square test
		N	%	N	%	N	%	N	%	
Frequency of the consumption of grain products	No response	6	35,3	*9*	*52,3*	2	11,8	17	2	
	Low	62	32,1	*94*	*48,7*	37	19,2	193	22,8	χ2 =5,744
	Normal	165	29	*290*	*51,1*	113	19,9	*568*	*67*	s.d.= 10
	Medium	12	37,5	*15*	*46,9*	5	15,6	32	3,8	p=.836
	High	11	36,7	*15*	*50*	4	13,3	30	3,5	p > 0,05
	Very high	*4*	*50*	*4*	*50*	0	0	8	,9	
	Total	260	30,7	*427*	*50,4*	161	19	848	100	
Frequency of the consumption of fruit and vegetables	No response	5	29,4	*9*	*52,9*	3	17,6	17	2	
	Low	59	30,6	*105*	*54,4*	29	15	193	22,8	χ2 = 6,423
	Normal	173	30,5	*291*	*51,2*	104	18,3	*568*	*67*	s.d.= 10
	Medium	10	31,3	*18*	*56,3*	4	12,5	32	3,8	p=.779
	High	10	33,3	*16*	*53,3*	4	13,3	30	3,5	p > 0,05
	Very high	*5*	*62,5*	3	37,5	0	0	8	,9	
	Total	262	30,9	*442*	*52,1*	144	17	848	100	
Frequency of the consumption of meat-dairy products	No response	6	35,3	*9*	*52,9*	2	11,8	17	2	
	Low	73	37,8	*78*	*40,4*	42	21,8	193	22,8	χ2 = 9,534
	Normal	223	39,3	*221*	*38,9*	124	21,8	*568*	*67*	s.d.= 10
	Medium	*16*	*50*	12	37,5	4	12,5	32	3,8	p=.482
	High	*14*	*46,7*	12	40	4	13,3	30	3,5	p > 0,05
	Very high	*6*	*75*	1	12,5	1	12,5	8	,9	
	Total	*338*	*39,9*	333	39,3	177	20,9	848	100	

When Table 4 is examined, it is seen that 568 (64%) of the pre-service teachers have a "normal" BMI value, 193 (22.8%) havea "low" BMI value, 32 (3.8%) have a "medium" BMI value.These findings indicate that the pre-service teachers' height-weight ratios are normal in general. Furthermore, given that a normal BMI value is an indication of a good health, the pre-service teachers seem to be healthy individuals in general.As 17 (2%) of the participants did not provide

information about their heights and weights in the questionnaire, they were not evaluated in terms of their BMI values.

Of the pre-service teachers having a normal BMI value, 290 (51.1%) selected the option of "partially" as the best representative of their grain products consumption behavior, 291 (51.2%) also selected the option of "partially" as the best representative of their fruit and vegetables consumption behavior and 221 (38.9%) again selected the option of "partially" as the best representative of their meat-dairy products consumption behavior.In light of these findings, the state of adequate and balanced eating of the pre-service teachers having a normal BMI value can be said to be at the "medium" level.

Of the pre-service teachers having a low BMI value, 94 (48.7%) selected the option of "partially" as the best representative of their grain products consumption behavior, 105 (54.4%) also selected the option of "partially" as the best representative of their fruit and vegetables consumption behavior and 78 (40.4%) selected again the option of "partially" as the best representative of their meat-dairy products consumption behavior. In light of these findings, the state of adequate and balanced eating of the pre-service teachers having a low BMI value can be said to be at the "medium" level.

Another important finding that can be seen when Table 4 is examined is that of the pre-service teachers selecting the option of "yes" as the best representative of their meat-dairy consumption behavior, 16 (50%) have a medium BMI value, 14 (46.7%) have a high BMI value and 6 (75%) have a very high BMI value. When this finding is interpreted considering the healthy eating pyramid, it can be argued that more consumption of meat-dairy products than grain products and fruit and vegetables might have resulted in the pre-service teachers' having medium or higher BMI values. For a healthy life, a normal BMI value is important. The risk of catching diseases is higher for individuals having low, medium or high BMI values. Thus, it can be told that the pre-service teachers are not good in terms of adequate and balanced eating. Moreover, Chi-square results revealed that there is no significant correlation between BMI values and the consumption of the food items necessary for adequate and balanced eating ($p > 0.05$). On the basis of these findings, it can be contended that regardless of their BMI values, the pre-service teachers share similar characteristics in terms of their eating habits.

When these findings are generally evaluated, it is seen that regardless of their BMI values, the option selected most by the participants was "partially" as response to consumption frequency of the food items important for adequate and balanced eating; thus, it can be claimed that the participants' general state of adequate and balanced eating is at the "medium" level.

Table 5: *The State of the Pre-service Teachers' Water Consumption in relation to Gender, Place of Residence and BMI Values*

Variables		1 L and less		1.1 – 1.5 L		1.6 – 2 L		2.1 L and more		Total		$\overline{X}$
		N	%	N	%	N	%	N	%	N	%	
Gender	**Female**	196	38,1	*206*	*40,6*	72	14	38	7,4	*515*	60,7	1,9068
	Male*	95	28,5	*130*	*39*	79	23,7	29	8,7	333	39,3	2,1261
	Total	291	34,3	*339*	*40*	151	17,8	67	7,9	848	100	
	t-test	T = -3,428		p = .001		*p < 0,05*						
Place of residence	**With the family**	12	25	*20*	*41,7*	11	22,9	5	10,4	48	5,7	Chi-Square Tests
	Dormitory	126	34,4	*153*	*41,8*	55	15	32	8,7	*366*	*43,2*	χ2=10,090
	Student house	111	33,3	*133*	*39,9*	68	20,4	21	6,3	*333*	39,3	s.d.= 9
	Others	*42*	*41,6*	33	32,7	17	16,8	9	8,9	101	11,9	p=.343
	Total	291	34,3	*339*	*40*	151	17,8	67	7,9	848	100	p > 0,05
BMI values	**No response**	6	35,3	*8*	*47,1*	2	11,8	1	5,9	17	2	Chi-Square Tests
	Low	*83*	*43*	75	38,9	23	11,9	12	6,2	193	22,8	χ2 =18,942
	Normal	*186*	*32,7*	225	39,6	109	19,2	48	8,5	*568*	*67*	
	Medium	9	28,1	*12*	*37,5*	8	25	3	9,4	32	3,8	s.d.= 15
	High	7	23,3	*15*	*50*	6	20	2	6,7	30	3,5	p=.216
	Very high	0	0	*4*	*50*	3	37,5	1	12,5	8	,9	p > 0,05
	Total	291	34,3	*339*	*40*	151	17,8	67	7,9	848	100	

When Table 5 is examined, it is seen that of the female pre-service teachers, 206 (40.6%) and of the male pre-service teachers, 130 (39%) consume 1.1-1.5 L water. When this finding is considered in light of the fact that the amount of water daily needed by human body is 3 L and 1.5 L of this amount should be taken as direct water intake, the pre-service teachers seem to be consuming amount of water that is ideal for human body.

Of the pre-service teachers staying in a dormitory, 153 (41.8%) consume 1.1-1.5 L water, of the pre-service teachers staying in a student house, 133 (39.9%) consume 1.1-1.5 L water and of the pre-service teachers living with their families, 20 (41.7%) consume 1.1-1.5 L water and the pre-service teachers selecting "the others" option as their place of residence consume 1 L or less water. Moreover, Chi-square test revealed that there is no significant correlation between the place of residence and water consumption (p > 0.05). This shows that the place of residence does not have a significant impact on the pre-service teachers' water consumption behavior. In addition, the pre-service teachers selecting the option of "the others" as their place of residence seem to have the lowest water consumption. Thus it can be argued that the students selecting the option of "the others" as their place of residence have worse eating habits as they neglect the consumption of water that is very important for human health.

Of the pre-service teachers having a normal BMI value, 186 (32.7%) consume 1 L or less water and of the pre-service teachers having a low BMI value, 83 (43%) consume 1 L or less water. On the other hand, the pre-service teachers having a high BMI value, 15 (50%) consume 1.1-1.5 L water. Moreover, Chi-square test revealed that there is no significant correlation between BMI value and water consumption (p > 0.05). This shows that the pre-service teachers' BMI values do not have

a significant effect on their water consumption. Moreover, while the pre-service teachers having a low or normal BMI value consume 1 L or less water, the pre-service teachers having a medium, high and very high BMI value consume 1.1-1.5 L water and this may mean that with increasing BMI value, the water consumption also increases.

When these findings are generally evaluated, it is seen that the majority of the teachers directly consume 1.1-1.5 L water; thus, it can be argued that water consumption is enough for adequate and balanced dieting and the water consumption of the pre-service teachers is normal; yet, their consumption of the other food items is not adequate accordingly their indirect water intake might not be adequate. Thus, it can be maintained that their general water intake is not enough.

DISCUSSION AND CONCLUSION

Of the 848 pre-service teachers participating in the study, 515 (60.7%) are females and 333 (39.9%) are males. While there is no connection between the consumption of grain products including carbohydrates providing a large amount of the daily energy need of the body and gender, in terms of the consumption of fruit and vegetables and meat-dairy products, there is a correlation in favor of the male pre-service teachers (see table 2).Sarıdağ-Devran (2014) conducted a study to determine whether students from Bingol University have any eating disorders and found no eating disorder in 85.9% of the male students and 75.5% of the female students, in general in 79.2% of the students. Moreover, it was also found that there is no correlation between the mean scores for eating behaviors and gender (p=0.35); yet, when the state of absence of eating disorder in relation to gender was investigated, a correlation based on gender was found (p=0.06).Racetteet al., (2005) conducted a study on 764 university students and reported that gender affects eating habits. Female students consume more fatty foods than male students but their fruit and vegetables consumption is similar. Daviy et al., (2006) conducted a study with the participation of 286 undergraduate students and found that female students put greater effort to keep their weight under control by consuming less fatty food items with less carbohydrate content and more vegetables than male students. This finding is parallel to the finding of the current study because here it was also found that the male pre-service teachers have a greater tendency to consume more fruit and vegetables and meat-dairy products than the female pre-service teachers.

Of the pre-service teachers participating in the current study, 366 (43.2%) stay in a dormitory, 333 stay in a student house (39.3%), 101 (11.9%) stay in "the others". The smallest number of pre-service teachers live with their families (n=48; 5.7%).It was found that there is a correlation between the pre-service teachers' frequency of consuming the fruit and vegetables and meat-dairy products required for adequate and balanced eating and place of residence in favor of the pre-service teachers living with their parents (see table 3).It was reported that while some students' consumption of fresh vegetables and fruits, fatty fish, sea food, legumes and olive oil decreased after they started university, their sugar, wine and beer consumption increased (Papadakiet al., 2007).Grace (1997) conducted a study on university students and found that while 69% of the students do not have any daily fruit consumption, 48% of them eat vegetable more than once. In the same study, it was also found that the contribution of proteins to total energy is higher for students living outside the campus. When the results of the current study and results reported in the literature are examined, it can be concluded that pre-service teachers' place of residence affects the development of correct eating habits.

Of the pre-service teachers participating in the current study, 568 (64%) have a "normal", 193 (22.8%) have a "low", 32 (3.8%) have a "medium" BMI value. BMI values were not calculated for 17(2%) pre-service teachers who did not indicate their heights and weights that are necessary to calculate BMI values. According to the data reported by The Turkish Statistical Institute Health

Survey (TÜİK, 2012), 17.2% of the Turkish population is obese, 34.8% is overweight, 44.2% is normal weight and 3.9% is thin.These data do not exhibit a complete compliance with our finding. This might be because that TÜİK's survey was conducted on a sampling representing the whole population of Turkey, but the current study's population only represents a certain section of the society (pre-service teachers). In the study of Sarıdağ-Devran (2014), it was found that 73.9% of the male students and 72.7% of the female students have normal BMI values, and of all the students, 7.9% are thin and 2.2% are obese. This finding concurs with the finding of our study. It was found that there is no correlation between BMI values and the frequency of consuming fruit and vegetables and meat-dairy products necessary for adequate and balanced eating (see table 4). In contrast, Sarıdag-Devran (2014) found a significant correlation between students' eating disorders and their BMI values ($p<0.05$).Students having eating disorders can be said to be under greater risk of having BMI values indicating obesity or extreme obesity and accordingly of catching chronic diseases. Özgün-Başıbüyük and Akın (2007) found that women have higher BMI values than men. When our data related to BMI values and frequency of consuming food items are examined, it is seen that the pre-service teachers consuming more meat-dairy products than grain products and fruit and vegetables have medium or high BMI values (see table 4).

Consumption of the food items as proposed in the healthy eating pyramid is of great importance in terms of developing correct eating habits. According to the nation data of America, more than 60% of young people consume too much fat; less than 20% of them daily consume fruit and vegetables five times or more and all over the world, while generally more fat is consumed, less fruit and vegetables are consumed. These findings can explain the increase in obesity incidences and its related diseases (Hossapidou and Fotiadou, 2001; Paulus et al., 2001). Sarıdag-Devran (2014) also found that the mean energy intake of the students is low, and their fat consumption is high.

Of the female pre-service teachers participating in the current study, 206 (40.6%) and of the male students, 130 (39%) stated that their daily direct water intake is 1.1 -1.5 L.A correlation was found between water consumption and gender in favor the male students (see table 5).

Of the pre-service teachers staying in a dormitory, 153 (41.8%); of the pre-service teachers staying in a student house, 133 (39.9%) and of the pre-service teachers living with their families stated that they daily consume 1.1 -1.5 L water. The pre-service teachers selecting "the others" as their place of residence stated that they consume 1.l or less water. No significant correlation was found between the pre-service teachers' water consumption and place of residence (see table 5).

Of the pre-service teachers having a normal BMI value, 186 (32.7%) and of the pre-service teachers having a low BMI value, 83 (43%) stated that they daily consume 1 L or less water. On the other hand, of the pre-service teachers having a high BMI value, 15 (50%) stated that they consume 1.1-1.5 L water. No significant correlation was found between the pre-service teachers' water consumption and BMI values.

When the pre-service teachers' direct water consumption is considered, it can be argued that they consume water at "normal" level. Sarıdag-Devran (2014) found the mean water consumption of students as 1465±685.0 ml. This finding is parallel to our finding.

In this regard, it can be concluded that the pre-service teachers' state of adequate and balanced eating habits is at the medium level and state of water consumption is at the low level. Sarıdağ-Devran (2014) reported that university students consume inadequate amounts of many nutritional elements (E vitamin, B1 vitamin, folic acid, calcium, magnesium, and iron in female students) and have wrong eating habits. These findings concur with our findings. In general, our findings show that the pre-service teachers' adequate and balanced eating is at the medium level

regardless of their gender, place of residence and BMI values and their water consumption is also at the medium level; thus, we can argue that the pre-service teachers have wrong eating habits.

SUGGESTIONS

In light of the findings of the study, the following suggestions were made.

1. In the study, a result was found that male students consume more fruit and vegetables, and meat-dairy products than female students.In this regard, given that the female students might be more concerned about their weight and therefore prone to go on a diet, the female students should be better informed about eating and dieting.

2. The study revealed that living with the family has positive contributions to the development of healthy eating habits; therefore, students staying in different places of residence should be informed about how to feed themselves as if they were living with a family.

3. It was found that many students stay in dormitories and are at the medium level in terms of adequate and balanced eating. This may indicate that foods offered in dormitories are not suitable for adequate and balanced eating; therefore, more healthy foods to raise students' adequate and balanced eating level to the level of "good" should be provided in dormitories.

4. The pre-service teachers consuming more meat-dairy products than grain products were found to have higher BMI values. Thus, the students should be informed about the ideal amounts of food items to be consumed from the healthy eating pyramid.

5. The pre-service teachers' water consumption level was found to be low. Therefore, the pre-service teachers should be informed about the relationship between healthy body and water consumption.

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