T. C.
YEDITEPE UNIVERSITY
INSTITUTE OF HEALTH SCIENCES
DEPARTMENT OF NUTRITION AND DIETETICS

INVESTIGATION OF THE EFFECT OF EDUCATIONAL LEVEL ON NUTRITIONAL HABITS IN INDIVIDUALS AGED 18-35 APPLY TO PRIMARY HEALTH CARE INSTITUTIONS

MASTER THESIS

Yazgı Işıl KAYABAŞOĞLU, M.D.

Istanbul-2020

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SUPERVISOR

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Istanbul-2020

TEZ ONAYI FORMU

Kurum : Yeditepe Üniversitesi Sağlık Bilimleri Enstitüsü

Program : Beslenme ve Diyetetik

Tez Başlığı :Birinci Basamak Sağlık Kuruluşuna Başvuran 18-35 Yaş Arası Bireylerde Eğitim Düzeyinin Beslenme Alışkanlıklarına Etkisinin Araştırılması.Tez Sahibi : Yazgı Işıl KAYABAŞOĞLU

Sınav Tarihi : 23.01.2020

Bu çalışma jurimiz tarafından kapsam ve kalite yönünden Yüksek Lisans Tezi olarak kabul edilmiştir.

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ONAY

Bu tez Yeditepe Üniversitesi Lisansüstü Eğitim-Öğretim ve Sınav Yönetmeliğinin ilgili maddeleri uyarınca yukarıdaki jüri tarafından uygun görülmüş ve Enstitü Yönetim Kurulu'nun 07/02/2020 tarih ve 2020/02-09 sayılı kararı ile onaylanmıştır.

Prof. Dr. Bayram YILMAZ
Sağlık Bilimleri Enstitüsü Müdürü

DECLARATION

I hereby declare that this thesis represents my own work, I did not have any unethical behavior at any stage from planning to writing, I obtained all the information within the academic and ethical rules, I cited all the information and interpretations that were not obtained by the thesis study, and I have shown these sources in the list of sources and I have not violated patents and copyrights during thesis work and writing.

2019/12/18

Dr. Yazgı Isıl Kayabasoglu

ACKNOWLEDGEMENTS

I offer my endless gratitude,

To my esteemed thesis supervisor, Yeditepe University Health Sciences Institute Head of Nutrition and Dietetics Department Prof.Dr. Dr. Baki Serdar ÖZTEZCAN, who has always been with me with his vast knowledge and experience, who has always supported me at all stages of my study and guided me by taking over my thesis consultancy during my study,

To all my department lecturers,

To my valuable friend, Istanbul Kültür University Nutrition and Dietetic Research Assistant Pelin CIN, who helped me throughout my thesis study and always supported,

To my precious lecturer Dr. Yaşar Birol SAYGI, who never left me alone during my work and was always beside me scientifically and spiritually with his knowledge and experience,

To my spouse and family, who have always been with me in every period of my life and who gave all kinds of financial and moral support…

Dr. Yazgı Isıl Kayabasoglu

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LIST OF SYMBOLS and ABBREVIATIONS

BMI	Body Mass Index
SES	Socioeconomic Status
USA	United States of America
WHO	World Health Organization
TSI	Turkey Statistical Institute
TNHS	Turkey Nutrition and Health Survey
Min	Minimum
Max	Maximum
Kg	Kilograms
g	Gram
m	Meter
kg / m2	Kilogram / meter2
n	Number of Samples
p	Difference Value
%	Percent

ABSTRACT

Kayabasoglu, Y.I. (2020) Investigation of the effect of educational level on nutritional habits in individuals between the ages of 18-35 who apply to primary health care institutions. Yeditepe University, Institute of Health Sciences, Department of Nutrition and Dietetics, Master Thesis. Istanbul

This study was conducted to investigate the effect of the educational level of individuals between the ages of 18-35 who applied to a primary health care institution on their nutritional habits. The sample of the study consists of 356 individuals (198 women, 158 men) aged between 18-35 years, who applied to the Campus Family Health Center in Serdivan district of Sakarya for various reasons and agreed to participate to the research. The research was carried out between January 2018 and May 2018. The data were obtained by using a face-to-face interview technique with a data collection form that questions socio-demographic information and nutritional habits of individuals. The data obtained were analyzed with SPSS 25.0 package program. Significance was evaluated at the level of $p < 0.05$. In the form, the participants' information such as age, marital status, education, and working status, height-weight information, body perceptions, physical activity status, current diseases, and their nutritional habits were questioned. The average age of the individuals participating in the research is 28,098 ± 5,128. The education levels of the individuals are grouped as literate/primary school, middle school / high school and university/master/doctorate. Body mass index (BMI) of 29.0% of the participants is overweight and obese according to the World Health Organization classification. A statistically significant difference was determined between the educational level of the participants and their BMI ($p = 0.002$). As the educational level of the individuals increased, a significant decrease was determined in their BMI. In our study, it was determined that individuals with high education level had breakfast more frequently, but they skipped lunch more frequently, they tried to buy food that they thought was good quality by considering labels, content, brands, and they gave importance to the expiration date. As the level of education of the participant's increases, the frequency of physical activity increases. All these factors are thought to be the cause of lower BMI in individuals with higher educational levels.

Keywords: nutrition, nutritional habits, educational level, nutritional status

ABSTRACT (Turkish)

Kayabasoglu, Y.I. (2020) Birinci basamak sağlık kuruluşuna başvuran 18-35 yaş arası bireylerde eğitim düzeyinin beslenme alışkanlıklarına etkisinin araştırılması. Yeditepe Üniversitesi, Sağlık Bilimleri Enstitüsü, Beslenme ve Diyetetik Anabilim Dalı, Yüksek Lisans Tezi. İstanbul

Bu çalışma bir birinci basamak sağlık kuruluşuna başvuran 18-35 yaş arasındaki bireylerin eğitim düzeyinin beslenme alışkanlıklarına etkisinin araştırılması amacıyla yapılmıştır. Çalışmanın örneklemini Sakarya ili Serdivan ilçesinde bulunan Kampüs Aile Sağlığı Merkezine çeşitli nedenlerle başvuran ve araştırmaya katılmayı kabul eden 18-35 yaş arası 356 (198 kadın, 158 erkek) birey oluşturmaktadır. Araştırma Ocak 2018-Mayıs 2018 tarihleri arasında yapılmıştır. Veriler bireylerin sosyodemografik bilgileri ve beslenme alışkanlıklarını sorgulayan veri toplama formu ile yüz yüze görüşme tekniği kullanılarak ile elde edilmiştir. Elde edilen veriler SPSS 25.0 paket programı ile analiz edilmiştir. Anlamlılık $p<0,05$ düzeyinde değerlendirilmiştir. Formda katılımcıların yaş, medeni hal, eğitim ve çalışma durumları, boy-kilo bilgileri, beden algıları, fiziksel aktivite durumları, mevcut hastalıkları gibi bilgileri ve beslenme alışkanlıkları sorgulanmıştır. Araştırmaya katılan bireylerin yaş ortalaması 28,098±5,128'dir. Bireylerin eğitim düzeyleri okuryazar/ilkokul, ortaokul/lise ve üniversite/yüksek lisans/doktora olarak gruplandırılmıştır. Katılımcılardan %29,0' unun beden kitle indeksi (BKİ) Dünya Sağlık Örgütü sınıflandırmasına göre fazla kilolu ve obezdir. Katılımcıların eğitim düzeyi ile BKİ'leri arasında istatiksel olarak anlamlı fark bulunmuştur ($p=0,002$). Bireylerin eğitim düzeyi yükseldikçe BKİ' lerinde anlamlı düzeyde bir azalma saptanmıştır. Çalışmamızda eğitim düzeyi yüksek bireylerin daha sık kahvaltı ettikleri, buna karşın öğle öğününü daha sık atladıkları, gıda alışverişi yaparken etiket, içerik, marka gözeterek kaliteli olduğunu düşündükleri gıdaları satın almaya çalıştıkları ve son kullanma tarihine önem verdikleri tespit edilmiştir. Katılımcıların eğitim düzeyi yükseldikçe fiziksel aktivite sıklığı da artmaktadır. Tüm bu etkenlerin eğitim düzeyi yüksek bireylerde daha düşük BKİ nedeni olduğu düşünülmektedir.

Anahtar Kelimeler: beslenme**,** beslenme alışkanlığı, eğitim düzeyi, beslenme durumu

1. INTRODUCTION and PURPOSE

According to the World Health Organization, "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity"[1]. The health of a society is one of the primary factors that determine the development level of society[2]. Health is also concerned with the ability of people to develop their competencies throughout their lives. In this sense, it is claimed that being healthy is one of the most important sources of happiness [3].

It is not enough to explain the development level of a country only with national income per capita. In the reports published by the United Nations, health and education are also considered as one of the most basic components of the level of development. Improvements in education and health are regarded as the main determinants of human development[4]. Education improves and develops health practices, positively affects the demographic structure, contributes to better quality, and more prosperous life. Education also plays an important role in preventing malnutrition and diseases. Therefore, education enables the use of resources much more efficiently by reducing public health expenditures[3].

In recent years, dizzying changes in communication technology and advances in the world of medicine have significantly affected individuals' perception of health and wellness[5]. Nutrition is coming at first of the environmental factors that affect health positively or negatively[6]. In addition to meeting the basic needs of the body, the healthy nutrition of the individual and the society is a conscious behavior that is carried out to ensure the continuity of life, to protect and improve health. Adequate and balanced nutrition is also expressed as intake adequate amounts of each of the nutrients that necessary for growth and development and use them properly[7]. Adequate and balanced nutrition throughout the entire life has undeniable importance for growth and development, protection, improvement, and development of health and increasing quality of life[8].

The effects of healthy lifestyle changes such as proper nutrition and adequate physical activity are gaining more importance in the prevention and treatment of chronic diseases such as type 2 diabetes and obesity, whose frequency is increasing and still not treated despite the new and effective treatment methods emerging in the field of medicine[5].

For all these reasons, nutrition and health are an inseparable whole. This study aims to reveal the positive relationship between educational level and healthy nutrition habits and to contribute to a healthier society by at least increasing the knowledge level of the society about nutrition.

2. LITERATURE REVIEW

Primary health care institutions, which are the foundation of the health system all over the world, are defined as health care institutions where individuals apply for various reasons and convey their health problems and where a significant part of the society is treated. Also primary health care institutions are defined as the places where individuals are referred to secondary and tertiary health institutions when necessary and where protective health services are provided[9]. Primary health care is the step where the broadest and most comprehensive service is provided within the health system[10]. It is a multi-dimensional system that contains many parameters[11]. Primary health care is the first place of application; it contains valuable statistical information in measuring the health level of the society as it is where the individual who wants to receive health service is the first place to reach the health system in every new situation that arises due to any health problem[12].

Individuals' health conditions; is the combination of many social and cultural environmental conditions such as genetic structures, ages, nutritional status, lifestyles (physical activity, smoking, alcohol consumption, etc.), environmental factors (home conditions, hygiene etc.), stress exposure, working conditions and family support[13]. The deficiency of any of these environmental factors that shape the life of the individual has a negative effect on the health of the individual and the society[14]. One of the factors that will reduce this negative effect is nutrition. Nutrition is a behavior that should be performed consciously for the intake of the nutrients needed in the body in adequate amounts and at appropriate times to increase the quality of life and to protect and promote health[8]. When people have proper nutrition, they become physically healthier, they work more efficiently, their performance increases in the business environment and they continue their lives happier because they feel socially well[13]. In the group, that forms the bottom step of Maslow's Needs Hierarchy, that is the group which consisting of the most basic physiological needs, also exists nutrition and it is stated that cannot require others before these needs are met adequately[6]. In the care system which puts the health to its center one of the main purposes is, to enable the individual to gain health-improving

behaviors. Achieving this behavior is closely related to having adequate nutritional knowledge and educational level too[2].

1.1.Nutrition

Today, although the importance of adequate and balanced nutrition has been demonstrated by many studies, situations such as variations in economic conditions, individualization and urbanization that have emerged as a result of globalization have brought about changes also in nutritional habits. In addition, due to the failure to provide nutrient safety and guarantee and changes in dietary habits, losses occurred in traditional nutrient culture. The increasing pace of life with globalization has caused severe changes in the nutritional habits and nutritional preferences of societies. All these changes have led to an increase in the marketing and access of products with low nutritional valued foods such as high saturated fat, sugar and salt content, insufficient fiber, and insufficient some vitamins/minerals. Thus, the consumption of these products has also increased[8]. With the need to eat faster, fast-food style nutrition has become more and more preferred day by day[15]. As a result of the irregular meal and unhealthy nutrition, the frequency of obesity is increasing worldwide[16]. It is known that this change brings nutrition problems to the forefront in terms of current disease and death risks in the world and in our country[17]. Nutritional information covers all nutritional processes, such as the relationship between diet and health, the relationship between diet and disease, food sources, and ultimately the right diet recommendations[18]. Nutritional information also changes parallel to globalization with simultaneously the loss of many other cultural features.

If need to look at the personal factors that affect nutritional habits; behaviors, beliefs, knowledge, self-esteem, main meal and snack consumption are effective on weight control. In addition to personal factors, changes in the individual's social environment also affect weight control. The social-environmental factors that affecting eating habits are family, friends and other close environment[1]. Nutrition rules differ between countries, but generally aim to provide adequate and balanced nutrition and reduce the risk of nutritionally related disease[19]. The conditions of healthy nutrition can be listed as follows; consumption of adequate amounts of food, wide variety of nutrients,

balanced consumption of meals, high quality, high nutritional values, economic and high hygienic conditions[20].

Some foods are rich in terms of containing the nutrients necessary for the body, and some foods are poor. The issue emphasized with the definition of healthy nutrition is all nutrients can be intake in sufficient and balanced amounts. The main lines of a healthy diet are: food variety, abundant vegetable and fruit consumption, reasonable amounts of oil consumption, less salt and sugar consumption[21]. There must be a balance between intake and consumption of calories. To avoid unhealthy weight gain, total fat intake should not exceed 30% of the daily intake of energy[22]. Saturated fat consumption should be less than 10% of the daily intake of energy and trans-fat consumption should be less than 1% of daily energy[23]. In fat consumption, unsaturated fats rather than saturated and trans fats should be preferred, and the consumption of industrially-produced trans fats should be eliminated completely[24]. Energy taken from carbohydrates should be 45-60% of the daily energy. 10-20% of daily energy should be taken from proteins. Among the foods offered for packaged consumption, similar foods with lower total fat, saturated and trans fat, cholesterol and carbohydrate contents should be preferred by reading the label information[8]. Salt consumption should be less than 5 g per day (equivalent to sodium intake of less than 2 g per day) and iodized salt should be preferred[25].

Individuals sustain their nutritional habits that they have gained at the period of their youth. Wrong nutritional habits can cause obesity. The onset of obesity extends to youth and childhood in the vast majority of obese individuals. Those who are obese during childhood or adolescence are 14-41% more likely to be obese in adulthood compared to those with weak and normal weight[6].

2.2. Obesity

Obesity is defined by the World Health Organization (WHO) as abnormal or excessive fat accumulation that presents a risk to health[14]. The cause of obesity and overweight is the imbalance between energy intake and energy expenditure. In the etiology there are -decreased- physical activity and sedentary lifestyle with the increase of high-calorie and fatty food consumption[26]. The formation of obesity depends on age,

gender, economic status, education level, nutritional habits, physical activity, environmental factors, genetic and psychological factors. The incidence of obesity is increasing gradually in youth and childhood as well as in adulthood[15]. Obesity affects almost all age groups and individuals at all socioeconomic levels[26].

Body mass index (BMI) formula has been developed to define obesity. BMI is calculated by dividing the body weight of the person (kg) by the square of the height (m). It is grouped as the individuals with a BMI below 18.5 are weak, individuals in the 18.5-24.9 range are normal weight, individuals in the 25-29.9 range are overweight (fat), and individuals with over 30 BMI are obese[14]. Fat tissue constitutes on average 25-30% of body weight in women and 15-20% in men. If this rate exceeds 30% in women and 25% in men, obesity is in question[27].

The prevalence of obesity is increasing in developing and developed countries[28]. In 2016, over 1.9 billion adults (18 years and older) were overweight. More than 650 million of these individuals were obese. This means that 39% of the world population aged 18 and over were overweight and 13% were obese[26]. Today, more than 2 billion people worldwide are overweight or obese[29]. The prevalence of obesity is 30.3% in Turkey. While the rate for men is 20.5%, it is 41.0% for women[30]. If take into account the relationship between obesity and gender, women are more prone to obesity than men. There are studies claiming that, the fact that the lean body mass gained in adolescence is higher in men than in women is the cause of gender difference in obesity.

2.3. Health Literacy

The World Health Organization has defined health literacy as “The ability of individuals to gain access to, understand and use information in ways which promote and maintain good health."[33]. Health literacy has been shown in many studies as an indicator of health outcomes and it significantly affects the nutritional and metabolic status of individuals. BMI and health literacy are interrelated; individuals with low BMI have higher health literacy, at the same time this individuals have also better nutritional habits. Health status of people with low education level is also often poor. Therefore, healthcare

professionals advocate the importance of correct lifestyle changes to lead a healthier life and prevent illness. It is very important to increase the health literacy level of societies to change the lifestyle of individuals[34].

Inequalities between socioeconomic groups in the field of health constitute one of the main challenges for public health. In general, individuals with high socioeconomic level (SES) have healthier eating habits than low SES individuals[35]. The relationship between socioeconomic status and obesity proceeds positively in men and negatively in women[31].

2.4. Nutrition and Disease

Insufficient nutritional knowledge paves the way for many diseases to occur. Due to insufficient nutritional knowledge, malnutrition habits may settle in individuals and it is very difficult to get rid of these habits. Therefore, it is very important to have knowledge about nutrition at an early age[36].

Changing nutritional habits stands out as the main parameter in reducing and even preventing the risk of chronic disease. Nutritional changes affect the risks of developing diseases such as cancer, cardiovascular diseases and diabetes not only for the person's current health, but also later in life[28].

In public health approaches, healthy nutrition practices should definitely be included in studies related to the prevention of chronic diseases. Dietary quality plays an important role in preventing chronic diseases or delaying their formation. As a result of nutritional education and health promotion activities, monitoring the changes in food consumption habits placed over time also increases success[37]. Changes to be made regarding adequate and balanced nutritional habits are effective in preventing diseases that may occur in old age while protecting the health of individuals[38]. Specific environmental factors such as social, cultural, physical, and economic are important for a healty nutrition[36].

Economic opportunities of the society and the family are one of the strongest determinants of the person's nutritional status. Many studies have demonstrated the relationship between nutritional and economic situaiton. The information obtained in the studies revealed that individuals could not feed enough and safely due to aggravating economic conditions and lack of nutrition, that they could barely feed themselves[37].

2.5. Nutrition in Turkey

Rapid social and economic changes in Turkey experienced since the 1980s also have affected food consumption habits. As a result of the western-type diet, a massive increase in animal source food consumption and a significant decrease in total grain consumption have been reported[39].

Our country contains both the problems of developing and developed countries in terms of nutritional status. The nutritional status of the people in our country shows significant differences and inequalities according to regions, seasons, socioeconomic level and urban-rural settlements. The main reason for this is the imbalance in income distribution. This affects the attribute and frequency of nutritional problems[37]. The prevalence of obesity is increasing across the country, in rural areas and low socioeconomic groups[40].

Considering the general of Turkey in food consumption, consumption of grain and cereal products come first. Following the grain group consumption, vegetable consumption comes second. Although very important foods in terms of protein, in general of Turkey, within the consumption of other food groups consumption of meat and meat products' percentage is just 3%. Among the dairy products, the products that people have the most consumption habits are yogurt and cheese types. While there is no problem regarding the amount of protein consumed in our country, there are problems regarding the concept of protein quality so there is a need to regulate the amount of protein originated from plant, especially when increasing the amount of protein from animal origin. For this reason, Turkish society should review the consumption of eggs, milk and

dairy products and meat again. In our country, there are deficiencies in vitamins and minerals (calcium, riboflavin, iron, zinc, etc.) due to the insufficient consumption of animal-sourced foods[37].

It has been determined that in the studies conducted on the nutritional habits of young individuals in our country, they generally do not pay attention to meals, they skip meals, especially breakfast, eat a single meal, consume foods such as bagels and tea and also it has been determined that economic difficulties are effective in the problem of inadequate and unbalanced nutrition, especially the students who live in dormitories do not have good nutrition due to poor dormitory conditions[14].

Inadequate and unbalanced nutrition is an important problem in our country and university students are one of the groups with the highest nutritional problems. University life is the beginning of a new era in nutrition too, as in many other issues in the life of young people. In this period, in addition to adapting to a new order they will establish, students become more open to external influences because they communicate with many new people and also they may exhibit different behaviors than they normally show in this period. The fact that their lives become faster causes an increase in unhealthy and irregular nutritional behaviors[41].

In Turkey, due to unhealthy eating, health problems are increasing especially during the adolescent and youth. Faced in the university education process problems such as obesity or over-weight are encountered due to conditions such as nutritional disorders caused by collective nutrition, economic problems, irregular eating habits, skipped meals, unhealthy food preferences[42].

2.6. Education-Health and Nutrition

The most important factor in improving people's health situations is educational level[43]. Education aims to raise a healthy society that have both individual and universal culture and a high level of knowledge[44].

Educational level has both direct and indirect effects on health. Researches have shown that more educated people tend to benefit from higher wages by better employment. As a result of this, their quality of life increases thanks to easier access to healthy food, sports, private health insurance, nominal income fluctuations that can prevent them from having a healthy lifestyle created by income inequality, and reduced income-related stress. Educated individuals consume less cigarettes and alcohol, exercise more often, eat better, and undergo more regular health checks. Also, the fact that well-educated people have relatives and friends who encourage healthier behaviors is another positive situation[20].

The low level of education and low-income individuals causes the development and continuity of obesity. Obese individuals with low socioeconomic status have lower perceptions that they have a weight problem compared to obese individuals with high socioeconomic status[45].

3. MATERIALS AND METHODS

3.1.Research Model

This research is descriptive and cross-sectional and the main purpose is "In the sample of a primary healthcare institution in Sakarya, the examination of the effect of the education levels of the individuals who consulted here on the nutritional habits'. Descriptive studies are used to determine the frequency of a health problem or event in a community group and to determine in whom, at where and when this health problem occurs and to reveal the factors that may cause this problem in line with this information.

3.2. The Universe and Sample of the Research

The sample of the research forms 356 individuals aged 18-35 who consulted to the Family Health Center No. 21 in Serdivan district of Sakarya province between January 2018 and May 2018 for various reasons and agreed to participate in the research.

3.3. Inclusion and Non-Inclusion Criteria in the Research

Inclusion Criteria

• Having signed the informed consent form about the willingness to participate in the research.

• To have consulted to the Campus Family Health Center in Serdivan district of Sakarya for any reason between January-May 2018.

• Being between the ages of 18-35

Non-Inclusion Criteria

• To have not signed the informed consent form to participate in the research.

• Being outside the group determined for the research.

• To give inconsistent answers to conditional questions and incomplete answers to the survey questions.

3.4. Collection and Evaluation of Data

The data collection form was used to collect the data of the research. Accordingly, the research data were collected using the face to face interview technique of the data collection form consisting of 27 questions. The data collection form consists of two parts. There are 13 questions in the demographic information section and 14 questions in the nutritional habits section.

Participants generally answered the questions with the help of multiple choice and likert type options. However, some questions such as year of birth, height, body weight were asked as open-ended and answers were collected. In Likert-type questions, participants gave answers as "1 = 3 or more per week, 2 = 1-2 per week, 3 = 1 in 15 days, 4 = none", etc. The responses were evaluated by frequency analysis.

For the study to be conducted, individuals who agreed to participate in the study were given verbal information about the study and their permission was obtained, and then they were asked to sign the Informed Consent Form.

By analyzing the data collected within the scope of the research, quantitative analysis methods were used to reveal the effect of education levels of individuals between the ages of 18-35 on their nutritional habits.

The following classification criteria of the World Health Organization were used to analyze the distribution of the participants according to the BMI classification:

• Weak (<18,5 kg / m^2)

• Normal (18.5- 24,9 kg / m^2)

• Overweight (25.0- 29,9 kg / m^2)

• Obese (≥ 30,0 kg / m^2)

All data obtained were analyzed with Statistical Package for the Social Sciences (SPSS) 25.0 statistics program.

Numerical variables are shown as mean, median, lower-upper values, and categorical variables as number (n) and percentage (%). Chi-Square Test ($\chi 2$) was used to compare qualitative variables between the two groups, and Pearson Correlation Analysis was used in the relationship between variables. "One-way Analysis of Variance" (Anova) was used to compare the averages of more than two groups. The confidence interval was 95% in the analysis, and the statistical significance in the analysis results was evaluated at the level of $p < 0.05$.

3.5. Ethical Dimension of the Research

With the decision of Sakarya University Faculty of Medicine's Non-Interventional Ethics Committee dated 04/12/2017 and numbered 71522473 / 050.01.04 / 245, it was decided that it is appropriate to conduct our study titled "Investigation of the Effect of Education Level on Nutritional Habits in Individuals Between the ages of 18-35 Applying to Primary Health Care Institutions" is ethical and scientific.

The voluntary participation of the individuals participating in the research was accepted as essential, information was given about the voluntary consent form, their signatures were taken and it was stated that they could withdraw from the research without any reason.

3.6. Limitations of the Research

The results to be obtained from the study were limited to individuals between the ages of 18 and 35 who have consulted to the Campus Family Health Center in Serdivan

district of Sakarya province between January-May 2018 for any reason and agree to participate in the research. Therefore, the fact that the results cannot be generalized to the young population in our country constitutes the limitation of the research.

4. RESULTS

4.1. Demographic Information

This study was conducted with a total of 356 individuals (198 women, 158 men) between the ages of 18-35 who applied to the primary health care institution. The distribution of demographic characteristics of the research group is shown in Table 4.1. 198 people (55.6%) were women and 158 people (44.4%) were men a total of the 356 people of participating in the study, and the average age was 28.09 ± 5.12. The average age of men participating in the study was 28.32 ± 5.13 and the average age of women was 27.81 ± 5.32 years.

When the education levels of the individuals were examined; 10.4% were only literate (10.8% of men, 10.1% of women), 24.7% were secondary school-high school (29.1% of men, 21.2% of women), 55.3% were university (53.8% of men, 56.6% of women) and 9.6% were master-doctorate (6.3% of men, 12.1% of women) graduated. In the study, no statistically significant difference was determined between the level of education by gender ($x^2 = 5.836$, $p > 0.05$) (Table 4.1).

Considering the marital status of the participants, 24.4% of all individuals were married and 75.3% were single. It was seen that 75.9% of men were single, 24.1% were married, 75.5% of women were single and 24.7% were married.

55.6% (60.7% of men, 51.5% of women) of the individuals participating in the study were working, 23.5% (17.7% of men and 28.2% of women) were not working in any job, 21.5% (21.5% of men and 20.2% of women) were students. 84.3% of all individuals participating in the study (77.8% of men and 89.9% of women) were sharing the same home with their family or friends. 15.4% of all individuals were living alone, (22.2% of men and 10.1% of women). (Table 4.1).

The anthropometric measurements of the individuals participating in the study were evaluated and are shown in Table 4.1 according to the body mass index (BMI) grouping of the World Health Organization. 11.0% of the participants were weak, 60.1% were normal, 19.7% were overweight and 9.3% were obese. While 27.2% of men were overweight and 14.6% were obese; 13.6% of women were overweight and 5.1% were obese. The average BMI of all participants was 23.07 ± 4,42 kg / m^2. While the BMI average of men was 24.78 ± 4,4 kg / m^2, the average of BMI for women was 21.71 ± 3,9 kg / m^2. There is a statistically significant difference between BMI values by gender (x^2 = 29,732, $p < 0.05$) (Table 4.1). BMI values of male participants are statistically significantly higher in overweight and obese categories than female participants.

Table 4.1. Distribution of Participants by Socio-Demographic Characteristics

	Male *(n=158)*		**Female** *(n=198)*		**Total** *(n=356)*		**p****
	n	**%**	**n**	**%**	**n**	**%**	
Average Age *					28,09 ± 5,12		
Average BMI *	24,78 ± 4,4		21,71 ± 3,9		23,07 ± 4,42		
Level of Education							
Literate / Elementary	17	10,8	20	10,1	37	10,4	**0,12**
Secondary / High School	46	29,1	42	21,2	88	24,7	
University	85	53,8	112	56,6	197	55,3	
Master / PhD	10	6,3	24	12,1	34	9,6	
Marital status							
Married	38	24,1	49	24,7	87	24,4	
Single	120	75,9	149	75,3	269	75,5	
Working Status							
Not working	28	17,7	56	28,2	84	23,5	
Working	96	60,7	102	51,5	198	55,6	
Student	34	21,5	40	20,2	74	20,7	
Living Conditions							
Alone	35	22,2	20	10,1	55	15,4	
Partner / Family / Friends	123	77,8	178	89,9	301	84,5	
BMI (kg / m^2)							
Weak	7	4,4	32	16,2	39	11,0	**0,00*****
Normal	85	53,8	129	65,2	214	60,1	
Overweight	43	27,2	27	13,6	70	19,7	
Obese	23	14,6	10	5,1	33	9,3	

**$\bar{X}$±SD, ** Chi-square test, ***p<0,05*

The smoking status of individuals participating in the study is shown in Table 4.2. 36.8% of the individuals were smoking, 4.5% smoked formerly and 58.7% never smoked. 53.8% of men and 23.2% of women were still smoking. There is a statistically significant difference in cigarette smoking by gender (x^2 = 35,310, p <0.05) (Table 4.2). Male participants smoke significantly more than female participants.

How individuals who participated in the study perceived their current weight was questioned and the results are shown in Table 4.2. 17.1% of the individuals responded as weak, 56.5% responded as normal and 26.4% responded as overweight/obese. While 19.7% of women perceived themselves as overweight / obese, 34.8% of men were perceiving themselves as overweight/obese. A statistically significant difference is found between the physical perceptions of women and men (x^2 = 10,329, $p < 0.001$) (Table 4.2). Male participants perceive themselves as overweight significantly.

The regular physical activity status of the individuals participating in the study and what activities they performed were questioned and the results are shown in Table 4.2. While 20.8% of individuals (20.9% of men, 20.7% of women) did not do any physical activity, 14.6% (18.4% of men, 11.6% of women) every 15 days, 32.6% (29.7% of men, 34.8% of women) 1-2 days a week, 31.7% (31.0% of men, 32.8% of women) were performing regular physical activity 3 days a week or more. No statistically significant difference was determined between the rate of physical activity of women and men (x^2= 3,525, $p > 0.05$).

64.0% of the participants (55.1% of men, 71.2% of women) did walking and jogging, 23.6% (25.9% of men, 21.7% of women) of them did swimming, aerobics or fitness and 23.3% (38.6% of men, 11.1% of women) of the participants stated that they were playing collective games (football, basketball, volleyball, tennis).

Table 4.2. Distribution of Participants According to Smoking, Physical Perception, Physical Activity Status and Type

	Male *(n=158)*		**Female** *(n=198)*		**Total** *(n=356)*		**p***
	n	**%**	**n**	**%**	**n**	**%**	
Smoking							
Yes	85	53,8	46	23,2	131	36,8	
No	68	43,0	141	71,2	209	58,7	**0,00****
Quit	5	3,2	11	5,6	16	4,5	
Physical Perception							
Very weak / weak	24	15,2	37	18,7	61	17,1	
Normal	79	50,0	122	61,6	201	56,5	**0,006****
Overweight / obese	55	34,8	39	19,7	94	26,4	
Physical Activity Status							
≥3 per week	49	31,0	65	32,8	114	32,0	
1-2 per week	47	29,7	69	34,8	116	32,6	**0,317**
2-3 per month	29	18,4	23	11,6	52	14,6	
None	33	20,9	41	20,7	74	20,8	
Physical Activity Type ***							
Walking / jogging	87	55,1	141	71,2	228	64,0	
Football / Basketball / Tennis	61	38,6	22	11,1	83	23,3	
Swimming / Aerobics / Fitness	41	25,9	43	21,7	84	23.6	

** Chi-square Test, ** p <0.05, *** Multiple options are marked.*

Existing diseases of all individuals participating in the study were examined and are shown in Table 4.3. 17.4% of participants (19.6% of men, 15.7% of women) had gastrointestinal system disease, 12.6% have (8.9% of men, 15.7% of women) had Vitamin B12 deficiency, 10.1% (5.7% of men, 13.6% of women) have anemia, 3.4% (2.5% of men, 4.0% of women) had thyroid disease, 1.1% (1.9% of men, 0.5% of women) had dyslipidemia, 0.6% (0.6% of men, 0.5% of women) had sleep apnea and diabetes.

Table 4.3. Distribution of Participants According to Current Diseases

	Male *(n=158)*		**Female** *(n=198)*		**Total** *(n=356)*	
	n	**%**	**n**	**%**	**n**	**%**
Diseases *	*(n=70)*		*(n=101)*		*(n=171)*	
Gastrointestinal Diseases	31	19,6	31	15,7	62	17,4
Vitamin B12 Deficiency	14	8,9	31	15,7	45	12,6
Anemia	9	5,7	27	13,6	36	10,1
Thyroid Diseases	4	2,5	8	4,0	12	3,4
Obesity	5	3,2	1	0,5	6	1,7
Dyslipidemia	3	1,9	1	0,5	4	1,1
Sleep apnea	3	1,9	1	0,5	4	1,1
Diabetes	1	0,6	1	0,5	2	0,6

** Multiple options are marked.*

4.2. Nutrition Habits

The frequency of the main meal consumption of all individuals participating in the study was examined and are indicated in Table 4.4. 4.2% (5.1% of men, 3.5% of women) of the participants stated that they did not have any breakfast and 7.9% (3.2% of men, 11.1% of women) stated that they did not eat any lunch. 21.3% (21.5% of men, 21.2% of women) of the participants stated that they had breakfast 1-3 times a week, 25.0% (22.2% of men, 27% of women) of them stated that they consumed lunch 1-3 times a week. 74.4% (73.4% of men, 75.3% of women) of the participants stated that they regularly had breakfast 4-7 times a week, 67.1% (74.7% of men, women 61.1%) of them stated that they regularly consumed lunch 4-7 times a week.

5.1% (3.8% of men, 6.1% of women) of the participants stated that they consumed dinner 1-3 times a week, and 94.9% (96.2% of men, 93.9% of women) of them stated that they consumed dinner 4-7 times a week regularly. All participants consumed dinner at least once a week.

The reasons of skipping meals of all the individuals participating in the study were examined and are stated in Table.4.4. 25.8% (22.2% of men, 28.8% of women) of the participants stated that they skipped meals due to habit, 29.5% (27.8% of men, 30.8% of women) of them due to lack of time to prepare or to eat, 9.3% (10.8% of men, 8.1% of women) of them due to lose weight and 11.8% (10.8% of men, 12% of women) of them due to lack appetite.

The frequency for snacks of all the individuals participating in the study was examined and is indicated in Table 4.4. 33.4% (37.3% of men, 30.3% of women) of the participants stated that they never consumed any mid-morning meals, 24.4% (24.1% of men, 24.7% of women) of them never consumed any afternoon meals, and 19.7% (19.0% of men, 20.2% of women) of them never consumed night meals. 37.1% (35.4% of men, 38.4% of women) of the participants stated that they consumed mid-morning meals 1-3 times a week, 41.9% (41.1% of men, women 42.4) of them consumed afternoon meals 1-3 times a week, 46.9% (39.2% of men, 53.0% of women) of them consumed night meals 1-3 times a week. 29.5% (27.2% of men, 31.3% of women) of the participants stated that they consumed mid-morning meals 4-7 times a week, 33.7% (34.8% of men, women 32.8%) of them consumed afternoon meals 4-7 times a week, 33.4% (41.8% of men, 26.8% of women) of them consumed night meals 4-7 times a week.

Table 4.4. Distribution of Participants According to Main Meal and Snack Consumption Frequencies

	Male *(n=158)*		**Female** *(n=198)*		**Total** *(n=356)*	
	n	**%**	**n**	**%**	**n**	**%**
Breakfast						
None	8	5,1	7	3,5	15	4,2
1-3 per week	34	21,5	42	21,2	76	21,3
4-7 per week	116	73,4	149	75,3	265	74,4
Noon						
None	5	3,2	22	11,1	27	7,6
1-3 per week	35	22,2	54	27,3	89	25,0
4-7 per week	118	74,7	121	61,1	239	67,1
Evening						
None	0	0	0	0	0	0
1-3 per week	6	3,8	12	6,1	18	5,1
4-7 per week	152	96,2	186	93,9	338	94,9
Reasons to Skip Meal *						
Habit	35	22,2	57	28,8	92	25,8
Lack of time	44	27,8	61	30,8	105	29,5
To lose weight	17	10,8	16	8,1	33	9,3
Anorexia	17	10,8	25	12,6	42	11,8
Mid-morning						
No	59	37,3	60	30,3	119	33,4
1-3 per week	56	35,4	76	38,4	132	37,1
4-7 per week	43	27,2	62	31,3	105	29,5
Afternoon						
None	38	24,1	49	24,7	87	24,4
1-3 per week	65	41,1	84	42,4	149	41,9
4-7 per week	55	34,8	65	32,8	120	33,7
Night before bed						
None	30	19	40	20,2	70	19,7
1-3 per week	62	39,2	105	53,0	167	46,9
4-7 per week	66	41,8	53	26,8	119	33,4

* *Multiple options are marked.*

The water consumption of all individuals participating in the study was examined and is indicated in Table 4.5. 11.2% (10.1% of men, 12.1% of women) of individuals were consuming 1-2 glasses of water a day, 59.3% (55.1% of men, 62% of women, 6) of them were consuming 3-8 glasses a day, 29.5% (34.8% of men, 25.3% of women) of them were consuming 10 glasses of water per day.

The carbonated beverage consumption of all the individuals participating in the study was examined and is indicated in Table 4.5. 20.5% (28.5% of men, 14.1% of women) of individuals were consuming carbonated drinks 1-3 times a day, 21.9% (23.4% of men, 20.7% of women) of them were consuming 2-4 times a week, 38.8% (32.9% of men, 43.4% of women) of them were consuming less than once a week.18.8% (15.2% of men, 21.7% of women) of individuals did not consume any carbonated beverage. Carbonated beverage consumption was evaluated by gender and statistically significant difference was determined ($x^2 = 13{,}606$, $p < 0.05$) (Table 4.5). Male participants consume carbonated drinks significantly more frequently than female participants.

Table 4.5. Distribution of Participants by Consumption of Water and Carbonated Beverages

	Male *(n=158)*		**Female** *(n=198)*		**Total** *(n=356)*		**P***
Water Consumption	**n**	**%**	**n**	**%**	**n**	**%**	
1-2 cups	16	10,1	24	12,1	40	11,2	
3-8 cups	87	55,1	124	62,6	211	59,3	
10 cups and above	55	34,8	50	25,3	105	29,5	
Carbonated Drink Consumption							
1-3 times a day	45	28,5	28	14,1	73	20,5	
2-4 times a week	37	23,4	41	20,7	78	21,9	
Less than 1 week	52	32,9	86	43,4	138	38,8	**0,03****
None	24	15,2	43	21,7	67	18,8	

** Chi-square Test, ** p <0.05*

The consumption of salt and calorie-reduced dietary products of the individuals participating in the study was examined and is indicated in Table.4.6. 56.5% (50.6% of men, 61.1% of women) of individuals stated that they did add salt without tasting the food. 56.5% (50.6% of men, 61.1% of women) of individuals stated that they did not add salt without tasting the food. Salt consumption was evaluated by gender and no statistically significant difference was determined ($x^2 = 4.452$, *p> 0.05*) (Table 4.6).

Considering the consumption of dietary products with reduced calories, it was seen that 19.4% (15.8% of men, 22.2% of women) of the participants consumed these foods and 45.2% (50.6% of men, 40.9% of women) did not consume these foods. The relationship of consumption of dietary products with reduced calories to gender was investigated and no statistically significant difference was determined ($x^2 = 3.968$, *p> 0.05*) (Table 4.6).

The fast-food consumption of the participants was examined and is indiciated in Table 4.6. 41.0% (46.2% of men, 36.9% of women) of the participants stated that they consumed fast food 3 times a week, 30.9% (28.5% of men, 32.8% of women) of them consumed 1-2 times a week, 20.8% (20.9% of men, 20.7% of women) of them consumed 1-2 times a month. 7.3% (4.4% of men and 9.6% of women) of individuals stated that they never consumed fast food. No statistically significant difference was determined between fast food food consumption by gender ($x^2 = 5.616$, $p > 0.05$) (Table 4.6).

The consumption of fat fried foods of the participants was examined and is indicated in table 4.6. 53.7% (50.6% of men, 56.1% of women) of the participants stated that they consumed fried foods 3 times or more per week, 32.6% (36.1% of men, women 29.8) of them consumed 1-2 times a week, 11.0% (9.5% of men, 12.1% of women) of them 1-2 times a month. 2.8% (3.8% of men, 2.0% of women) of individuals stated that they never consumed fried foods. Fat-fried food consumption was evaluated according to gender and no statistically significant difference was determined ($x^2 = 3.087$, $p > 0.05$) (Table 4.6).

Table 4.6. Distribution of Participants According to Salt, Calorie Reduced Diet Products, Fast Food and Fat Fried Food Consumption

	Male *(n=158)*		**Female** *(n=198)*		**Total** *(n=356)*		**p***
Adding Salt Without Tasting	**n**	**%**	**n**	**%**	**n**	**%**	
Yes	42	26,6	37	18,7	79	22,2	
Sometimes	36	22,8	40	20,2	76	21,3	**0,108**
No	80	50,6	121	61,1	201	56,5	
Calorie Reduced Diet Products							
Yes	25	15,8	44	22,2	69	19,4	
Sometimes	53	33,5	73	36,9	126	35,4	**0,137**
No	80	50,6	81	40,9	161	45,2	
Fast Food Consumption							
≥3 per week	73	46,2	73	36,9	146	41,0	
1-2 per week	45	28,5	65	32,8	110	30,9	**0,132**
1-2 per month	33	20,9	41	20,7	74	20,8	
None	7	4,4	19	9,6	26	7,3	
Fat Fried Food Consumption							
≥3 per week	80	50,6	111	56,1	191	53,7	
1-2 per week	57	36,1	59	29,8	116	32,6	**0,378**
1-2 per month	15	9,5	24	12,1	39	11,0	
None	6	3,8	4	2,0	10	2,8	

* *Chi-square Test*

Label reading information of the individuals participating in the study was evaluated and it is stated in Table 4.7. 48.3% (42.4% of men, 53.0% of women) of the participants did food shopping themselves, 23.3% (24.7% of men, 22.2% of women) of them occasionally did it themselves. 28.4% (32.9% of men, 24.7% of women) of individuals did not make their own food shopping.

When asked about food label reading status, 83.1% (74.1% of men, 90.4% of women) of the individuals stated that they read the labels and 16.9% (25.9% of men, 9.6% of women) of them stated that they did not read/pay attention to the food labels. A statistically significant difference was determined between the reading of food labels of men and women ($x^2 = 16,770$, $p < 0.001$) (Table 4.7). Female participants read food labels significantly more than male participants.

The parameters that the participants pay attention to in food shopping were questioned and are shown in Table 4.7. 55.9% (53.2% of men, 58.1% of women) of the individuals stated that they paid attention to prices and promotions, 61.0% (51.9% of men, 68.2% of women) of them stated that paid attention to brand awareness, 39.0% (32.9% of men, 43.9% of women) of them stated that paid attention to the nutritional values and ingredients section, 67.4% (57.0% of men, %75,8 of women) of them stated that paid attention to the expiration date.

There was no statistically significant difference between paying attention to price-promotions by gender ($x^2 = 0.862$, $p > 0.05$) (Table 4.7).

A statistically significant difference was determined between men and women paying attention to brand awareness ($x^2 = 9,790$, $p < 0.05$) (Table 4.7). Women paid more attention to brand awareness than men.

A statistically significant difference was determined between male and female participants paying attention to the content of foods ($x^2 = 4,490$, $p < 0.05$) (Table 4.7). Women paid more attention to the nutritional value and content of foods than men.

A statistically significant difference was determined between female and male participants paying attention to the expiration date of foods ($x^2 = 14.132$, $p < 0.001$) (Table 4.7). Women paid more attention to the expiration date of food than men.

Table 4.7. Distribution of Participants According to Label Reading Information

	Male *(n=158)*		**Female** *(n=198)*		**Total** *(n=356)*		**p***
Food shopping	**n**	**%**	**n**	**%**	**n**	**%**	
Himself/Herself	67	42,4	105	53,0	172	48,3	
Occasionally	39	24,7	44	22,2	83	23,3	
He doesn't do it himself/herself	52	32,9	49	24,7	101	28,4	
Food Label Reading							
Yes	117	74,1	179	90,4	296	83,1	
No / I don't pay attention	41	25,9	19	9,6	60	16,9	**0,00****
Attention to Food Shopping * **							
Price-promotion	84	53,2	115	58,1	199	55,9	**0,353**
Brand awareness	82	51,9	135	68,2	217	61,0	**0,002****
Nutritional value and ingredients	52	32,9	87	43,9	139	39,0	**0,034****
Expiration date	90	57,0	150	75,8	240	67,4	**0,00****

** Chi-square Test, ** p <0.05, *** Multiple options are marked.*

The perception of adequate and balanced nutrition, and food group consumption frequencies of individuals who participated in the study were evaluated and are given in Table 4.8. 20.5% (20.3% of men, 20.7% of women) of the participants stated that they fed on adequate and balanced, 29.5% (34.2% of men, 25.8% of women) of them stated that they fed on enough and balanced occasionally. 50.0 % of individuals (45.6% of men and 53.5% of women) stated that they did not have adequate and balanced nutrition. Considering the consumption of milk / dairy products, 90.1% (89.8% of men, 90.4% of women) of the participants stated that they consumed at least once a week and 9.8%, 10.1% of men, 9.5% of women) of them stated that they consumed less than once a week. There was no statistical difference between gender and consumption of milk and dairy products. ($x^2 = 0.867$, $p > 0.05$) (Table 4.8).

Considering the consumption of meat, eggs and legumes, 68.8% (74.6% of men, 64.6% of women) of the participants stated that they consumed at least once a week and 31.1% (25.3% of men, 35.8 of women) of them stated that they consumed less than once a week. There was a statistically difference between gender and consumption of meat, eggs and legumes. ($x^2 = 0.033$, $p < 0.05$) (Table 4.8). Males' meat, eggs and legumes consumption were significantly higher than females.

When looking at the consumption of vegetables and fruits, 89.6% (87.9% of men, 90.9% of women) of the participants stated that they consumed at least once a week and 10.3% (12.0% of men, 9.0% of women) of them stated that they consumed less than once a week. There was no statistically difference between gender and vegetable/fruit consumption. ($x^2 = 0.363$, $p > 0.05$) (Table 4.8).

Considering the consumption of bread and cereals, 92.1% (94.9% of men, 89.8% of women) of the participants stated that they consumed at least once a week and 7.8% (5.0% of men, 10.1% of women) of them stated that they consumed less than once a week. There was no statistically difference between gender and bread/grain consumption. ($x^2 = 0.079$, $p > 0.05$) (Table 4.8). ($x^2 = 0.363$, $p > 0.05$) (Table 4.8).

Table 4.8. Adequate / Balanced Nutrition Perception of the Participants and Distribution of Food Groups According to Consumption Frequencies

	Male *(n=158)*		**Female** *(n=198)*		**Total** *(n=356)*		**P***
Adequate / Balanced Nutritional Perception	**n**	**%**	**n**	**%**	**n**	**%**	
Yes	32	20,3	41	20,7	73	20,5	
Occasionally	54	34,2	51	25,8	105	29,5	
No	72	45,6	106	53,5	178	50,0	
Milk and dairy products							
<1 per week	16	10,1	19	9,5	35	9,8	
≥1 per week	142	89,8	179	90,4	321	90,1	**0,867**
Meat, Eggs, Legumes							
<1 per week	40	25,3	71	35,8	111	31,1	
≥1 per week	118	74,6	127	64,6	245	68,8	**0,033****
Vegetables and Fruits							
<1 per week	19	12,0	18	9,0	37	10,3	
≥1 per week	139	87,9	180	90,9	319	89,6	**0,367**
Bread, Grain							
<1 per week	8	5,0	20	10,1	28	7,8	
≥1 per week	150	94,9	178	89,8	328	92,1	**0,079**

** Chi-square Test, ** p <0.05*

The physical perceptions and physical activity states of the research group according to BMIs were examined and are shown in Table 4.9.

Considering the BMI values determined by WHO, 59.0% of individuals in the weak category perceived themselves as very weak/weak and 41.0% of them perceived themselves as normally, 17.3% of the individuals in the normal category perceived themselves as very weak / weak, 78.0% of them perceived themselves as normal and 4.7% of them perceived themselves as overweight/obese. According to BMI values, 72.9% of overweight individuals perceived themselves as overweight/obese, 25.7% of them

perceived themselves as normal, 1.4% of them perceived themselves as very weak/weak, and 100% of the obese category individuals perceived themselves as obese. In our study, A statistically significant difference was determined between BMI and physical perception ($x^2 = 278{,}694$, $p < 0.001$) (Table 4.9). People with overweight and obese BMI perceived themselves as overweight/obese in a statistically significant way.

Physical activity states of individuals were analyzed according to their BMI values and are shown in table 4.9. According to BMI distributions, 46.2% of individuals in the weak category performed physical activity 1-2 times a week and 20.5% of them performed 3 times a week or more, 39.7% of individuals in the normal category performed physical activity 3 times a week or more, 28% of them performed 1-2 times a week, 37.1% of individuals in the overweight category performed physical activity 1-2 times a week, 22.9% of them performed 3 times a week or more. While 36.4% of individuals in the obese category performed physical activity 1-2 times a week, 30.3% of them did not perform any physical activity at all.

Table 4.9. Comparison of Participants' BMI and Physical Perceptions and Physical Activity Status

	BMI								
	Weak *(n=39)*		**Normal** *(n=214)*		**Overweight** *(n=70)*		**Obese** *(n=33)*		**P***
Physical Perception									
Very weak / weak	23	59,0	37	17,3	1	1,4	0	0,0	
Normal	16	41,0	167	78,0	18	25,7	0	0,0	
Overweight / obese	0	0,0	10	4,7	51	72,9	33	100,0	**0,00****
Physical Activity Status									
≥3 per week	8	20,5	85	39,7	16	22,9	5	15,2	
1-2 per week	18	46,2	60	28,0	26	37,1	12	36,4	
2-3 per month	6	15,4	26	12,1	14	20,0	6	18,2	
None	7	17,9	43	20,1	14	20,0	10	30,3	**0,028****

** Chi-square Test, ** p <0.05*

According to the educational level of the research group, cigarette consumption, BMI, physical perceptions and physical activity status were examined and are shown in Table 4.10. Considering the cigarette consumption of individuals according to their educational level, 37.8% of the individuals in the literate/primary school category stated that they smoked, 56.8% of them stated that they did not smoke, 40.9% of the individuals in the middle / high school category stated that they smoked, 56.8% of them stated that they did not smoke cigarettes, 35.1% of the individuals receiving university and above education stated that they smoked and 59.7% of them stated that they did not smoke. No statistically significant difference was determined between education level and smoking ($x^2 = 2{,}010$, $p > 0.05$) (Table 4.10).

Considering the BMI of individuals according to their educational level, 43.2% of literate / primary school level individuals were normal, 21.6% of them were overweight, 24.3% of them were obese, 51.1% of middle-school / high school level individuals were normal, 26.1% of them were overweight, 12.5% of them were obese, 66.2% of individuals at university level and above were normal, 16.9% of them were overweight, 5.6% of them

were obese. A statistically significant difference was determined between the education levels and BMIs of the participants ($x^2 = 20,631$, $p < 0.05$) (Table 4.10). As the education levels of individuals increased, the proportion of those in the normal category of BMI increased, while the proportion of those in the obese category decreased.

Considering the physical perceptions of individuals according to their educational level, 43.2% of individuals at literate/primary school level perceived themselves as overweight / obese, 48.9% of individuals at secondary/high school level perceived themselves as normal, 33.0% of them perceived themselves as overweight / obese, 61.5% of individuals at university and above level perceived themselves as normal and 21.2% of them perceived themselves as obese. A statistically significant difference was determined between the educational levels and physical perceptions of the participants ($x^2 = 11,177$, $p < 0.05$) (Table 4.10). Accordingly, individuals at the level of university and above perceived themselves physically as normal more often. As education level increased, individuals' perception of themselves as overweight/obese decreased significantly.

When we look at the frequency of physical activity according to the educational level of individuals, 8.3% of individuals at literate / primary school level stated that they performed physical activity once a week or more, 14.3% of them stated that they performed physical activity less than once a week, 21.3% of individuals at middle school / high school level stated that they performed physical activity once a week, 31.0% of them stated that they performed physical activity less than once a week, 70.4% of individuals with university level and above educational level stated that they performed physical activity once a week and 54.8% of them stated that they performed physical activity less than once a week. A statistically significant difference was determined between the educational level and the frequency of physical activity of individuals ($x^2 = 8,990$, $p < 0.05$) (Table 4.10). As the level of education increased, there was a significant increase in the rate of individuals who performed physical activity at least once a week.

Table 4.10. Comparison of Participants' Educational Levels and Their Smoking, BMI, Physical Perceptions and Physical Activity Status

	Educational Level						P*
	Literate/ Elementary *(n=37)*		Secondary/High School *(n=88)*		University and Above *(n=231)*		
Smoking	**n**	**%**	**n**	**%**	**n**	**%**	
Yes	14	37,8	36	40,9	81	35,1	
No	21	56,8	50	56,8	138	59,7	**0,734**
Quit	2	5,4	2	2,3	12	5,2	
BMI (kg / m^2)							
Weak	4	10,8	9	10,2	26	11,3	
Normal	16	43,2	45	51,1	153	66,2	
Overweight	8	21,6	23	26,1	39	16,9	**0,002****
Obese	9	24,3	11	12,5	13	5,6	
Physical Perception							
Very weak / weak	5	13,5	16	18,2	40	17,3	
Normal	16	43,2	43	48,9	142	61,5	**0,025****
Overweight / obese	16	43,2	29	33,0	49	21,2	
Physical Activity Status							
≥1 per week	19	8,3	49	21,3	162	70,4	
<1 per week	18	14,3	39	31,0	69	54,8	**0,011****

** Chi-square Test, ** p <0.05*

The BMI averages were analyzed according to the educational levels of the research group and are shown in Table 4.11. It was determined that the average of BMI's were at literate/primary school individuals 25.19 ± 5,04 kg / m^2, at secondary school / high school level individuals 23.86 ± 4,87 kg / m^2 and at university or higher-level individuals 22.44 ± 3,99 kg / m^2. There was a statistically significant difference between the education

levels of participants and BMI averages. (*p<0.005*) (Table 4.11). In our study, as the educational level of the individuals increased, their BMI decreased.

Table 4.11. Evaluation of BMI Averages of Participants by Level of Education

	Educational Level										
	Literate/Elementary *(n=37)*			**Secondary/ High School** *(n=88)*			**University or Above** *(n=231)*			**P****	**f**
	Min	**Max**	**X̄±SD**	**Min**	**Max**	**X̄±SD**	**Min**	**Max**	**X̄±SD**		
BMI (kg/m^2)	17,8	37,7	25,19±5,04	16,5	37,4	23,86±4,87	8,4	36,7	22,4±3,99	0,000*	8,36

**p<0,05, **One-way Anova*

The consumption of breakfast, lunch and dinner and the reasons for skipping meals were examined according to the educational level of the research group and are shown in Table 4.12. When we look at breakfast consumption of individuals according to their education level it was determined that, 78.4% of individuals at literate / primary school level had breakfast 4-7 times a week, 8.1% of them had breakfast 1-3 times a week, 13.4% of them did not have any breakfast at all, 75.0% of individuals at middle school / high school level had breakfast 4-7 times a week, 21.6% of them had breakfast 1-3 times a week, 3.4% of them did not have any breakfast at all, 73.6% of individuals at the level of university and above had breakfast 4-7 times a week, 23.4% of them had breakfast 1-3 times a week, 3.0% of them did not have any breakfast at all. A statistically significant difference was determined between the educational level of the participants and breakfast consumption ($x^2 = 12.087$, *p <0.05*) (Table 4.12). As the education level increased, there was a significant decrease in the rate of those who did not do any breakfast at all. The rate of those who had breakfast at least once a week was increased significantly as their education level increased.

When we look at lunch consumption according to the education level of individuals, it was determined that, 59.5% of individuals at literate / primary school level consumed lunch 4-7 times a week, 27.0% of them consumed lunch 1-3 times a week, 13.5% of them did not consume lunch at all, 69.3% of individuals at middle school / high school level consumed lunch 4-7 times a week, 26.1% of them consumed lunch 1-3 times a week, 4.5% of them did not consume lunch at all, 67.8% of individuals at university level and above consumed lunch 4-7 times a week, 24.3% of them consumed lunch 1-3 times a week, and 7.8% of them did not consume lunch at all. No statistically significant difference was determined between the education level of the participants and the lunch meal consumption ($x^2 = 3.341$, $p > 0.05$) (Table 4.12).

When we look at the evening meal consumption according to the education level of individuals, it was determined that; 97.3% of individuals at literate / primary school level consumed dinner 4-7 times a week, 2.7% of them consumed dinner 1-3 times a week, 94.3% of individuals at middle school / high school level consumed dinner 4-7 times a week, 5.7% of them consumed dinner 1-3 times a week, 94.8% of individuals at the university level and above consumed dinner 4-7 times a week, 5.7%of them consumed dinner 1-3 times a week. All individuals consumed dinner at least once a week. No statistically significant difference was determined between the education level of the participants and the evening meal consumption ($x^2 = 0.508$, $p > 0.05$) (Table 4.12).

The reasons for skipping meals were examined according to the education levels of individuals and stated that 32.3% of individuals at literate / primary school level skipped main meals due to habit, 29.0% of them skipped main meals due to lack of appetite, 22.6% of them skipped main meals for weight loss, 16.1% of them skipped main meals due to lack of time, 43.2% of individuals at secondary / high school level skipped main meals due to lack of time, 33.8% of them skipped main meals due to habit, 13.5% of them skipped main meals for lose weight, 9.5% of them skipped main meals due to lack of appetite, 40.7 of individuals at the university level and above skipped main meals due to lack of time, 34.1% of them skipped main meals due to habit, 15.6% of them skipped main meals due to lack of appetite, 9.6% of them skipped meals for lose weight. A statistically significant difference was determined between the educational levels of the

participants and the reasons for skipping meals (x^2=13.916, $p < 0.05$) (Table 4.12). Individuals at secondary / high school level or above were skipping meals due to lack of time significantly more than individuals at literacy / primary school level.

Table 4.12. Comparison of Consumption of Breakfast, Lunch and Dinner and Reasons of Skipping Meals According to Participants' Education Levels

	Educational Level						**P***
	Literate/ Elementary *(n=37)*		**Secondary/ High School** *(n=88)*		**University or Above** *(n=231)*		
Breakfast	**n**	**%**	**n**	**%**	**n**	**%**	
None	5	13,5	3	3,4	7	3,0	
1-3 per week	3	8,1	19	21,6	54	23,4	**0,017****
4-7 per week	29	78,4	66	75,0	170	73,6	
Lunch							
None	5	13,5	4	4,5	18	7,8	
1-3 per week	10	27,0	23	26,1	56	24,3	**0,502**
4-7 per week	22	59,5	61	69,3	156	67,8	
Dinner							
None	0	0,0	0	0,0	0	0,0	
1-3 per week	1	2,7	5	5,7	12	5,2	**0,776**
4-7 per week	36	97,3	83	94,3	219	94,8	
Reasons to Skip Meal *							
Habit	10	32,3	25	33,8	57	34,1	
Lack of time	5	16,1	32	43,2	68	40,7	
To lose weight	7	22,6	10	13,5	16	9,6	**0,031****
Lack of appetite	9	29,0	7	9,5	26	15,6	

** Chi-square Test, ** p <0.05*

Food label reading status according to the educational level of the research group was examined and are shown in Table 4.13. 73.0% of individuals at literate / primary school level, 73.9% of individuals at secondary / high school level, 88.3% of individuals at university level or above wee reading food labels. A statistically significant difference was determined between the educational level of the participants and the food label

reading status. (x^2 =12.542, $p < 0.05$) (Table 4.13). As the education level increased, the number of individuals who did not pay attention to the food label decreased significantly.

According to the educational level of the research group, the attention to price / promotion in food shopping was examined and is shown in Table 4.13. 45.9% of literate / primary school level individuals, 50.0% of middle school / high school level individuals, 59.7% of university level and above individuals paid attention to price / promotion in food shopping. No statistically significant difference was determined between the participants' attention to price / promotion in food shopping according to their educational level. (x^2 = 4,112, $p > 0.05$) (Table 4.13).

According to the educational level of the research group, attention to brand awareness in food shopping was examined and is shown in Table 4.13. 51.4% of individuals at literate / primary school level, 51.1% of individuals at secondary / high school level, 66.2% of individuals at university level or above paid attention to brand awareness in food shopping. A statistically significant difference was determined between participants' attention to brand awareness according to their educational level. (x^2 = 7,703, $p < 0.05$) (Table 4.13). As the education level increased, the rate of paying attention to brand awareness increased significantly.

According to the educational level of the research group, their attention to nutritional value and contents in food shopping were examined and are shown in Table 4.13. 37.8% of literate / primary school level individuals, 25.0% of middle school / high school level individuals, 44.6% of university level and above individuals paid attention to nutritional value and contents in food shopping. A statistically significant difference was determined between educational level of participants and the attention to the nutritional value and contents. (x^2 = 10,299, $p < 0.05$) (Table 4.13). As the education level increased, the rate of those who did not pay attention to the nutritional value and contents decreased significantly.

According to the educational level of the research group, attention to the expiration date of food shopping was examined and is shown in Table 4.13. 64.9% of

individuals at literate / primary school level, 53.4% of individuals at secondary / high school level, 73.2% of the individuals at university level or above paid attention to the expiration date in food shopping. A statistically significant difference was determined between the participants' attention to the expiration date according to their educational level. ($x^2 = 11{,}439$, $p < 0.05$) (Table 4.13). Individuals at the level of university and above were paying more attention to the expiration date than individuals at the other level of education.

Table 4.13. Reading the Food Label According to the Participants' Education Levels and Comparing the Parameters Considered When Shopping for Food

	Educational Level						P*
	Literate/ Elementary *(n=37)*		Secondary/ High School *(n=88)*		University or Higher *(n=231)*		
Reading the Food Label	**n**	**%**	**n**	**%**	**n**	**%**	**0,002****
Yes	27	73,0	65	73,9	204	88,3	
No	10	27,0	23	26,1	27	11,7	
Price-Promotion							
Yes	17	45,9	44	50,0	138	59,7	
No	20	54,1	44	50,0	93	40,3	**0,128**
Brand awareness							
Yes	19	51,4	45	51,1	153	66,2	
No	18	48,6	43	48,9	78	33,8	**0,021****
Nutritional Value and Contents							
Yes	14	37,8	22	25,0	103	44,6	
No	23	62,2	66	75,0	128	55,4	**0,006****
Expiration date							
Yes	24	64,9	47	53,4	169	73,2	
No	13	35,1	41	46,6	62	26,8	**0,003****

** Chi-square Test, ** p <0.05*

Fast-food consumption according to the educational level of the research group was examined and is shown in table 4.13. 40.5% of individuals at literate / primary school level stated that they consumed fast food 3 or more times a week, 18.9% of them stated that they consumed fast food 1-2 times a week, 24.3% of them stated that they consumed fast food 1-2 times a month, 35.2% of individuals at secondary / high school level stated that they consumed fast food 3 or more times a week, 34.1% of them stated that they consumed fast food 1-2 times a week, 25.0% of them stated that they consumed fast food

1-2 times a month, 43.3% of individuals at the university level and above stated that they consumed fast food 3 or more times a week, % 31.6 of them stated that they consumed fast food 1-2 times a week, 18.6% of them stated that they consumed fast food 1-2 times a month. No statistically significant difference was determined between fast food consumption according to the education levels of the participants. (x^2 = 9,105, *p> 0.05*) (Table 4.14).

According to the educational level of the research group, fried food consumption was examined and is shown in Table 4.13. 56.8% of individuals at literate / primary school level stated that they consumed fried food 3 or more times a week, 32.4% of them stated that they consumed fried food 1-2 times a week, 5.4% of them stated that they consumed fried food 1-2 times a month, 54.5% of individuals at secondary / high school level stated that they consumed fried food 3 or more times a week, 34.1% of them stated that they consumed fried food 1-2 times a week, 8.0% of them stated that they consumed fried food 1-2 times a month, 52.8% of individuals at the university level and above stated that they consumed fried food 3 or more times a week,% 32.0 of them stated that they consumed fried food 1-2 times a week, 13.0% of them stated that they consumed fried food 1-2 times a month. No statistically significant difference was determined between fried food consumption according to the educational level of the participants. (x^2 = 4.169, *p> 0.05*) (Table 4.14).

The consumption of dietary products with reduced calories according to the educational level of the research group was examined and is shown in Table 4.14. 18.9% of individuals at literate/primary school level, 12.5% of individuals at secondary / high school level, 23.4% of individuals at university level or above consumed diet products with reducedcalorie. No statistically significant difference was determined between the consumption of dietary products with reduced calories according to the educational levels of the participants.

Adequate and balanced perceptions of nutrition were examined according to the educational level of the research group and are shown in Table 4.14. 16.2% of literate /

primary school level individuals, 14.8% of middle school / high school level individuals, and 23.4% of individuals with university level and above stated that they had a adequate and balanced diet. No statistically significant difference was determined between the perceptions of adequate and balanced nutrition according to the education levels of the participants. ($x^2 = 5.642$, $p > 0.05$) (Table 4.14).

Table 4.14. Comparison of Participants' Educational Levels with Fast Food, Fried Food, Calorie Reduced Diet Products Consumption and Adequate-Balanced Nutrition Perception

	Educational Level						**P***
	Literate/ Elementary *(n=37)*		**Secondary/High School** *(n=88)*		**University or Higher** *(n=231)*		
Fast-Food Consumption	**n**	**%**	**n**	**%**	**n**	**%**	
≥3 per week	15	40,5	31	35,2	100	43,3	
1-2 per week	7	18,9	30	34,1	73	31,6	**0,168**
1-2 per month	9	24,3	22	25,0	43	18,6	
None	6	16,2	5	5,7	15	6,5	
Fried Food Consumption							
≥3 per week	21	56,8	48	54,5	122	52,8	
1-2 per week	12	32,4	30	34,1	74	32,0	
1-2 per month	2	5,4	7	8,0	30	13,0	**0,654**
None	2	5,4	3	3,4	5	2,2	
Calorie Reduced Diet Products							
Yes	7	18,9	11	12,5	51	22,1	
Sometimes	10	27,0	36	40,9	80	34,6	**0,248**
No	20	54,1	41	46,6	100	43,3	
Adequate and Balanced Nutrition Perception							
There is	6	16,2	13	14,8	54	23,4	
Sometimes	10	27,0	33	37,5	62	26,8	**0,227**
No	21	56,8	42	47,7	115	49,8	

* *Chi-square Test*

The consumption of food groups according to the educational level of the research group was examined and is shown in Table 4.15. Considering the consumption of milk and dairy products, 81.0% of individuals at the level of literate / primary school, 90.9%

of individuals at secondary / high school level, 91.3% of individuals at university level and above consumed milk and dairy products at least once a week. No statistically significant difference was determined between the consumption of milk and dairy products according to the education levels of the participants. ($x^2 = 0.145$, $p > 0.05$) (Table 4.15).

Considering the consumption of meat, eggs and legumes, 54.0% of individuals at the level of literate / primary school, 72.7% of individuals at secondary / high school level, 69.6% of individuals at university level or above consumed meat, eggs and legumes at least once a week. No statistically significant difference was determined between meat, egg and legume consumption according to the education levels of the participants. ($x^2 = 0.107$, $p > 0.05$) (Table 4.15).

Considering the consumption of vegetables/fruits, 91.8% of individuals at literate/primary school level, 94.3% of individuals at secondary/high school level, 87.4% of individuals at university level or above consumed vegetables/fruit at least once a week. No statistically significant difference was determined between vegetable/fruit consumption according to the education level of the participants. ($x^2 = 0.177$, $p > 0.05$) (Table 4.15). Considering the consumption of bread/cereal group, 86.4% of individuals at literate/primary school level, 92.0% of individuals at secondary/high school level, 93.0% of individuals at university and above level consumed bread/cereal at least once a week. No statistically significant difference was determined between bread/cereal consumption according to the education level of the participants. ($x^2 = 0.385$, $p > 0.05$) (Table 4.15).

Table 4.15. Comparison of Participants' Educational Levels and Consumption of Food Groups

	Educational Level						P*
	Literate/ Elementary *(n=37)*		Secondary/High School *(n=88)*		University or Higher *(n=231)*		
Milk and Dairy products	**n**	**%**	**n**	**%**	**n**	**%**	
<1 per week	7	18,9	8	9,0	20	8,6	**0,145**
≥1 per week	30	81,0	80	90,9	211	91,3	
Meat, Eggs, Legumes							
<1 per week	17	45,9	24	27,2	70	30,3	
≥1 per week	20	54,0	64	72,7	161	69,6	**0,107**
Vegetables, Fruits							
<1 per week	3	8,1	5	5,6	29	12,5	
≥1 per week	34	91,8	83	94,3	202	87,4	**0,177**
Bread, cereal							
<1 per week	5	13,5	7	7,9	16	6,9	
≥1 per week	32	86,4	81	92,0	215	93,0	**0,385**

** Chi-square Test*

5. DISCUSSION AND CONCLUSION

5.1. Discussion

The relationship between the educational level of individuals and healthy nutritional habits was tried to be revealed by many studies[46],[47]. In our study, we investigated the effect of education levels of individuals applying to a health institution on their nutritional habits.

5.1.1 Demographic Features of Individuals

A total of 356 individuals, aged between 18 and 35, 55.6% of whom were women and 44.4% were men, were included in the study. In our study, gender distribution was balanced. In another study investigating the effect of individuals' socioeconomic status on nutritional habits, 43.5% of individuals were men and 56.5% were women[45].

In our study, the average age of individuals is 28.09 ± 5.12 (28.32 ± 5.13 for men and 27.81 ± 5.32 for women) for years (Table 4.1). In a study in which 217 students' nutrition habits were investigated at Uludag University, the average age was determined to be 20.9 ± 1.6 (20.7 ± 1.4 for women and 21.0 ± 1.7 for men) [48]. Since studies in which nutritional habits are investigated in our country are often done with university students, the average age of our study is higher than these studies[49],[50],[51]. The reason for this is that the difference in the education levels of the participants in our study is one of the main variables of our study. So people at the university level and above are also included in our study.

In our study, 10.4% of the participants have literate-primary school (male 10.8%, female 10.1%), 24.7% of them have secondary-high school (29.1% of men, 21.2% of women), 55.3% of them have university (53.8% of men, 56.6% of women) and 9.6% of them have master-doctorate (6.3% of men, 12.1% of women) graduates (Table 4.1).

In the study, no statistically significant difference was determined between education level by gender (p> 0.05) (Table 4.1). Therefore, the distribution of the educational levels of the participants by gender is balanced. According to 2018 data of Turkey Statistical Institute (TSI), 39.9% of individuals in Turkey have literate / primary school education level, 37.9% of them have middle school / high school education level, 15.7% of them have university education level and 1.9% of them have master/doctorate education level[52]. When the individuals' educational level who participate in our study compared with educational levels of Turkey TSI data, the education level of the participants is above the Turkey average. The reason for this difference is thought to be due to the fact that the region where the study is conducted is located in the city center, close to the university and at a relatively good socioeconomic level.

Table 4.2 shows the smoking status of individuals. 36.8% of individuals (53.8% of men and 23.2% of women) smoke. In our study, there was a statistically significant difference in cigarette smoking by gender ($p < 0.05$) (Table 4.2). Male participants smoke more than female participants. In a study investigating the risks of diabetes in Turkish society (TURDEP-II), it was determined that 26% of individuals (31.4% of men and 9.8% of women) smoke. In our study, smoking rate was determined to be higher than the TURDEP-II study conducted on 26,499 adults. No statistically significant difference was determined between education level and smoking ($p > 0.05$) (Table 4.10). In a study of 17,495 participants whom investigated the level of education, income status and the effect of the profession on smoking habits, it was determined that cigarette consumption decreased significantly when the education level was at high school and above. While it is expected that individuals with higher education level will know and apply the information that smoking is harmful to health, it is thought-provoking that there is no significant relationship with education level.

The average BMI of all individuals who participated in our study was calculated as 23.07 ± 4,42 kg / m2 (men; 24.78 ± 4,4 kg / m^2, women; 21.71 ± 3,9 kg / m2). Distribution of participants according to BMI was determined that 60.1% (53.8% of men, 65.2% of women) normal and 29.0% (41.8% of men; 18.7% of women) overweight / obese (Table 4.1). In the TURDEP-II study, which was a comprehensive examination, 26% of

the participants were found normal and 72.9% of them were overweight / obese[53]. According to another comprehensive study that Turkey Nutrition and Health Survey (TNHS)-2010, it was determined that 64.9% of all adults were overweight and obese[55]. The reason for the significantly lower rates of overweight and obese individuals in our study according to these two comprehensive studies' statistics that conducted in general of Turkey can be explained by the educational level of individuals participating in our study to be well above than the average of Turkey according to TUIK 2018 data.

In our study, there is a statistically significant difference between BMI groups by gender. The proportion of overweight and obese individuals was higher in males. In a study where the meal order of university students was investigated, the avarage of BMI was determined to be 23.18 ± 2,54 kg / m^2 in men and 20.66 ± 2,30 kg / m^2 in women (general average 21.32 ± 2.61 kg / m^2). Similar to our study, the rate of overweight men (23.1%) was higher than women (13.5%). 73.1% of women and 71.1% of men were within normal limits according to BMI classification and were in line with our study results[56]. Although there was no statistically significant difference in education levels between the participating women and men groups in our study, we think that the reason for the lower BMI average of the women and they were less in the overweight category is due to the fact that women pay more attention to their physical appearance than men.

According to the education levels of the participants, the averages of BMI were found that 25.19 ± 5,04 kg / m^2 of individuals at the level of literate / primary school, 23.86 ± 4,87 kg / m^2 of individuals at the level of middle school / high school, 22.44 ± 3.99 kg / m2 of individuals at the level of university and above. 45.9% of literate / primary school individuals are overweight and obese, 38.6% of individuals at secondary / high school level are overweight and obese, 22.5% of individuals at university or above level are overweight and obese. A statistically significant difference was determined between the education levels and BMI of the participants in our study ($p < 0.05$) (Table 4.10). As the education levels of the individuals participating in our study decreased, their BMI and the percentage of being in the obese category increased. In a study where the effect of education level on fast food consumption was investigated and 900 people participated, it was determined that the effect of education level on BMI in the same direction was

significant[46]. In a study investigating the factors affecting obesity in individuals who applied to the nutrition and diet clinic, it was determined that as the education level increased, the obesity rate decreased[57]. In another study investigating the relationship between socioeconomic status and obesity, A statistically significant difference was determined between education level and BMI classification similar to our study. BMI values of those with illiteracy and primary / secondary school / high school levels were found to be statistically significantly higher than those with university/master educational levels. In the same study and another study in which nutritional habits were investigated, it was stated that there was a relationship between socioeconomic status and obesity, and individuals in the lower socioeconomic class had higher BMI values than other participants[45],[48]. It is thought that the same conclusion may be valid for our study considering that in our study, socioeconomic levels of university and higher education groups were better than other groups.

Body perception is the way individuals perceive their own body[58]. Considering the BMI of the individuals participating in our study, 17.3% of the individuals in the normal category considered themselves as very weak / weak, while 25.7% of the overweight individuals considered themselves in the normal category. In a study investigating the nutritional habits and nutritional attitudes and behaviors of adolescents and adults, 50.4% of normal weight men considered themselves as weak or very weak, while 60% of slightly overweight men considered themselves at normal weight. In the same study, 59.8% of normal weight women considered themselves very weak / weak. 35.5% of normal weight women and 46.9% of slightly overweight women perceived themselves in their real BMI range. These frequencies in males were 42.2% and 37.1%, respectively[58]. This may be due to the fact that BMI categories are not known correctly among the public.

Regular physical activities of the individuals participating in our study are shown in Table 4.2. While 20.8% of individuals (20.9% of men, 20.7% of women) stated that they did no physical activity at all, 31.7% of them (31.0% of men and 32.8% of women) stated that they did regular physical activity 3 days a week or more. No statistically significant difference was determined between the frequency of physical activity of women and men ($p > 0.05$). In a study investigating the relationship between nutritional

habits and obesity, physical activity and quality of life, it was determined that 34.9% of individuals performed low-level physical activity and 47.8% of them performed moderate-level physical activity. However a large proportion of those who did a high level of physical activity (17.3%) constituted men (22.9% of men and 14.4% of women). In this study, men were found to did more physical activity than women[59].

In our study, a statistically significant difference was determined between the level of education and the frequency of physical activity ($p < 0.05$) (Table 4.10). While 8.3% of literate / primary school level individuals and 21.3% of middle-school / high school level individuals stated that they did physical activity once a week or more, 70.4% of individuals at the university level and above stated that they were doing the same amount of physical activity. As the level of education increased, there was a significant increase in the rate of individuals doing physical activity. This situation is thought to be related to the increase in health and sports awareness along with the education level, as well as increased opportunities for sports-related to socio-economic welfare.

In our study, A statistically significant difference was determined when the physical perception of individuals according to their educational level was examined ($p < 0.05$) (Table 4.10). Accordingly, individuals at the level of university and above were perceived as physically normal more often. As the level of education increased, individuals' perception of themselves as overweight / obese decreased significantly. The relationship between education level and BMI and physical perception confirms each other. This may be due to the more accurate knowledge of the concept of BMI as the level of education increases.

5.1.2. Nutritional Habits of Individuals

In Table 4.8, individuals' perceptions of adequate and balanced nutrition are evaluated. 20.5% of the participants (20.3% of men, 20.7% of women) stated that they had sufficient and balanced nutrition. In a study conducted with 557 participants investigating the factors affecting nutritional habits, 25.1% of males and 34.9% of females stated that they had adequate and balanced nutrition. In our study, individuals' perceptions of adequate and balanced nutrition were evaluated according to their education levels and no statistically significant difference was determined. (Table 4.14).

Considering the consumption of dietary products with reduced calories, it was seen that 19.4% of the participants (15.8% of men, 22.2% of women) consumed these foods. The relationship of consumption of dietary products with reduced calories to gender was investigated and no statistically significant difference was determined (Table 4.6). No statistically significant difference was determined when the consumption of diet products with reduced calorie was compared according to the education levels of the participants. (Table 4.14).

In Table 4.4, the frequency of consuming main meals and reasons for skipping meals are given. 4.2% of the participants (5.1% of men, 3.5% of women) stated that they did not have any breakfast and 7.9% of them (3.2% of men, 11.1% of women) stated that they did not eat any lunch. The least skipped main meal is dinner and the most skipped main meal is lunch 29.5% of the participants (27.8% of men, 30.8% of women) stated that they skipped meals due to lack of time to prepare or eating, 25.8% of them (22.2% of men, 28% of women) stated that they skipped meals due to habit, 11.8% of them (10.8% of men, 12.6% of women) stated that they skipped meals due to lack of appetite and 9.3% of them (10.8% of men, 8% of women) stated that they skipped meals for weight loss. In a study conducted with 424 individuals evaluating nutritional habits and anthropometric measurements, 87.1% of women and 85.1% of men stated that they skipped meals. It is similar to our study as with the most skipped meal in both genders was lunch and the least skipped meal was dinner. In the same study, 30.0% of the participants (34.0% of men, 25.8% of women) stated that they skipped meals due to lack of time, 24.1% of them (20.9% of men, 27.3% of women) stated that they skipped meals

due to lack of appetite, 16.0% of them (14.0% of men, 18.2% of women) stated that they skipped meals due to habit and 4.5% of them (2.8% of men, 6.2% of women) stated that they skipped meals for weight loss[14]. Individuals stated that they skipped meals most often due to lack of time in both studies.

A statistically significant difference was determined between the education levels of the participants and the reasons for skipping meals ($p < 0.05$) (Table 4.12). The reason for this is thought to be since their education level increased these people work less often in workforce-based occupations with routines such as shifts / lunch breaks and the work tempo may be more intense and irregular.

A statistically significant difference was determined between the education level of the participants and breakfast consumption ($p < 0.05$) (Table 4.12). As the level of education increased, the rate of those had breakfast at least once a week increased, and there was a significant decrease in the rate of those who never did. It is known that breakfast, which is one of the most important meals of the day, has important effects on vigorous starting and comprehension perception, by improving nutritional status, it increases development in learning and cognitive skills and as a result may contribute to the activation of education[61]. For these reasons, we think that individuals with higher education levels understood the importance of breakfast better and therefore they had breakfast more frequently. between the education level of individuals and the consumption of lunch and dinner. (Table 4.12).

In our study, no significant relationship was determined among the groups between the frequency of fast-food and fat-fried food consumption by educational level (Table 4.14). However, in a study investigating the nutritional habits of individuals, it was shown that as the level of education increased, the frequency of consumption of fried food and fast food decreased[47].

A statistically significant difference was determined between the level of education of the participants and reading the food label, nutritional value / ingredients,

paying attention to brand awareness and expiration date. ($p < 0.05$) (Table 4.13). 88.3% of individuals at university and above education level stated that they read the food label, 44.6% of them stated that they read nutritional value and contents information; 66.2% of them stated that they made purchases by paying attention to brand awareness and 73.2% of them stated that they paid attention to expiration date in food shopping. As the level of education increased, the percentage of individuals has increased that paying attention to the food label, nutritional value/ingredients, brand awareness and expiration date when shopping. No statistically significant difference was determined between the participants' attention to price/promotion in food shopping according to their educational level. (Table 4.13). According to our research, individuals with a high education level did food shopping more consciously. In our study, it may be thought that being a conscious consumer due to increasing education levels and choices that are avoidining poor quality foods (high-calorie food due to the addition of high fat and sugar) due to socioeconomic welfare caused low BMI value in this group. In a study investigating the factors affecting the level of consciousness of consumers in food safety, it was stated that individuals' reading label information and paying attention to the expiration date increased as the level of education increased[62].

In Table 4.15, the consumption of food groups according to the education levels of individuals is examined. No statistically significant difference was determined between milk and dairy products group, meat-egg and legume group, vegetable / fruit group and bread / grain group consumption by education level. The most consumed food group per week among all education levels was bread/cereal. It was found that the most frequently consumed food group was also the bread/cereal group in a study in which the nutrition habits of university students were investigated[63]. In another study where individuals' nutritional knowledge levels were investigated, they found that the frequency of consumption of meat and dairy products was positively associated with academic success[49].

5.2. Result

It is revealed with more and more studies that improper nutritional habits cause many health problems today. Improper nutritional habits, especially in childhood and youth, are more difficult to change in later ages, and as a result, they lead to the development of many chronic diseases such as obesity and diabetes. Therefore, it is obvious that the right nutritional habits to be acquired at an early age will form the basis of healthy life in later years. Increasing the education level of society has an important place in gaining healthy nutritional habits.

In our study, we tried to reveal the relationship between education and healthy nutrition. The educational level of the individuals who participated in our study was above the average of Turkey according to TUIK data. It is thought that the main reason for this to be that the location of the study was located in the city center and close to the university.

In our study, we concluded that individuals with higher education levels have lower BMI, in addition to education, we think that the situations, which were found to be statistically significant, such as doing more frequent physical activity, paying more attention to breakfast consumption, paying more attention to label, content, brand and expiration date information. At the same time, shopping is also effectice in this result.

Considering all the individuals who participated in our study about 30% of them overweight/obese (According to TUIK 2018 data, although relatively lower than the average in Turkey). We think that situations such as frequent skipping meals, fat-fried food and fast-food consumption habits, reduced-calorie food consumption, lack of sports exercise habits, and lack of importance to adequate / balanced nutrition may be effective on this result.

The social, cultural and economic development of society depends on the health of the individuals that make up it. The first answer to the question of what can be done to improve individuals' health-related behavior is to increase the level of education.

Increasing the level of education is effective in gaining the right nutritional habits of individuals with its significant factors such as creating a conscious consumer group to promoting healthy food delivery to the society by food producers and improving the socioeconomic status of the person / society to creating purchasing power to buy healthy foods. It is necessary to raise awareness of individuals and society about healthy nutrition by establishing national food, nutrition and health policies to prevent nutrition-related diseases and increase the quality of life of the society. Primary health care institutions, where our study was conducted, are important in terms of these educations and information. The easiest and most economical way to do this is to employ dieticians in primary health care institutions. It is clear that the spread of healthy eating habits to the whole society in the early period will prevent the development of chronic diseases such as diabetes, obesity, cardiovascular diseases and cancer and this will lead to saving a large budget which spends on the treatment of these diseases, so this budget can using much more efficiently for public welfare. The fact that, diseases such as diabetes and obesity, which have been revealed in recent years in epidemiological studies, have reached an epidemic level in our country shows that this issue should be handled urgently.

New studies that demonstrate the importance of education in gaining healthy nutritional habits and creating a healthy society should be developed by making use of previous studies.

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7. APPENDICES

7.1. Ethical Approval

Evrak Tarih ve Sayısı: 04/12/2017-E.18560

T.C.
SAKARYA ÜNİVERSİTESİ REKTÖRLÜĞÜ
Tıp Fakültesi Dekanlığı

Sayı : 71522473/050.01.04/ 245
Konu : Girişimsel Olmayan Etik Kurul Başvuru Dosyası Hk.

Sayın Dr. Yazgı Işıl KAYABAŞOĞLU
Sakarya Üniversitesi Aile Sağlığı Merkezi

İlgi : 24.11.2017 tarihli 227 sayılı başvurunuz.

Destekleyicisi olduğunuz **"Birinci Basamak Sağlık Kuruluşuna Başvuran 18-35 Yaş Arası Bireylerde Eğitim Düzeyinin Beslenme Alışkanlıklarına Etkisinin Araştırılması"** isimli çalışmanın ilgili belgeler araştırmanın gerekçe, amaç, yaklaşım ve yöntemleri dikkate alınarak incelenmiş olup; çalışmanın başvuru dosyasında belirtilen şekilde etik ve bilimsel açıdan sakınca bulunmadığına etik kurul üyelerince karar verilmiştir.

Bilgilerinize rica ederim.

Prof.Dr. Hasan Çetin EKERBİÇER
Etik Kurulu Başkanı

Güvenli Elektronik
İmzalı Aslı İle Aynıdır.
04/12/2017

Yücel DEMİR
Etik Kurulu Sekr.

Evrakı Doğrulamak İçin : http://193.140.253.232/envision.Sorgula/BelgeDogrulama.aspx?V=BE8R4BRVB

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Dekanlığı, Korucuk Kampüsü, Korucuk, Adapazarı/Sakarya
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Bu belge 5070 sayılı Elektronik İmza Kanununun 5. Maddesi gereğince güvenli elektronik imza ile imzalanmıştır.

7.2. Curriculum Vitae

Personal Information

Name	Yazgı Isıl	**Surname**	Kayabasoğlu
Place of Birth	Sakarya	**Date of birth**	25.02.1990
Nationality	TC	**TR Identity No**	65101133538
E-mail	yazgiiskender@yahoo.com	**Tel**	0531 210 73 63

Educational Status

Degree	Field	Name of the Institution Graduated	Graduation Year
Master	Nutrition and Dietetics	Yeditepe University	Currently
Bachelor	Medicine	Sakarya University	2014
High School	Science and Mathematics	Sakarya Anatolian High School	2008

Foreign Languages	Foreign Language Exam Grade (#)
English	69 Interuniversity Foreign Language Exam (ÜDS)

Work Experience

Assignment	Institute	Duration (Year-Year)
Occupational Physician	Szutest Joint Health and Safety Unit Ltd.	2019- Currently
Family Doctor	Sakarya-Serdivan Campus Family Health Center	2016-2018
Branch Manager	Sakarya Provincial Health Directorate	2014-2016
Medical Doctor	Sakarya Community Health Center	2014-2014

Computer Skills

Program	Using Skill
Microsoft Office	Good
SPSS	Medium