

## Original Research Article

# Investigation of The Effect of Gender on Ready-to-Eat Food Consumption Status of Associate Degree Students

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### ABSTRACT:

**Aims:** This study aims to evaluate the attitudes of associate degree students about fast food and to determine the effect of gender.

**Study design:** Students who voluntarily agreed to participate in the study were included. Within the scope of the research, the questionnaire was conducted using a simple random sampling method to determine the students' consumption of ready-to-eat food. Questionnaire questions were developed based on the studies in the literature and organised by the purpose of the research

**Place and Duration of Study:** The survey was conducted face-to-face with 326 students in the autumn term of 2022-2023 (approximately 15 students from each programme) studying in 10 different departments and 20 Tekirdağ Namik Kemal University Vocational School of Technical Sciences programmes.

**Methodology:** Before starting the questionnaire, the clarity and validity of the questions were tested with 10 subjects to make necessary corrections when necessary. In the questionnaire, students were asked about their height-weight values and Body Mass Index (BMI) was calculated. Descriptive statistics of the data obtained from the study were evaluated by Crosstabs analysis and Chi-square ( $\chi^2$ ) independence tests in the SPSS ver.18 statistical package program.

**Results:** According to the study results, statistical significance was found in the following dimensions related to gender factor: BMI (\*\*P<0.01), housing status (\*P<0.05), frequency of consumption (\*P<0.05), reason for consuming ready-to-eat food (\*P<0.05), favorite ready-to-eat food (\*\*P<0.01), portions consumed at meals (\*\*P<0.01), finding portions sufficient (\*\*P<0.01), comments about nutritional value (\*\*P<0.01), and thoughts about hygiene (\*\*P<0.01).

**Conclusion:** Understanding the factors affecting fast food consumption can contribute to raising awareness among students about balanced nutrition and developing nutrition strategies. Studies that investigate and understand these factors may be important for companies in the sector to follow consumer preferences and trends.

*Keywords: Prepared food, Consumption, Gender, Student,*

## 1. INTRODUCTION

Changes in people's food consumption are realised as a result of the effects of economic, social and cultural developments (Gül et al., 2003). Nutrition is the conscious intake and utilisation of essential food groups and water for growth and development, with their nutritional values intact Çayır et al., 2011). Ready meals are meals that require few or no additional ingredients, are prepared and finished by external procedures, and are designed to completely and quickly replace the home-cooked main course (Costa et al., 2001; Mahon et al., 2006). These foods are packaged where they are sold and are ready for consumption. Canned foods, ready-to-eat foods, fast food, frozen foods, instant products, dried foods, preserved foods, etc. all fall within the scope of ready-to-eat foods (Meenambekai and Selvarajan, 2012). Ready-to-eat food businesses continue to grow worldwide (Özleyen, 2005). It is estimated that approximately 50 million people worldwide consume 'fast food' every day (Behnke and Janssen, 2020). Fast foods are products that are sold ready to eat in commercial establishments with or without seating, have low prices, are generally eaten by hand, sometimes have cutlery in the service, and have low durability, whose packaging is discarded after use (Tayfun and Uygur, 2008). Significant changes are observed in the eating habits of university students with moving away from home (Shi et al., 2021).

In our country, many university students study in different cities away from their families and nutrition is a serious problem for students. The fact that fast-food-type foods are easy to consume and have good taste and appearance increases the consumption rate among young people (Şanlıer and Ersoy, 2005). Differences in nutritional behaviours between male and female individuals determine the marketing and advertising strategies of the fast-food industry according to the target audience. Gender may be an important factor in determining these strategies. This study aims to evaluate the attitudes of associate degree students about fast food and to determine the effect of gender.

## 2. MATERIAL AND METHODS

There are 300 students (approximately 15 students from each programme) studying in 10 different departments and 20 programmes of Tekirdağ Namık Kemal University Vocational School of Technical Sciences. Students who voluntarily accepted to participate in the study were included in the study. Within the scope of the research, the questionnaire was conducted using a simple random sampling method to determine the consumption of ready-to-eat food by the students. The questionnaire form was developed based on the studies in the literature and organised by the purpose of the research (Arslan et al., 2023; Demircan et al., 2019; Sayın, 2022). The first part of the questionnaire includes questions on demographic characteristics, the second part on ready-to-eat food preferences, consumption frequency and quantity, and the third part on the issues considered when consuming ready-to-eat food. The survey was conducted face-to-face with 326 students in the autumn term of 2022-2023. Before starting the survey, the clarity and validity of the questions were tested with 10 subjects to make necessary corrections when necessary (Badrie et al., 2004). In the questionnaire, students were asked about their height-weight values and Body Mass Index (BMI) was calculated (Kennedy-Behr et al., 2015). Those with a body mass index of 18.5 kg or less are classified as underweight, 18.5-24.9 kg as normal, 25-29.9 kg as overweight and 30-39.9 kg as obese (Anonymous, 2010).

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### Comment

Add further facts or data particular to the nation to give the issue a localized context.

Describe in detail how the study's target demographic's food intake is impacted by social and cultural developments.

Clearly state the social or health effects of university students' increased fast-food intake.

Draw attention to the gaps this study fills, such as the paucity of studies on gender-specific behavior in this demographic.

Make sure the references are current and pertinent, especially when discussing rapidly evolving subjects like eating patterns.

Describe the significance of concentrating on associate degree students and how the results may advance practice or understanding in general.

Explain why gender is a relevant variable in this situations.

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## 2.1 Statistical Analysis

Descriptive statistics of the data obtained from the study were evaluated by Crosstabs analysis and Chi-square ( $\chi^2$ ) independence tests in the SPSS ver.18 statistical package program (Gujarati, 1995; Mirer, 1995).

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## 3. RESULTS AND DISCUSSION

Of the students who participated in the survey, 68.2% were male, 31.8% were female, and the distribution of age groups was as follows: 71.1% were between 15-20, 25.9% were between 21-24, 1.8% were between 25-35, 0.9% were between 36-50, and 0.3% were over 50 years of age. There is a significant relationship between the gender of the students and BMI ( $\chi^2$ : 23.404;  $p < 0.01$ ). The gender and BMI distribution (%) of the students are given in Table 1. In general, it was determined that the majority of the students (60.7%) were of normal weight. The proportion of overweight and obese students was higher in male students than in female students. This shows that girls are more careful about their weight. Obesity has reached epidemic proportions worldwide and has become an important public health problem (Lau et al., 2007). Koşum and Akbay (2021) examined the fast-food consumption habits of consumers in the city centre of Istanbul and found that 78.3% of those with a BMI of 25 and above consumed fast food.

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**Table 1. Gender and BMI distribution of students (%)**

Gender	BKI				Statistics
	Underweight	Normal	Overweight	Obese	
Male	3.9	60.3	28.8	7.0	$\chi^2 = 23.404^{**}$
Female	17.8	61.7	14.0	6.5	
Total	8.3	60.7	24.2	6.8	

\*\*There is a significant relationship at  $P < 0.01$  level.

There is a significant relationship between the gender of the students and their housing status ( $\chi^2$ : 6.718;  $p < 0.05$ ). The distribution of students' gender and housing status (%) is given in Table 2.

**Table 2. Distribution of students' gender and housing status (%)**

Gender	Housing Status			Statistics
	With family	Dormitory/ hostel	Student House	
Male	34.1	34.1	31.8	$\chi^2 = 6.718^*$
Female	37.4	43.9	18.7	
Total	35.1	37.2	27.7	

\*There is a significant relationship at  $P < 0.05$  level.

There is a significant relationship between the gender of the students and the frequency of consumption of convenience foods ( $\chi^2$ : 10.485;  $p < 0.05$ ). The distribution (%) of students' gender and frequency of consumption of ready-to-eat food is given in Table 3. In general, it was determined that students consumed ready-to-eat food once a day and several times a week. It was determined that 2.8% of female students did not consume ready-to-eat food at all, but all male students consumed ready-to-eat food. Our results were found to be compatible with the results of the studies given below.

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Tengiz (2018) found that most of the male and female students consumed fast food several times a week and more males than females consumed fast food products every day. Dalrymple (2013) found that 91.8% of the students consumed fast food once or twice a week. Haines et al. (2010) found that 84% of the students consumed fast food products at least once a week in their study. Sayılı and Gözener (2013) found that 24.5% of the students went to fast food restaurants almost daily. In another study, it was determined that men were 1.7 times more likely to consume fast food than women. They stated that men spend more time outside than women, seeing different environments and their desire to eat more practical food may be effective in their consumption preferences (Koşum and Akbay, 2021).

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**Table 3.** Distribution of frequency of consumption of ready-to-eat food by gender (%)

Gender	Frequency of ready-to-eat food consumption					Statistics
	Once a day	Once a week	Several times a week	Once on the moon	Not consume	
Male	41.5	14.4	37.1	7.0	0.0	$\chi^2 = 10.485^*$
Female	33.6	22.4	34.6	6.6	2.8	
Total	39.0	17.0	36.3	6.8	0.9	

\*There is a significant relationship at the  $P < 0.05$  level.

There is a significant relationship between the gender of the students and the reasons for consuming convenience foods ( $\chi^2: 14.122; p \leq 0.05$ ). The distribution (%) of students' gender and reasons for consuming ready-to-eat food are given in Table 4. Students generally stated that they consume ready-to-eat food mostly because it is practical. Önder and Önder (2019) found in their study that most of the students preferred fast food products due to convenience and time limitations. In another study, it was determined that students prefer such products because both preparation and consumption do not require much time (Özdiç, 2004).

Regarding the reasons why consumers prefer fast food products; Unur and Kaya Gök (2012), because they get hungry mostly when they are out, Morse and Driskell (2009), because they like fast and taste, Özcelik et al. (2007), because it is tasty, cheap and fast, Driskell et al. (2006) determined that it was consumed in limited time and because they liked its taste. Cömert (2014) found that for fast food consumption among university students was that it was fast, followed by being economical, tasty, healthy, popular and safe, respectively. Sinir et al. (2014) determined that university students prefer fast food products because they are cheaper and easily accessible. Kınır et al. (2015) concluded in their study that the most important reasons affecting students' fast-food consumption were product features, followed by speed and price policy. Yazıcıoğlu et al. (2013) determined that the most important for fast food consumption of university students were price, product features and speed.

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**Table 4.** Distribution of students' gender and reasons for consuming ready-to-eat food (%)

Reason for consuming ready-to-eat food	Gender			Statistics
	Male	Female	Total	
Practicality	56.3	65.1	59.1	
Nutritive value	0.9	0.0	0.6	
Saving time	14.4	11.2	13.4	

<b>Price favourability</b>	12.6	1.9	9.2	$\chi^2 = 14.122^*$
<b>Enjoyable consumption</b>	4.4	5.7	4.8	
<b>Delicious</b>	7.0	12.3	8.7	
<b>Product diversity</b>	4.4	3.8	4.2	

\*There is a significant relationship at  $P < 0.05$  level.

There is a significant relationship between the gender of the students and their favourite ready-to-eat food ( $\chi^2: 37.596$ ;  $p \leq 0.01$ ). The distribution (%) of the gender of the students and their favourite ready-to-eat food is given in Table 5. In general, it was determined that hamburgers, doner and pizza were the most favourite ready-to-eat foods consumed by the students.

In our study, it was determined that hamburger (25.5%) was the favourite ready-to-eat food consumed by female students, while male students preferred doner (15.7%) in the first place. Özcelik et al. (2007) determined in their study that males preferred to go to kebab and meatball restaurants and females preferred to go to hamburger restaurants. Boğaz (2003) concluded that consumers prefer meat doners, grilled meatballs and chicken doners the most among traditional fast-food type foods, and hamburgers, french fries and chicken burgers the most among Western-style foods. Sürücüoğlu and Çakıroğlu (2000), in their study on the fast-food preferences of Ankara University students, determined that the most preferred food by men and women was minced meat pita.

**Table 5.** Distribution of the most favorite ready-to-eat foods by gender (%)

The most popular ready-to-eat food	Gender			Statistics
	Male	Female	Total	
Frozen Pizza	7.0	9.4	7.8	$\chi^2 = 37.596^{**}$
Döner kebab	15.7	12.3	14.6	
Pizza	11.8	14.2	12.5	
Dürüm	7.9	3.8	6.6	
Chips	3.9	6.6	4.8	
Hamburger	11.8	25.5	16.1	
Chocolate	2.1	4.7	3.0	
Meatball	3.1	2.8	3.0	
Noodle	4.4	4.7	4.5	
Lahmacun	2.6	3.8	3.0	
Soup	6.6	3.8	5.7	
Types of canned food	2.2	1.9	2.1	
Patso	7.8	1.9	6.0	
Pita	1.3	0.8	1.2	
Toast	3.5	0.0	2.4	
Kebab	2.2	0.0	1.5	
Grilled chicken	3.5	0.0	2.4	
Nugget	1.3	0.0	0.9	
Raw meatballs	0.4	3.8	1.5	
Chicken pilaf	0.9	0.0	0.6	

\*\*There is a significant relationship at  $P < 0.01$  level

There is a significant relationship between the gender of the students and the portion of ready-to-eat food consumed at one meal ( $\chi^2: 16.109$ ;  $p \leq 0.01$ ). The gender of the students and the portion distribution (%) of ready-to-eat food consumed at one meal are given in Table 6. When the table is analysed, it is seen that male students consume more portions than female

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students. The majority of female students (81.1%) stated that they consumed one portion. Driskell et al. (2006) reported that fifty per cent of males typically did not consider portion sizes, while 53% of females considered smaller portion sizes.

**Table 6.** Distribution of servings of ready-to-eat food consumed at a meal by gender (%)

Gender	Distribution of servings of ready-to-eat food consumed				Statistics
	1 Portion	1.5 Portion	2 Portion	More portions	
Male	59.4	27.9	9.6	3.1	$\chi^2$ : 6.109**
Female	81.1	11.3	6.7	0.9	
Total	66.3	22.7	8.7	2.3	

\*\*There is a significant relationship at  $P < 0.01$  level.

There is a significant relationship between the gender of the students and their finding ready-to-eat food portions satisfying ( $\chi^2$ : 8.669;  $p < 0.01$ ). The distribution (%) of students' gender and their satisfaction with ready-to-eat food portions is given in Table 7. In general, 55.2% of the students stated that they found ready-to-eat food portions satisfying and 44.8% stated that they did not find them satisfying. Female students found ready-to-eat food portions more satisfying than male students.

**Table 7.** Gender of students and their perception of ready-to-eat food portions as satisfying (%)

Gender	finding it satisfying		Statistics
	Yes	No	
Male	49.8	50.2	$\chi^2 = 8.669$ **
Female	67.0	33.0	
Total	55.2	44.8	

\*\*There is a significant relationship at  $P < 0.01$  level.

There is a significant relationship between the gender of the students and their interpretation of the nutritional value of ready-to-eat food ( $\chi^2$ : 13.556;  $p < 0.01$ ). The distribution (%) of the gender of the students and their interpretation of the nutritional value of ready-to-eat food is given in Table 8. 33.3% of the students found the nutritional value of ready-to-eat food acceptable, 33.0% found it low, 26.8% had no idea, and 6.8% found it high.

Nutrition is an action that should be taken consciously to get the nutrients the body needs in sufficient quantities and at the necessary time to maintain and improve health and quality of life (Kutlu and Çivi, 2009). Fast food refers to high-calorie food that usually lacks essential micronutrients such as vitamins (A and C), minerals, amino acids, and fibre (Palos Lucio et al., 2020). Research consistently shows that consuming fast food may significantly contribute to poor diet quality and lead to excess body weight in individuals (Lachat et al., 2012). In their study, Goyal and Singh (2007) reported that university students went to fast-food restaurants but thought that homemade food was much better than the food served in fast-food outlets.

**Table 8.** Distribution of student's interpretation of the nutritional value of ready-to-eat food by gender (%)

Gender	Students' interpretation of the nutritional value of ready-to-eat food				Statistics
	High	Low	Acceptable	No idea	
Male	7.9	31.9	38.4	21.8	$\chi^2 = 13.556^{**}$
Female	4.7	35.5	22.4	37.4	
Total	6.9	33.0	33.3	26.8	

\*\*There is a significant relationship at  $P < 0.01$  level.

There is a significant relationship between the gender of the students and their suspicion of the hygiene of prepared foods ( $\chi^2: 9.377$ ;  $p \leq 0.01$ ). The distribution of the gender of the students and their doubts about the hygiene of ready-to-eat foods is given in Table 9. When the rate of yes and sometimes responses of the students participating in the survey is evaluated together, it is seen that the rate of doubting the hygiene of ready-to-eat foods is high. In his study, Sayın (2022) stated that the participants had the perception that hygiene rules were not followed in fast-food-style establishments. ALFaris et al. (2015) determined that hygiene and safety standards of restaurants were the main source of concern about fast food for 62.2% of girls in their study.

Gündüz and Aydoğan (2015) determined that the average food safety awareness level of the students surveyed in their study was 52%. Baral et al. (2020), in their study on food hygiene and perception of the nutritional value of food, approximately two-thirds of the participants stated that they evaluated the food hygiene in restaurants as somewhat hygienic. Altaş and Varnacı Uzun (2017) stated that students prefer eating and drinking places that they find hygienic. Korkmaz (2005), in his study conducted in Ankara province, stated that the three important factors affecting students' decision to buy fast food are cleanliness, healthy products and quality. Islam and Ullah (2010) reported that students rated brand reputation as the most important factor when choosing fast food, followed by proximity and accessibility, similar taste, cost and quality relationship, discount and taste, cleanliness and hygiene.

Unhealthy food consumption is becoming an increasing problem among college students (Egan et al., 2007). When eating out, consumers expect to obtain quality food with an acceptable level of food hygiene, which reduces the risk of foodborne illness (Djekic et al., 2014). Food safety is one of the most important issues in public health (Scallan et al., 2011). Food sanitisation generally refers to the rules and procedures that apply within the food industry during production, packaging, handling or service (Djukic et al., 2016). Poor hygiene and sanitation in food management can affect the quality of the food produced (Aldiani, 2018). It is very important to maintain proper hygiene habits at all times to preserve food (Febriyani et al., 2022).

**Table 9.** Gender and doubts about the hygiene of prepared foods (%)

Gender	Doubt about the hygiene of ready-made foods			Statistics
	Yes	No	Sometimes	
Male	43.2	18.3	38.5	$\chi^2 = 9.377^{**}$
Female	39.6	7.6	52.8	
Total	42.1	14.9	43.0	

\*\*There is a significant relationship at  $P < 0.01$  level.

Öztürk and Onurlubaş (2022) reported that the majority of students (62.5%) thought that fast-food consumption habits were harmful. Uğur (2018) reported in his study that a significant

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portion of young people continue to consume fast food despite thinking that fast food is unhealthy. In another study, 93.9% of the participants stated that fast-food or packaged prepared food products were not healthy products (Mititelu et al.,2023). Fast food-style foods cause some health problems in the long term because they are not balanced in terms of energy and some nutrients (Akdağ, 2015). Although the harmful effects of fast food consumption on health are known, students prefer it due to peer interactions and social media advertisements. Providing appropriate nutrition education to young people on healthy eating is important to limit the frequency of fast food consumption (Anitha et. al,2022).

#### 4. CONCLUSION

The findings of our study do not reflect the ready-to-eat food consumption behaviours of all associate degree students but are consistent with the studies published on the subject. Food habits change over time. Ready-to-eat food consumption is quite common among university students and is a part of their lifestyle. In this study, it was determined that gender, which is one of the most important demographic characteristics of individuals, affects the ready-to-eat food consumption status of associate degree students. In general, it was determined that students consume ready-to-eat food once a day and several times a week and prefer it more because it is practical. The type of ready-to-eat food consumed and the amount of portions consumed in a meal differed in male and female students. Although the majority of the students who participated in the survey stated that ready-to-eat foods do not have the same amount of nutrients as freshly prepared foods, it was determined that the majority of them consume ready-to-eat foods. If the number of restaurants on and off campus that meet the nutritional needs and promote healthy nutrition is not increased, students will continue to consume such foods despite not finding them healthy. Understanding the factors affecting fast food consumption can contribute to increasing the level of awareness of students about balanced nutrition and developing nutrition strategies. Studies investigating and understanding these factors may be important for companies in the sector to follow consumer preferences and trends, offer healthier menus, create brand loyalty and increase market share.

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#### ETHICAL APPROVAL (WHERE EVER APPLICABLE)

Ethical approval and permission for this study was obtained from Tekirdağ Namık Kemal University Science and Engineering Sciences Scientific Research and Publication Ethics Committee (Meeting Date-Time: 2022-11-11 - 11.00, Meeting Number: T2022-1164)

[Acknowledgement](#)

#### **AUTHORS' CONTRIBUTIONS**

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