

## Original Article

# Effects of social determinants on food choice and skipping meals among Turkish adolescents

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**Purpose:** To present data that contributes to understanding factors that influence food choice and skipping meals in adolescents. **Methods:** A cross sectional study is carried in selected high schools in Bornova. Study sample comprises of 527 students chosen randomly by class from a population of 2410 first year in high school students. Self-administered questionnaires containing sociodemographic determinants, self reported weight and height, food choices and meal patterns were used. **Findings:** A psychosocial factor that affects almost all of the students is the "taste and sensory perception of food". The second noticeable factor is the "health and nutritious value of food". The time conserved and the convenience in the preparation of food is one of the lifestyle factors that affect more than half of the students. The cost of the food was also found to have an effect. Among the third group of factors categorized as "media", the leading factor is advertisement, effective in one third of the students. Among boys and girls, there was no statistical difference in the type of meal skipped. Living in Izmir for more than 10 years compared to less than ten years, being in a nuclear family to extended family, and belonging to the "owner" social class to "wage laborer" class also do not statistically differ with regard to skipping meals. However, the mother's and father's education level and having a working mother are associated with skipping meals. **Conclusions:** These results provide important evidence to support opportunities to positively influence the adoption of healthful eating.

**Key Words:** Adolescent, food choice, skipping meals, meal pattern, social determinant

## INTRODUCTION

Adolescence is considered an especially important period of intense physiological, psychological and social change and is critical for the development of dietary behaviours.<sup>1</sup> It is a life stage where individuals shape their identity and constitute a personal system of beliefs, morals and values.<sup>3</sup> In this period, marked by rapid growth and development, the total nutrient needs are higher than any other time during the life cycle.<sup>4</sup> It also conserves a notably important chance to shape and consolidate healthy eating and lifestyle behaviors, thus preventing or delaying the onset of nutrition-related chronic diseases in adulthood.<sup>2-5</sup>

Adolescents are an in between group with some nutrition problem commonalities with both children and adults.<sup>2</sup> However, there is also evidence that dietary quality declines from childhood to adolescence.<sup>6-7</sup> Reasons for this shift lies in the differentiation of lifestyle factors by embracing developmental, social and environmental changes. As the adolescents progress in independence, they take control of what they eat, where and how. This generates new eating patterns and habits outside the home, with personal preferences taking dominance over eating habits learned previously.<sup>8</sup> The combination of: concerns on physical appearance, the need for peer acceptance, and time restrictions due to busy schedules all affect eating patterns and food choices during this period.

Adolescents are a heterogeneous age group with varieties in development, maturity and lifestyle. However they cohere in their poor nutritional habits as one of the most

significant risk behaviors that pose a threat to their health. It is reported that their eating patterns are frequently erratic.<sup>2</sup> Skipping meals may be considered as an indicator of this erratic eating behavior and is associated with numerous health compromising eating behaviors and less adequate dietary intakes.<sup>9</sup> These unhealthy eating behaviors and inadequate intake are directly correlated with deficiencies in intellectual performance and cognitive development, behavioral and mental problems, obesity and overweight conditions as well as eating disorders.<sup>10</sup>

Some studies show that the adolescents' eating patterns are formed through a complex interaction of internal and external causes such as food preference and availability, as well as weight perception and parental and peer influences.<sup>7,11-12</sup> Various theoretical frameworks have been used to explain the eating behavior, affected by multiple socio-environmental and personal factors, that influence individual behavioral patterns.<sup>13</sup> However despite considerable discussion, few studies have looked at the independent contributions of socioeconomic circumstances to health-related behaviors, especially dietary intakes.<sup>14</sup> One of these theories, Social Cognitive Theory (SCT),

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Manuscript received 20 July 2007. Initial review completed 17 January 2008. Revision accepted 5 March 2008.

provides an useful theoretical framework to understand and describe the multiple influences that have impacts on the eating behaviors of adolescents.<sup>7</sup> Another relevant model is the ecological perspective.<sup>7</sup> In the integrated and composite theoretical framework based on SCT and the ecological model, adolescent eating behavior is a function of four levels of influence: individual, interpersonal, environmental and societal.<sup>15</sup>

It is essential to understand how young people themselves view health-related issues such as nutrition in order to create effective strategies. The purpose of this paper is to present data that contributes to understanding the factors that influence food choice and skipping meals in adolescents.

## MATERIALS AND METHODS

### Study Population

This study has been carried out in selected high schools in Bornova, a municipality of the city of Izmir. The municipal has six Super High Schools, two Normal High Schools, two Anatolian High Schools, one Science High School, four Vocational High Schools, four High Schools for Occupations for Girls, and two Private Schools. The Turkish high school education system has eight types of schools where the curriculum, as well as the student socioeconomic composition differentiates substantially. The most scientific and least crowded are "Science High Schools" were acceptance to these boarding schools requires a special exam achievement and no co-payment. In "Private Schools" the curriculum basically differentiates in language education and the yearly fees are considerably high. "Anatolian High Schools" are schools where students are accepted through a national exam that are similar to the private schools in their curriculum but they are free of payment. "Super High Schools" needs lower scores in the national exam. These four types of schools have preparation classes for one year.

The students who can not achieve a certain scores in the national exam attend "Normal High Schools". "High School For Occupation For Girls", "High School for Trade" and "High School for Industrial Occupations" are attended by students from low socioeconomic conditions who aim to achieve a job as early in life as possible.

The age group of the study is chosen to be the period of entrance to high school. This is after the 8 years of compulsory elementary school education, therefore the age of

entrance to high school is approximately 15.

The city of Izmir is located in the western coast and is the third most crowded city in Turkey. Bornova; a municipality of the city of Izmir, consist of urban poor as well as rich areas, reflects a good example of the cosmopolitan sites frequently seen in crowded cities of Turkey.

### Survey Design

Data were collected in the 2003-2004 education year. The total number of students included was 2410. The sample size selected at 99 % confidence interval was 517. Students were stratified according to high school groups. After calculating the number of students to be selected from each stratum, the number of classes that would add up to reach this sum has been selected with simple random sampling. The total number of students surveyed is 527, because all of the students in the chosen class have been included in the survey with ethical concerns.

Formal permission for data collection and information about the numerical distribution of students of each school and class was obtained from the Local Unit of Ministry of Education in formal interviews by the researchers as well as formal correspondence via the dean. Only one principal rejected to participate and so that school was not included in the study. After consent from the school principals, dates were arranged for study conduction. Teachers distributed parental consent forms to parents via students, asking permission for their child to participate in the study. None of the parents disagreed to participate. The study has been approved by the academic board of the Department of Public Health of Ege University and the Local Unit of Ministry of Education.

The classes were chosen from the eight different types of schools in order to represent different socioeconomic and educational levels. Every class was coded numerically with the schools initial letters in front (i.e.; Hayrettin Duran Class II as HD2). The random cluster sampling was conducted by two researchers blind to the study group and not included in the research team. Data collection was supervised by two researchers during one school session and data were provided voluntarily and anonymously using self-administered questionnaires.

The number of students needed for the survey and the number of students included for each school group is listed in Table 1. The main reason for not being included in the study was incomplete questionnaires.

**Table 1.** Distribution of the students according to school groups

TYPE OF HIGH SCHOOL	No of students in their first year		Number of students needed for the sample	Number of students included
	n	%		
High Schools for Trade	597	24.77	128	120
Anatolian High Schools	463	19.21	100	99
Super High School	564	23.40	121	115
Normal High School	349	14.48	75	61
High School For Occupation For Girls	183	7.59	39	51
High Schools for Industrial Occupations	156	6.47	34	47
Science High Schools	60	2.49	12	19
Private High Schools	38	1.58	8	15
<b>TOTAL</b>	<b>2410</b>	<b>100</b>	<b>517</b>	<b>527</b>

### Questionnaire

The questionnaire were designed with the help of a senior dietician after a through examination of literature on the issue. It has not been adapted from a specific questionnaire. The questionnaire has not been validated for reproducibility or validity. The questionnaire has been pilot tested on 25 students in their first year of high school that is located in a municipality with similar characteristics as Bornova. From the results of the pilot study, the question about the job of the parent has been rearranged and the time necessary to complete the questionnaire was estimated to be 45-60 minutes.

The questionnaire contained questions relating to four major topics:

1. Sociodemographic characteristics: Age, sex, years in Izmir, the number of people in the household, education status of mother, education status of father, the job and class of the father, the job of the mother.
2. Meals: number of meals eaten everyday, habit of skipping meals, the skipped meals, reasons for skipping meals, breakfast at home, diner at home, composition of the family at dinner, the amount of the daily allowance
3. Food choice: the effect of taste, health and nutritious value, the popularity, the cost, advertising, as well as the time and convenience in the preparation of food.
4. Weight and height: Self reported weight and height, adolescents' perception of weight status.

The food choice part of the questionnaire is based on the theoretical framework of the integration of SCT and ecological perspectives in order to understand multiple influences on the eating behaviors of adolescents. In this framework, adolescent eating behavior is viewed as a function of multiple levels of influence. It also emphasizes the interaction of factors within and across levels of influence. The four broad levels of influence are individual (psychosocial, biological and lifestyle factors), social environmental (family, demographic characteristics, food availability, peers), physical environmental (schools, fast food restaurants, vending machines, convenience stores and worksite) and macro system environmental (media and advertising).<sup>7</sup>

The students were asked on a five point scale the effect of taste, health and nutritious value, the popularity, the cost, the advertising, time and convenience with regard to food preparation, on their food choice. The scale was "very influenced/ fairly influenced/ influenced/ influenced a little/ not influenced". The first three categories have been grouped as "Influenced" and the last two have been grouped as "Not influenced".

The habit of skipping meals has been determined by questions on the frequency of skipping meals, the meals skipped, the reasons for meal skipping and the meals eaten at home.

Meal skipping was assessed by asking adolescents if they had a habit of skipping meals. "Yes" and "sometimes" were considered as skippers and "no" were considered as non-skippers. The most frequently skipped meals were asked and more than one meal could be chosen from the list.

Students chose from the list of reasons for meal skipping: "I did not have time", "I did not have money", "I

did not feel it was convenient to prepare a meal", "I did not feel like eating". There was an open ended part of the question for "other reasons." The rationale for skipping meals was questioned as a whole but not specifically for each meal.

High school students are away from home and are at school during lunch time except for the weekends. However breakfast and dinner are meals that can be eaten at home. The students were questioned on whether they ate these meals at home and whether their family comes together during these meal times. The composition of the family at the dining table was also asked.

The BMI-for-age percentiles have been determined by the use of self reported data on weight and height. The BMI cut-off points were based on reference percentiles from NHANES survey<sup>16</sup> as recommended by WHO.<sup>17</sup>

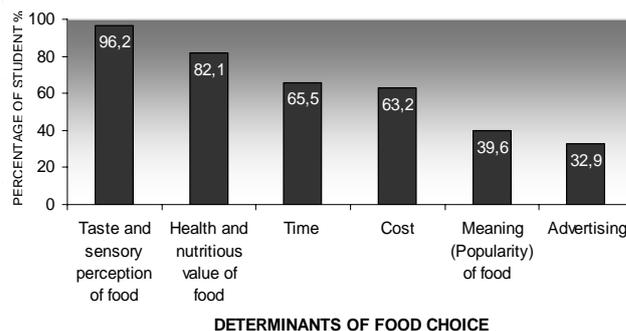
### Data Analysis

Food choice and skipping meals were regarded as the dependent variables. The influences of some psychological factors (taste and sensory, the health value of the food, meaning of the food), biological factors (sex), lifestyle related factors (time and convenience, cost); social environmental factors (family meals, household size and structure, years in Izmir, mother's and father's level of education, mother's employment, social class according to father's occupation) are chosen as independent variables.

Social class is evaluated over the father's occupation because father's occupation reflects family prestige and social status<sup>18</sup>, and fathers are predominantly the breadwinners of the families in the study population. The types and amounts of foods available at home, depend mostly on this family prestige or social status. The availability and type of food affect the development of food preferences.

The class of the father is based on the classification made by Erik Olin Wright presented in Figure 1.<sup>19</sup>

In our classification, the capitalists and small employers are regrouped into "employers", the managers and supervisors are regrouped in the class of "white collars" and all the workers into the class of "blue collars". This is made because the respondents are students and they are assumed to have not much detailed information on the organization assets and possession of skill of their father's position. The students answered two open ended



**Figure 1.** The distribution of the students who are influenced in their food choice by selected individual and social environmental determinants.

questions asking about the occupation of the father and organization they are associated with (if there is one). A set of survey questions followed this, to clarify the indicators for each of the class positions of the fathers. The property dimension is determined by the two questions inquiring as to whether the respondents father is self-employed and, if self-employed, the number of persons working for him. Self-employed fathers who hires at most one single worker are classified as petit-bourgeois; self-employed fathers who has two or more workers are classified as employers. The position of the employed group is classified into two main groups: administration and production. The wage laborers occupied white collar position if they are working in administration. The fathers are grouped as blue collars, if they are working in production.<sup>19</sup>

### Statistical methods

Statistical analyses were performed using SPSS 11.0. Statistical significance is achieved when the *p* value is less than 0.05 and chi-square tests were used to compare the frequencies.

## RESULTS

### Food choice

In this study the influences on food choice are presented in three main groups: Psychosocial, lifestyle and media. The psychosocial factor that affect the food choice of almost all of the students is the "taste and sensory perception of food". For most of the students, the second noticeable factor affecting their choice is "health and nutritious value of food". The popularity of the food affects less than half of the students in their selection on what to eat (Fig 1).

The second group of factors enlightens the effect of lifestyle in food choice. The time constraint in the preparation of food is the leading lifestyle factor affecting students. The cost of the food is also effective in more than half of the group.

Among the third group of factors categorized as "media", the leading factor is advertisement and it is affects

one third of the students (Figure 1).

### Skipping meals

Skipping meals which can be considered as an unhealthy eating behavior is associated with sex; one third of the boys skip meals where as only one sixth of the girls present this unhealthy eating behavior. However among boys and girls, there was no statistical difference in the type of meal skipped. The two most frequently mentioned reasons for skipping meals are "I didn't feel like eating" and "I didn't have time". Statistical difference has been found among the mentioned reasons between the two sexes. "Not feeling like eating" is more frequent for girls and "not having time" were cited more by boys (Table 2).

The distribution of the students according to their father's social class is as follows; one third owners and almost two thirds wage laborers, the unemployed fathers are another small group. Among the owners group, the employers and petit bourgeois are distributed almost equally. The same is observed for the group of wage laborers, in which the white and blue-collared fathers are equally distributed in the group.

The majority (94.4%) of the students perceives their economic level as "well" and only 5.6% of them consider their state of wealth as "bad".

When questioned about their knowledge on nutrition, half of the students (55.7%) reported that they had formal lectures on nutrition. As source of their information about nutrition, media was cited by 39.2%, family and peers by 35.7%, teachers by 14.0% and health workers by 6.2% of the students.

Among the 522 students who answered the question on eating breakfast at home, 38.7% answered as "no" or "sometimes" and 61.3% answered as "always". For dinner, among the 520 who answered, 96.7% ate at home. Only 17 students (12 of them staying at student hostels) described dinner as "outside of home." Among the 503 students who ate at home, the family got together in 83.9% of them. Thirty eight students ate dinner alone and in 23 households a family member was missing at dinner, usually the father (in 15 households).

**Table 2.** The relationship between sex and skipping meals and the reasons for meal skipping

	GIRLS		BOYS		TOTAL		Chi- square <i>p</i> value
	N	% <sup>†</sup>	N	% <sup>‡</sup>	N	% <sup>‡</sup>	
Skipping meals (n=515)							
Skipped	38	14.8	60	23.3	98	19.0	$\chi^2=5.994$
Not skipped	219	85.2	198	76.7	417	81.0	<i>p</i> < 0.05
Skipped meal (n=417)							
Breakfast	102	46.6	88	44.4	190	45.6	$\chi^2=4.058$
Lunch	79	36.1	87	43.9	166	39.8	<i>p</i> > 0.05
Dinner	38	17.4	23	11.6	61	14.6	
Reasons of skipping meals (n=417) <sup>§</sup>							
Lack of time	46	20.6	73	35.1	119	27.6	$\chi^2=15.87$
Cost	2	0.9	5	2.4	7	1.6	<i>p</i> < 0.01
Convenience	6	2.7	5	2.4	11	2.6	
Did not feel like eating	163	73.1	124	59.6	287	66.6	
Self-esteemed over weight	6	2.7	1	0.5	7	1.6	
TOTAL	255		489		507		

<sup>†</sup> percentage of column, <sup>‡</sup> percentage of row, <sup>§</sup> defined more than a cause

**Table 3.** Distribution of the students according to their father's social class

<b>SOCIAL CLASS (n=513)</b>	<b>n (%)</b>
<b>Owners (n=155)</b>	
Employers	85 (16.6)
Petit bourgeois	70 (13.6)
<b>Wage Laborers (n=345)</b>	
White collars	168 (32.7)
Blue collars	177 (34.5)
<b>Unemployed (n=13)</b>	13 (2.5)

Among the sociodemographic variables associated with skipping meals; living in the city of Izmir for more than 10 years compared to less than ten years, being in a nuclear family to extended family, and belonging to the "owner" social class to "wage laborer" class did not statistically differ. However, the mother's and father's level of education and having a working mother are associated with skipping meals (Table 4).

Four hundred and ninety nine students reported both their height and weight. BMI calculations for age concluded that 9.1% were below 5 percentile, 80.8% were between 5 percentile and 85 percentile, 1.5% were between 85 percentile and 95 percentile and 3.2% were above the 95 percentile. Since the BMI calculations were based on the self reported height and weight, it may cause a small degree of systematic error when comparing data on an absolute scale such as BMI, as proposed by Willett. The BMI results should be interpreted carefully. For example the ones who perceived themselves as overweight were associated with the findings of BMI-for-age. However this may have resulted from a distortion of their perception of their body weight and an overestimation may have resulted or it may be interpreted as a correct and

honest answer. Those who are obese but content with their weight may have underestimated their weight in accordance with the literature.<sup>20</sup>

No correlation between BMI percentiles and skipping meals, the skipped meal, eating at home, the family composition of meal at home or the determinants of food choice has been found.

## DISCUSSION

This study shows that for most of the first grade and preparation class students of high schools, psychosocial factors such as taste and sensory perception, health effects and nutritious value of food play an important role in their food choice, followed by lifestyle factors like preparation time, convenience and cost of food. It is hopeful that as an unhealthy eating behavior, only 19% skip meals.

Food choice is formed as a result of the complex interactions of many factors in a person's environment. In an American marketing study, the five principle determinants of food selection are taste, cost, nutrition, convenience and health/weight control<sup>15</sup> similar to the findings of this study. In the study by Shannon et al, most students report that taste of food and getting a lot for their money are important factors influencing their food choices in the school cafeteria and one fourth of the students (27.4%) report that they always or often think about their health when choosing food.<sup>21</sup> In Nepal, a study among school children reveals that fast food is preferred by more than two-thirds, and that advertising influences preferences in 80% of the study participants,<sup>2</sup> but in our study advertising and popularity are the least influencing factors. It may be attributed to the changing social norms around healthful eating rather than the symbolic meanings that adolescents attach to food. Health aspects are considered by school children in making food choices as well as under-

**Table 4.** The relationship between sociodemographic determinants and meal skipping

<b>SOCIODEMOGRAPHIC DETERMINANTS</b>	<b>MEAL SKIPPING</b>			Chi-square <i>p</i> value
	<b>SKIPPED</b>	<b>NOT SKIPPED</b>	<b>TOTAL</b>	
	n (%) <sup>†</sup>	n (%) <sup>‡</sup>	n (%) <sup>‡</sup>	
<b>Life time spent in Izmir (n=523)</b>				
More than 10 years	320 (82.7)	67 (17.3)	387 (74.0)	$\chi^2=1.98$ <i>p</i> > 0.05
10 years and less	105 (77.2)	31 (22.8)	136 (26.0)	
<b>Family type (n=523)</b>				
Nuclear	356 (80.4)	87 (19.6)	443 (84.7)	$\chi^2=1.54$ <i>p</i> > 0.05
Extended	69 (86.3)	11 (13.8)	80 (15.3)	
<b>Class structure (n=488)</b>				
Owners	131 (85.7)	24 (15.5)	155 (31.8)	$\chi^2=1.49$ <i>p</i> > 0.05
Wage laborers	266 (79.9)	67 (20.1)	333 (68.2) <sup>§</sup>	
<b>Mother's level of education (n=523)</b>				
Less than high school education	248 (85.5)	42 (14.5)	290 (55.4)	$\chi^2=7.74$ <i>p</i> < 0.01
High school + university education	177 (76.0)	56 (24.0)	233 (44.6)	
<b>Father's level of education (n=523)</b>				
Less than high school education	202 (87.1)	30 (12.9)	232 (44.4)	$\chi^2=9.23$ <i>p</i> < 0.01
High school + university education	223 (76.6)	68 (23.4)	291 (55.6)	
<b>Mother's employment (n=520)</b>				
Working	143 (74.5)	49 (25.5)	192 (36.9)	$\chi^2=8.86$ <i>p</i> < 0.01
Not working	279 (85.1)	49 (14.9)	328 (63.1)	

<sup>†</sup> Percentage of rows; <sup>‡</sup> Percentage of columns; <sup>§</sup> Among the wage laborers group who answered the question on skipping meals

scoring the importance of social influences.<sup>22</sup>

Some dietary patterns like snacking, usually on energy-dense foods; meal skipping, particularly breakfast, or irregular meals; and the wide use of fast foods, appear quite common among adolescents.<sup>2</sup> In this study, skipping meals is used as a means to assess the unhealthy eating behavior and one out of five students' reported that they skip meals. In the study by Calderon et al. 44% of the students reported meal skipping<sup>23</sup> while in another study by Petrillo et al. the percentage of meal skipping was less and this result is similar to the findings of our study.<sup>5</sup> There is no statistical difference between the type of meals skipped in this study, but most research show that breakfast is the most frequently skipped meal by adolescents.<sup>5,24</sup> In contrast to the findings of Siega-Riz et al.<sup>25</sup> who found no relation between sex and the meal skipping pattern, a difference among the two sexes with regard to meal skipping was observed in this study. Male students tend to skip meals more than girls. This is contradictory with the findings of Savige et al who found that girls skip meals more.<sup>26</sup> This may have resulted from the cultural difference that the girls in the study society are more obedient with regard to family rules than boys. This may change as they grow older and move away from home. In a study that assessed dietary habits among Turkish university students, girls scored badly (72.7%) compared to boys (27.3%) with regard to their eating behavior. Breakfast (31.5%) and lunch (31.5%) were the most frequently skipped meals.<sup>24</sup>

In this study, the leading reasons for skipped meals stated by the adolescents were "not feel like eating" followed by "lack of time". The study by Croll et al. reveals that adolescents cite lack of time and peer related social pressure as barriers to healthy eating.<sup>4</sup> Meal skipping is also used by adolescents for weight control but research does not support meal skipping as a effective method for weight loss. However, it is suggested from this study that students believe meal skipping to be an effective strategy to loss.<sup>23</sup> In this study, the self esteem of the overweight individuals was among the last reasons to skip meals. This finding is parallel to the result presented on the influences of food choice, where students attributed more importance to the healthiness and nutritious value of food than the symbolic meanings attached to it.

The family has a major influence on adolescents' eating behavior because it influences food attitudes, preferences and values that affect lifetime eating habits.<sup>7</sup> Family size and parental education plays an important role in adolescent health and nutrition.<sup>27</sup> In recent years, Turkish families have undergone important changes in the family size from extended family to nuclear families. In this study, the majority of the students are living in nuclear families and family structure shows no association with regard to meal skipping. However, the findings of the study also shows that the father's and mother's education play an important role on the eating behavior of the adolescents; as the parent's education level increases, the frequency of unhealthy eating behavior, as skipping meals, decrease. Using the Youth Risk Behavior Supplement to the 1992 National Health Interview Survey (NHIS) in the US, Lowry et al. found that adolescent cigarette smoking, inadequate consumption of fruits and

vegetables, and episodic heavy drinking were more prevalent as the education level of the parent and family income decreased.<sup>28</sup> Unhealthy eating habits are also found to be associated with the general education level of the environment in which individuals lived, as an area level of socioeconomic status (SES) variables.<sup>29</sup> The mother's education is an important measure, because mothers are shown to be important for the development of health and nutrition knowledge and beliefs of their children.<sup>1</sup> Education reflects the mother's acquired levels of cultural capital and knowledge.<sup>18</sup> The mother's education also influences dietary behavior through an increased awareness of chronic disease risk, greater nutrition knowledge and skills.<sup>14,18</sup>

Migration may be another important sociodemographic component effecting food behavior. When people migrate; dietary changes occur by substitution, addition and modification of food habits. However the findings of this study on meal skipping patterns, did not show any difference between the adolescents who have lived in Izmir for more than ten years compared with those who have lived for ten years or less. It may be due to the fact that young immigrants change more readily and adapt to their new environment with the homogenizing effects of youth culture.<sup>15</sup>

Laaksonen and colleagues found that among the behavioral factors, smoking, unhealthy diet and relative body weight are the most important factors in explaining occupational class differences in health. These contribute to socioeconomic inequalities in health. However, health behaviors are embedded in material conditions and this should be taken into account when targeting individual behaviors.<sup>30</sup> But in the adolescent period; because of the homogenizing effects of school experiences, youth culture, the different aspects of health or illness, that social class gradients might not show.<sup>28</sup> Socioeconomic differences appear to be less pronounced in adolescence than in other periods of life.<sup>31</sup> In Johansen's study<sup>31</sup> no consistent pattern between socioeconomic status and the included health behavior variables (in which among the six indicators one of them was eating breakfast regularly) is found. In the World Health Organization Study of Health Behavior in School Aged Children, no relation between social class and risky behaviors is presented.<sup>28</sup> In this study, more than half of the students' fathers are wage laborers and with regard to meal skipping, no differences were found between the students whose fathers are owners and those whose fathers are wage laborers. The effect of social class on meal skipping has not been shown, which is parallel to the findings of the preceding studies.

In Turkey, 25.3% of women are in the workforce.<sup>32</sup> In this study, one third of mothers are working and the mother's employment has an impact on meal skipping. Students, with mothers who work, skip meals less than those with mother who do not work. Although Siega-Riz's<sup>25</sup> study reports that maternal employment is not associated with meal pattern, the findings of this study is similar to a study by Johansen et al. which shows that the adolescents of unemployed mothers have a significantly higher risk of not eating breakfast every day than those of employed mothers.<sup>31</sup>

## CONCLUSION

Understanding the factors that influence food choice and unhealthy eating habits is of great importance for the development of relevant intervention programs and policies.<sup>8</sup> Promoting healthy eating and lifestyles among adolescents is critical to change the rapid progression of obesity and other nutrition-related chronic disease risks. Pressing research is needed to document the nutritional habits of adolescents and the social determinants that influence this. The results will provide important evidence to support opportunities to positively influence the adoption of healthful eating.

## AUTHOR DISCLOSURES

Meral Turk Soyer, Isil Ergin and Safak Taner Gursoy, no conflicts of interest.

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## Original Article

## Effects of social determinants on food choice and skipping meals among Turkish adolescents

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### 土耳其青少年中社會因子對食物選擇及略餐的影響

目的：以收集的資料呈現影響青少年食物選擇及略餐的因子。方法：在 Bornova 選出幾間高中執行此橫斷性研究。從 2410 名一年級的高中學生中隨機選取 537 名為研究對象。自填式的問卷包含社會人口學變項、自述體重及身高、食物選擇及餐點模式。發現：“食物的味道及感官感覺”是影響幾乎所有學生選擇食物的首要精神社會因子。第二個顯著的因子是“食物的健康與營養價值”。準備食物節省的時間與便利性則是影響一半以上的學生的生活型態因子。食物的價格也具有影響。在第三組媒體因子中，廣告是首要的因素，影響三分之一的學生。在略餐不食的型態上，男孩與女孩沒有統計顯著差異。生活在 Izmir 超過十年者比起少於十年者，居於核心家庭或大家庭，屬於“老闆”階層或“勞工”階層在跳餐方面都沒有統計上的差異。然而，母親及父親的教育程度和母親在外工作與跳餐有關。結論：這些結果提供了重要的證據，說明哪些因子對接受健康飲食有正面影響。

**關鍵字：**青少年、食物選擇、略餐、餐食模式、社會決定因子。