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SOCIO-DEMOGRAPHIC DETERMINANTS OF FAST FOOD EATING AMONG THE STUDENTS OF THE UNIVERSITY OF WARMIA AND MAZURY IN OLSZTYN

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K e y w o r d s: fast food, eating, students.

A b s t r a c t

The research showed that about 22% of participants ate fast food at least once a week and 73% consumed it occasionally. More men than women were frequent fast food eaters while opposite relationship was observed among occasional consumers. Almost third of respondents used this food because they didn't have time to prepare meals themselves. The large group (24.3%) admitted that they like the taste of fast foods. Price was the most often indicated factor that determined the choice of fast food. The most often purchased food was pizza closely followed by toasted baguette with vegetables/meat/cheese. Majority of participants expressed an opinion that fast food consumption is unfavourable for health.

CZYNNIKI SOCJODEMOGRAFICZNE WPŁYWAJĄCE NA SPOŻYCIE ŻYWNOŚCI TYPU FAST-FOOD PRZEZ STUDENTÓW UNIWERSYTETU WARMIŃSKO-MAZURSKIEGO W OLSZTYNIE

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S ł o w a k l u c z o w e: żywność typu fast-food, spożycie, studenci.

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Abstrakt

W badaniach wykazano, że około 22% ankietowanych jadało żywność typu fast-food przynajmniej raz w tygodniu, a 73% sięgało po nią okazjonalnie. Więcej mężczyzn niż kobiet spożywało taką żywność często, podczas gdy odwrotną zależność odnotowano wśród konsumentów jadających ją okazjonalnie. Prawie jedna trzecia respondentów korzystała z takiej żywności ze względu na brak czasu na samodzielne przygotowanie posiłku. Znacząca grupa ankietowanych (24,3%) przyznała, że lubi smak żywności typu fast-food. Najczęściej wskazywanym czynnikiem wpływającym na wybór żywności fast-food była cena. Najczęściej kupowanym produktem była pizza, a następnie zapiekanka. Większość badanych wyraziła opinię, że spożywanie żywności typu fast-food jest niekorzystne dla zdrowia.

Introduction

Eating out is not a common practice in Poland and in most of Polish families main meal is prepared at home. The research conducted in 2005 in central Poland demonstrated that only in 27.8% of investigated families at least one person had a meal out of home (JEŻEWSKA-ZYCHOWICZ and KOSICKA 2007). According to other research about 45% of Polish adults were food service users (KWIATKOWSKA 2007). In the United States 77% of meals eaten out were originated from fast food restaurants (GLAZER 2008). This type of food owes its popularity to the attractive flavour, quickness of preparation, reasonable prices and convenient locations of restaurants (BOWMAN and VINYARD 2004).

At the beginning, fast food producers were appreciated for creation tasty, inexpensive and simultaneously convenient food. Today, this type of products is perceived as unfavourable for health, deficient in nutrients and causing nutritional deficits in humans in a long term (STAUFFER 2003). According to the numerous authors (FRENCH 2003, LEDIKWE et al. 2005, JACOBS 2006) fast food eating can be the reason for nutritional irregularities, which can intensify and cause diet-related diseases such as obesity and type 2 diabetes, and also may have a detrimental effect on depression risk (SÁNCHEZ-VILLEGAS et al. 2012). It was found that consumers who reported eating fast food had higher intakes of energy, total fat, saturated fat, carbohydrate, protein and added sugars, and lower intakes of nutritious foods such as fruits and fluid milk than their counterparts who did not eat fast food (BOWMAN and VINYARD 2004). On the other hand, there is an opinion that fast foods may be a characteristic attribute of today's busy life and it is possible to find more healthy alternatives in this food sector (DAVIES and SMITH 2004). As the example the authors presented chicken salad sandwich. This product contains foods from three groups, namely: bread, other cereal and potato; meat, fish and alternatives; fruit and vegetables, and according to the label it makes an important contribution to protein and fibre intake. The authors suggested that if low fat spread and low fat mayonnaise were used and no salt was added this product

could be further improved. Recently, several fast food providers have reconsidered the recipes of their products and size of portions, and offered tools to control nutrients intake (SCHRÖDER and MCEACHERN 2005).

The group of people who are especially prone to the use of fast food are students as they usually live out of their place of permanent residence and therefore have to organize their meals themselves. Fast food restaurants are often conveniently located on or near campuses (KNUTSON 2000).

The objective of the present study was to analyze the impact of socio-demographic features such as gender, place of origin, financial situation of the family, self-perceived health status and physical activity on the fast food eating among the university students.

Methods

Participants

The research was conducted in 2009 on a group of 400 students at the University of Warmia and Mazury in Olsztyn, Poland. Potential participants in the study were approached at students' canteen and other university buildings and informed about the aim of the study. Those willing to take part in the research were handed the questionnaire for self completing. The questionnaires were collected directly after completing. The research group consisted of 69% women and 31% men. They originated from villages (44.8%), small towns below 25,000 inhabitants (21.1%), big towns of 25,000–100,000 inhabitants (25.0%) and cities of more than 100,000 inhabitants (9.1%). About half of them reported a good financial situation of their family (51.0%), whereas 42.5% declared fairly good, 4.4% very good and 2.1% bad financial situation. Participants were also asked to assess their health status – 56.5% marked good health status, 24.0% – fairly good, 18.8% – very good and 0.7% – bad health status. Most of them (62.5%) declared sporadic physical activity, 18.5% reported exercising 2-3 times a week, 15.6% pointed no physical activity and 3.4% declared everyday intensive physical activity.

Questionnaire

As a research tool a questionnaire was developed on the basis of literature review and discussions with students on their eating habits. The questionnaire consisted of the items concerning frequency of fast food eating (everyday/almost everyday, 3–5 times a week, 1–2 times a week, 1–2 times a month,

less than once a month, never), main reason for its eating (lack of time for preparing meal, influence of media, good taste, low price, don't like cooking, don't like canteen food, don't like canteen atmosphere, other), main factor influencing the choice of particular food (size of portion, price, quality of food, speed of service, nutritive value of food, other), fast food eaten most often (french fries, toasted baguette with vegetables/meat/cheese, french fries + hamburger, french fries + chicken, pizza, hamburger in bun, chicken, salad, other), and students' opinion on the fast food impact on health (favourable, neutral, unfavourable, no opinion). Respondents were asked to mark only one answer for each question.

Data analysis

The quantitative data collected in the survey were analysed using STATISTICA v.9. software package (StatSoft Inc., USA) in order to generate the relevant tabulations and conduct statistical tests. The analyses of data consisted of frequency distributions evaluation with chi-square statistics and p-values below 0.05 were considered significant.

Results and Discussion

Frequency of fast food eating

The research showed that about 22% of participants ate fast food at least once a week, and in further analysis they will be called frequent consumers (Table 1). The next 73% of students consumed this type of food no more than 1–2 times a month and can be described as occasional fast food eaters while almost 5% did not eat fast food at all.

The frequency of fast food eating was significantly affected by gender ($p<0.001$). More men than women were frequent fast food eaters (36.3% men vs. 16.0% women), while opposite relationship was observed among occasional consumers. The percentages of non-eaters were similar for men and women. Place of permanent residence did not affect significantly the frequency of fast food consumption by students. Nevertheless, respondents originated from villages and small towns were less frequent fast food users as 19.2 and 21.0% of them, respectively, reported eating at least once a week in comparison with 31.3% and 25.7% of frequent users in groups originated from big towns and cities, respectively. Although statistical analysis did not reveal a significant relationship between financial situation of respondents, their health status

Table 1

Frequency of fast food eating

Feature	Respondents [%]						*p*-value
	frequency of fast food eating						
	everyday/almost everyday	3–5 times a week	1–2 times a week	1–2 times a month	Less than once a month	never	
Total sample	1.0	3.5	17.7	36.8	36.2	4.8	
Gender							0.000
men	2.5	4.8	29.0	37.1	21.8	4.8	
women	0.4	2.9	12.7	36.6	42.7	4.7	
Place of permanent residence							
village	0.6	2.3	16.3	38.9	41.3	0.6	
town <25,000	0.0	4.9	16.1	37.1	40.7	1.2	0.537
town 25,000–100,000	3.1	4.2	24.0	39.6	28.1	1.0	
city >100,000	0.0	5.7	20.0	34.3	40.0	0.0	
Financial situation							
very good	5.9	0.0	47.1	23.5	23.5	0.0	
good	0.0	2.6	18.9	40.3	37.2	1.0	0.153
fairly good	1.8	5.5	15.4	37.4	39.3	0.6	
bad	0.0	0.0	12.5	37.5	50.0	0.0	
Health status							
very good	4.2	2.8	25.0	34.7	33.3	0.0	
good	0.0	2.3	17.5	39.2	39.6	1.4	0.059
fairly good	1.1	6.5	16.3	40.2	35.9	0.0	
bad	0.0	33.3	0.0	0.0	66.7	0.0	
Physical activity							
everyday intensive	0.0	7.7	7.7	53.8	30.8	0.0	
2–3 times a week	1.4	4.2	15.5	36.6	40.9	1.4	0.389
sporadic	0.0	3.3	20.9	38.3	36.7	0.8	
no activity	5.0	3.3	15.0	36.7	40.0	0.0	

and physical activity, and frequency of fast food consumption, generally the better economic situation of participants was, the higher percentage of them reported frequent use of such food and the highest percentages of frequent fast food consumers were found in those groups of respondents who reported very good or bad health status. When physical activity of students is taken into consideration it could be suggested that those who practice intensive physical activity everyday pay more attention to healthy eating as 15.4% of them ate fast food 1–2 or 3–5 times a week (there were no everyday eaters among them) in comparison with 21.1–24.2% of frequent users in other groups.

The present study has shown that investigated students consumed fast food less frequently than their counterparts in other countries. The research conducted at the Michigan State University, USA, showed that among fast food eaters 40.4% ate at fast food restaurant three to four times a week. One third of the sample went there less frequently, while 25.8% ate there at least five times a week (KNUTSON 2000). Among Turkish students 60% ate fast foods at least once a week, with 8.4% consuming such food everyday (YARDIMCI et al. 2012). The vast majority of investigated Cyprus students (85.7%) have a dining experience once every two weeks (ZOPIATIS and PRIBIC 2007). Other studies carried out in Poland demonstrated that among the secondary school youth most of them consumed fast food once or twice a week (KOŚMIDER and GRONOWSKA-SENGER 2005). In the group of candidates to the Air Force College, 68.6% of respondents reported consumption of fast food, with about 30% of them eating such food at least once a week (GAŹDZIŃSKA et al. 2007).

Main reason for fast food eating

In the present study almost third of total sample answered that they use this type of food because they don't have time to prepare meals themselves (Table 2). The large group (24.3%) admitted that they like the taste of fast food and for 18.3% the main reason for fast food eating was its relatively low price.

The main reason for fast food consumption was not significantly affected by any of the socio-demographic features of students' however some differences can be reported. Higher percentages of women than men indicated "lack of time", "influence of media" and "it's tasty", whereas other reasons were more often selected by men. Almost a third of respondents originated from the cities marked "it's tasty" as a main reason for selecting fast foods as their meals, while among students living for permanent in other places it was "lack of time". When the financial situation was considered it was found that the better it was the higher percentage of participants reported "lack of time" and the lower percentage "it's tasty" as the most important reason for using fast food.

Table 2

Main reason for fast food eating

Feature	Respondents [%]								p-value
	reason for fast food eating								
	lack of time	influence of the media	taste	low price	don't like cooking	don't like canteen food	don't like canteen atmosphere	other	
Total sample	27.2	7.8	4.3	8.3	10.9	4.1	3.3	4.1	
Gender									0.398
men	24.7	4.6	21.8	20.1	13.8	6.9	3.5	4.6	
women	28.3	9.0	25.2	17.6	9.7	3.0	3.2	4.0	
Place of permanent residence									
village	30.0	7.1	24.5	15.7	11.3	2.5	2.3	6.6	
town <25,000	32.5	7.1	23.0	16.0	7.1	3.6	1.2	9.5	0.267
town 25,000–100,000	31.6	9.6	22.9	14.7	7.8	6.0	3.2	4.1	
city >100,000	26.9	6.4	29.5	11.5	10.3	2.6	2.6	10.3	
Financial situation									
very good	35.0	5.0	20.0	12.5	5.0	10.0	5.0	7.5	
good	32.0	7.9	24.4	14.6	9.0	2.8	2.1	7.2	0.241
fairly good	28.7	8.0	24.5	16.2	10.9	3.7	2.4	5.6	
bad	28.6	0.0	28.6	7.1	0.0	7.1	0.0	28.6	
Health status									
very good	31.5	6.9	23.9	13.2	10.0	6.3	5.7	2.5	
good	30.4	7.3	25.6	15.6	8.1	6.9	3.5	2.6	0.582
fairly good	30.7	8.9	21.3	15.3	12.4	7.4	2.5	1.5	
bad	28.6	14.3	28.6	14.3	14.3	0.0	0.0	0.0	
Physical activity									
everyday intensive	29.2	4.2	25.0	8.3	12.5	4.2	0.0	16.6	
2–3 times a week	31.1	5.4	25.8	16.2	10.2	2.4	2.4	6.5	0.551
sporadic	31.6	8.4	23.6	15.2	8.2	3.4	2.5	7.1	
no activity	27.1	8.3	25.0	14.6	13.2	5.6	2.1	4.1	

Only slightly less respondents who indicated no physical activity compared to more sporty respondents pointed out "lack of time" as their main reason for fast food eating.

It is slightly disturbing that quite considerable percentages of participants did not like eating in students canteen (did not like canteen food or canteen atmosphere), however it is conveniently situated in the central part of campus and offers a choice of full meals at reasonable prices. One can speculate that if the improvement in food quality and eating environment could take place to better suit the young people tastes there would be a chance to attract those students who eat fast food from the necessity and not because they really like it.

The results of the present study are in line with findings of other surveys. The research on the influence of age and gender on food choice revealed that women aged 18–30 were of the opinion that it was easier to prepare meals from ready-to-eat products and that fresh food was expensive (CHAMBERS et al. 2008). Women aged 31–59 found the temptation of unhealthy foods difficult to resist and lack of time made eating healthily more difficult. Women over 60 admitted that they thought unhealthy food tasted good and was, therefore, hard to resist. Men aged 18–30 found that lack of time and the convenience of unhealthy foods determined their eating habits. Lack of time was also crucial to men aged 31–59. Men over 60 said that they found it easy to eat healthily because of self-control and common sense.

Main determinant of fast food choice

None of the students features significantly affected determinants of fast food choice (Table 3). Regardless of a respondents' gender, price of food was the most often indicated factor. For men, the next important determinant of choice was size of portion, while for women, that was quality of food. Less than 5% participants were interested in nutritive value of fast foods.

In the groups of students who originated from villages, small towns and cities, the highest percentages indicated that quality of food plays a decisive role in their fast food choice, while among big towns inhabitants price of fast food was the most important factor. Price was also indicated by the highest percentage of respondents who evaluated their financial situation as fairly good. In other economic groups quality of food was marked most often. The worse health status was reported by respondents the more of them stated that size of portion influences their choice of fast food most. Among students characterized by a very good health status quality of food was the most important determinant of choice. Quality of food and speed of service were

Table 3

Main determinant of fast food choice

Feature	Respondents [%]						*p*-value
	determinant of fast food choice						
	size of portion	price	quality of food	speed of service	nutritive value of food	other	
Total sample	22.9	28.5	25.5	18.9	4.1	0.1	
Gender							0.472
men	25.0	29.6	22.5	19.2	3.3	0.4	
women	21.9	27.9	26.9	18.8	4.5	0.0	
Place of permanent residence							
village	20.4	23.9	26.5	24.2	4.1	0.5	
town <25,000	22.1	26.7	28.7	19.0	3.0	0.5	0.676
town 25,000100,000	20.8	30.4	25.8	19.2	3.8	0.0	
city >100,000	24.1	21.7	27.7	24.1	2.4	0.0	
Financial situation							
very good	18.6	23.3	32.6	20.9	4.6	0.0	
good	21.5	23.9	25.4	23.9	4.9	0.4	0.266
fairly good	21.1	28.7	27.9	19.4	2.7	0.2	
bad	20.0	25.0	30.0	25.0	0.0	0.0	
Health status							
very good	20.7	25.4	27.7	22.1	3.7	0.4	
good	21.0	22.2	25.6	25.6	5.0	0.6	0.325
fairly good	21.7	30.1	26.1	19.0	3.1	0.0	
bad	42.8	28.6	28.6	0.0	0.0	0.0	
Physical activity							
everyday intensive	24.0	16.0	24.0	28.0	8.0	0.0	
2–3 times a week	20.6	24.5	27.2	23.3	4.4	0.0	0.544
sporadic	21.5	26.5	26.5	21.5	3.5	0.5	
no activity	20.0	27.3	28.7	20.7	3.3	0.0	

equally important for participants declaring good health status, while in the group of fairly good health status it was price of food. Those participants who were involved in everyday intensive physical activity paid more attention to speed of service than students in other groups, where quality of food played the most important role in food choice.

The investigation of the attitudes of Swedish high-school students toward fast food eating showed that respondents were aware of the good and bad attributes of fast food, such as speed, convenience, fat and sugar. Female students viewed fast food in a broad food chain context, whereas male students concentrated on fast eating and satiety (MATTSSON and HELMERSSON 2007). In the case of undergraduate students from English and Scottish universities the motivations for purchasing fast foods were predominantly speed and convenience, flavour, value for money, and quality of ingredients (SCHRÖDER and MCEACHERN 2005). Importance of price, speed of service, consistency, convenient location and health concerns as main determinants for fast food choices were also reported by other researchers (KNUTSON 2000, BETTS et al. 1995). Additionally, it was determined that women were influenced more by factors such as speed of service, quality of menu items, feeling of safety and security and employees' professionalism compared to men (ZOPIATIS and PRIBIC 2007).

Most often chosen fast food

The type of food chosen most often by the respondents was significantly affected ($p<0.01$) only by gender of students (Table 4). Generally, the most often purchased fast food was pizza (29.8%) closely followed by toasted baguette with vegetables/meat/cheese. One can presume that when the meal was consumed in the restaurant or it was home-delivered, pizza was selected most often, but when the respondent was in hurry he/she chose toasted baguette and ate it in the street without stopping for the proper meal. More men than women preferred toasted baguette, hamburger in bun and chicken, while women more often than men purchased french fries, french fries + hamburger, french fries + chicken, pizza, and salad. It is also worth noting that a low percentage (2.6%) of participants selected french fries + chicken which could be treated as a full meal, especially when some salad or fruit was added. About 2% of respondents chose the healthy option of fast food, namely salads.

Permanent residents of villages and cities most often selected toasted baguette, whereas in groups of small and big towns residents pizza was the most popular fast food. When the financial situation of students is considered, it is observed that in the group of fairly good situation the highest percentage

Table 4

Most often chosen fast food

Feature	Respondents [%] fast food									p-value
	french fries	toasted baguette with vegs/meat/ /cheese	french fries + hamburger	french fries + chicken	pizza	hamburger (in bun)	chicken	salad	other	
Total sample	10.0	29.1	4.7	2.6	29.8	12.9	0.3	2.1	8.7	
Gender										0.004
men	5.1	40.7	3.4	1.7	24.6	17.0	0.8	0.8	5.9	
women	12.2	24.0	5.3	3.0	31.9	11.0	0.0	2.7	9.9	
Place of permanent residence										
village	8.8	35.0	4.1	1.2	28.1	12.3	0.5	1.8	8.2	
town <25,000	10.0	21.2	2.5	6.3	31.2	13.8	0.0	3.8	11.2	0.624
town 25,000–100,000	13.7	25.3	6.3	1.1	32.5	12.6	0.0	1.1	7.4	
city >100,000	5.7	28.6	8.6	5.7	25.7	14.3	0.0	2.9	8.6	
Financial situation										
very good	0.0	17.6	23.5	5.9	35.3	5.9	0.0	0.0	11.8	
good	9.3	26.3	5.2	3.1	33.0	13.9	0.0	2.6	6.6	0.156
fairly good	11.7	34.6	2.5	1.9	24.1	12.3	0.6	1.9	10.4	
bad	12.5	12.5	0.0	0.0	50.0	12.5	0.0	0.0	12.5	
Health status										
very good	2.8	26.4	9.7	1.4	33.3	18.1	0.0	2.8	5.5	
good	10.7	29.9	3.3	2.3	32.3	10.7	0.0	1.9	9.0	0.165
fairly good	13.0	30.4	3.3	4.3	20.7	14.1	1.1	2.2	10.9	
bad	33.3	0.0	33.3	0.0	33.3	0.0	0.0	0.0	0.0	
Physical activity										
everyday intensive	7.7	30.8	0.0	0.0	46.1	0.0	0.0	7.7	7.7	
2–3 times a week	7.2	31.4	4.3	4.3	34.3	11.4	1.4	1.4	4.3	0.809
sporadic	10.9	29.4	5.5	2.1	26.9	13.5	0.0	2.1	9.6	
no activity	10.0	25.0	3.3	3.3	31.7	15.0	0.0	1.7	10.0	

of respondents indicated toasted baguette as the most often selected fast food, while in other economic groups it was pizza. Pizza was also the most popular fast food among those participants who evaluated their health status as very good and good. Among students who reported bad health status the indications were evenly distributed between french fries, french fries + hamburger and pizza. The analysis of physical activity effect on the most often chosen fast food showed that the higher percentage of respondents involved in everyday intensive physical activity selected salads (7.7%) than in other groups (1.4–2.1) and none of the students in this group indicated purchasing hamburgers or chicken alone or in combination with french fries. These results seem to confirm earlier observations that this group of consumers is more health conscious than other groups.

Other studies show that women were more likely to consume foods in line with dietary guidelines (BOGUE et al. 2005). They also observed that respondents over 35 were the most concerned about their health, and additionally respondents aged 35–54 were more knowledgeable about dietary issues than younger and older respondents. It was also reported that younger respondents were less likely to report that "trying to eat a healthy diet" was imported to them (KEARNEY et al. 2000).

Opinion on the fast food influence on health

The vast majority of respondents (87.4% of total sample) expressed an opinion that fast food is unfavourable for health (Table 5). More men than women were of opinion about neutral effect of this type of food on health. The highest percentage of "unfavourable influence" opinions was found among big town inhabitants, however in this group the only "favourable influence" opinions were also observed. The percentage of "unfavourable influence" opinions increased gradually from 80.6% in the group of very good health status to 100% in the group of bad health status. Nevertheless, the statistical analysis demonstrated that only physical activity of participants affected significantly ($p<0.05$) their opinions on the fast food influence on health. More respondents expressed a "neutral influence" opinion in the group of everyday physical activity students than in other groups and additionally the lowest percentage of "unfavourable influence" opinions was observed in this group. All respondents who indicated the "favourable influence" opinion simultaneously reported no physical activity.

The awareness of food "healthiness" was observed by KNUTSON (2000) who found that about 60% of college students indicated the same fast food restaurant as a source of highest nutrition quality and best for vegetarians foods.

Table 5

Students' opinion on the fast food influence on health

Feature	Respondents [%]				p-value
	fast food influence on health				
	favourable	neutral	unfavourable	no opinion	
Total sample	0.3	10.2	87.4	2.1	
Gender					0.084
men	0.0	15.3	81.4	3.3	
women	0.4	8.0	90.1	1.5	
Place of permanent residence					
village	0.0	12.3	86.5	1.2	
town <25,000	0.0	10.0	85.0	5.0	0.349
town 25,000–100,000	1.1	6.3	90.5	2.1	
city >100,000	0.0	11.4	88.6	0.0	
Financial situation					
very good	0.0	17.6	70.6	11.8	0.067
good	0.0	10.3	88.7	1.0	
fairly good	0.6	9.3	88.3	1.9	
bad	0.0	12.5	75.0	12.5	
Health status					
very good	1.4	13.9	80.6	4.2	
good	0.0	10.3	87.9	1.9	0.456
fairly good	0.0	7.6	91.3	1.1	
bad	0.0	0.0	100.0	0.0	
Physical activity					
everyday intensive	0.0	23.1	69.2	7.7	
2–3 times a week	0.0	15.7	80.0	4.3	0.029
sporadic	0.0	6.7	92.4	0.8	
no opinion	1.7	15.0	80.0	3.3	

Conclusions

The results of the study show that fast foods eating among the investigated students' group is generally kept at the moderate and reasonable level as a vast majority of them eat it only occasionally. Respondents' gender had a significant impact on the frequency of fast food eating and most often chosen fast food, while physical activity significantly affected students' opinion on the fast food influence on health. Financial situation and health status did not show significant effect on any of the analyzed phenomena.

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