Original Article

Breakfast Skipping and Associated Factors Among Jordanian University Students

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Abstract

Background: Although breakfast skipping among university students is a significant concern, its prevalence and the contributing factors among university students have received little attention in the literature. This study aims to determine the prevalence of skipping breakfast among Jordanian university students and examine the associated factors and variations in rates of skipping breakfast by day of the week. **Materials and Methods:** A cross-sectional study was conducted among undergraduate students between March and May 2022 through a self-questionnaire. A convenience sample of 891 students was chosen at four Jordanian public universities. The data were analyzed using descriptive and inferential statistics. **Results:** The prevalence of skipping breakfast among university students was 66%. The reasons for skipping breakfast were having no time due to oversleeping and having no feeling of hunger (59% for both), followed by having no energy to prepare the breakfast and making no difference (49% and 48%), and not being able to afford to eat or buy breakfast (19%). There is a strong correlation between eating fast food and skipping breakfast. With whom the student eats breakfast is significantly associated with breakfast skipping, revealing that the highest percentages of skipping occur with friends. About 63% of students skipped breakfast through university days compared with 37% on the weekend, while 37% of them had breakfast through university days compared with 67% on the weekend. **Conclusions:** A high percentage of university students in Jordan skip breakfast. More attention should be paid to correlating factors and developing interventions to help students adhere to the breakfast.

Keywords: *Breakfast, cross-sectional studies, prevalence, students*

Introduction

Breakfast is the most significant meal of the day and is defined as any meal between 6 and 9 in the morning.[1] Eating between the beginning of the day and 2 hours after waking up helps meet the body's daily nutritional demands, maintain a healthy weight, enhance academic performance, activate the metabolism, boost mood, and protect against malnutrition problems.[2] In addition, regular breakfast consumption lowers the risk of chronic illness, insulin resistance, and metabolic syndrome and plays a significant role in dietary regulation and maintaining energy balance.[3,4]

Previous studies showed an elevated prevalence of breakfast skipping across age groups.[1,5] In the transition stage from school life, behavioral and psychological changes occur, including breakfast consumption, which can be translated into unhealthy behaviors such as skipping breakfast.[6] Research findings indicate that breakfast skipping is associated with diabetes mellitus, insulin insensitivity, elevated body mass index, body storage fat, cardiometabolic disease, hypertension, high systolic blood pressure, and mortality.[7,8] Also, it is correlated with poor mental health, including depressive mood, stress, being mentally distressed, poor sleep, nocturnal sleeping problems, and developing suicidal behavior and substance use such as smoking and alcohol.[3,9] Evidence regarding the prevalence of breakfast skipping among university students varies. For example, breakfast skipping in Bahrain was 50%, whereas in Turkey, it was 47.7%.[6] More than 50% of adults in the United States have

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inadequate breakfast patterns, including 33% of females and 24% of males.[10] In Saudi Arabia, the prevalence of breakfast skipping is comparatively high among Saudi young males.[11] Among children and adolescents from 33 countries, a recent comprehensive study found that on average, between 10% and 30% of young people skipped breakfast.[8] Young people between 18 and 25 years of age are often neglected. Thus, their dietary habits tend to decline when they leave home and go to college, where they have to be independent. Also, they have the habit of breakfast skipping and consuming fast foods.[12] There are different reasons for students' breakfast skipping. For example, the students lacked time to eat, had no interest in eating early, experienced a lack of appetite and did not feel hungry, desired to lose weight, lacked something to eat, and were no longer living with their parents, who used to prepare them breakfast.[5,7,12] In addition, students who smoked, lived in rented places or lived alone, were physically inactive, had separated parents, and were stressed were found to be associated with eating patterns.[13]

According to previous studies, the prevalence of breakfast skipping was associated with gender, age, household type, marital status, educational level, parents' educational levels, race, accommodation, academic performance, skipping dinner, consumption of fast food, consumption of vegetables and fruits, smoking, sleep quality, places the students resided, and monthly income.[4,7,12,14,15] Also, environmental factors such as mushrooming shopping malls, convenience stores, vending machines, and fast-food outlets and encouraging unhealthy eating practices contribute to breakfast skipping.[16] Psychological factors such as mental health status play a crucial role in students' skipping breakfast.[6] Mental health includes how stressed one is, depressed mood, low happiness scores, suicidal behaviors, short sleeping patterns, nocturnal sleeping problems, and poor sleeping quality.[6] Depression, loneliness, short or long sleep or sleep problems, restless sleeping, and lack of sleep due to traumatic events also contributed significantly to students' skipping breakfast.[6] Physical inactivity and sedentary behavior were also reported to be associated with breakfast skipping.[6]

Breakfast skipping is a critical negative indicator of the health of the body and is prevalent among university students.[4] There is a shortage of studies on the prevalence and reasons for students' skipping breakfast among university students in Jordan. This study aims to assess the prevalence of breakfast skipping and the associated factors among Jordanian university students.

Materials and Methods

A cross-sectional design was used to carry out the present study between March and May 2022. For this study, the target population is all students at Jordanian public universities. Al al-Bayt University was included as the sponsoring university, along with Yarmouk University in the northern region, Hashemite University in the central region, and Mutah University in the southern region. These universities include scientific, medical, and humanities faculties and offer bachelor's and master's programs.

To select the study's participants, the stratification technique was employed. The universities were categorized into colleges (strata). Then, students were grouped according to their majors. After that, random sampling was performed in each faculty. Then came the second stage, where the convenience sampling technique was used to recruit participants. The sample size was estimated using Slovin's formulas.[17] Based on a margin of error of 5%, a confidence level at 95%, a population size of 35,64, a response distribution at 50%, and the estimated measurement, the appropriate sample size was 891. The eligibility criteria were being a Jordanian student enrolled in the selected universities for the second semester of 2021–2022. The exclusion criteria included non-Jordanian students.

A self-reported questionnaire was used to collect the data between March and May 2022. The questionnaire was designed based on the literature review.[4,5,18] To enhance the instrument's validity, it was reviewed by a panel of three experts and pilot-tested for accuracy and consistency. Primarily, an initial draft of the questionnaire was built. Then, the initial version was sent to other research members for feedback and to determine its content validity, and it was modified to be ready for a pilot phase. The pilot study was conducted with 40 participants from other universities to determine the content validity of the questionnaire from the recipients' point of view, identify the time needed to answer it and any anticipated problems in the time needed for data collection, and determine the suitability of the items in the questionnaire. This step enabled the author to evaluate and ensure the clarity and familiarity of the questionnaire's words and phrases from the participants' perspectives. Their comments revealed that the items were clear, comprehensive, suitable, and easy to complete.

The questionnaire was divided into three sections: The socio-demographic section included questions on the participant's age, gender, weight, height, university, faculty, academic year, living with, area of living, family income, religion, and work status and education level of the mothers and fathers. In the breakfast patterns and characteristics section, data on the patterns and characteristics of breakfast consumption were collected. This section included 18 questions, such as the following: How many days did you eat breakfast the past week? Who prepares your breakfast most of the time? How many meals do you usually eat per day? Do you eat vegetables, eat fruit, skip lunch and dinner, eat fast food, smoke, and exercise physically? In addition, general information included how often the students ate breakfast, what foods made up their breakfast, and when they would have breakfast. The third section, the reasons for breakfast skipping section, included 12 questions related to the reasons behind breakfast skipping.

At first, we visited every university to confirm that the deans of the individual faculties and departments had given their consent for us to gather data. Data were gathered by handing out face-to-face and online self-reporting questionnaires that were based on similar questions from previously published works and created using Google Forms. It was launched via the "G-mail Google" technology, and the link to a Google form was distributed to every WhatsApp group set up by four colleges for their students. Before distribution, this survey link underwent usability and technical functioning testing with 40 students who met the requirements for study participants. The results of this pilot testing were not used in the study's final report. All the items were marked as mandatory; therefore, all submitted forms were complete, and the participant had 15 minutes to complete the questionnaires. Further, each participant had one chance to submit the survey, and a second try was automatically denied.

The study utilized the Statistical Package for Social Sciences (SPSS) version 28 (SPSS Inc., Chicago, IL, USA). Percentage and frequency were calculated to express the categorical data. A Chi-square test was used to assess the association between demographic variables and skipping breakfast. The p value of <0.05 was considered the level of significance.

Ethical considerations

The institutional research committee at the faculty of nursing at Al al-Bayt University approved the study (23/144/2022, 15.1.2022). The permissions to conduct the study were obtained from the selected universities. The study fully complied with the participant's right to confidentiality. Before signing the consent form, participants had to acknowledge that they fully understood the study's purpose. No coercion was applied to force the participants to sign the form. To maintain the confidentiality, data were encrypted before storage.

Results

A total of 891 university students were enrolled in the study. The distribution of gender and universities was almost equal in the study sample [Table 1]. However, the majority of students (30.90%) were in their first year of education, with more than half of the sample (57.70%) being from scientific or health science colleges, and 41.20% of the students were in the age group of 20–21 years old. Most of them reported living with their parents (85.30%), living in urban areas (69.40%), and claiming that they have sufficient monthly income to meet their basic family needs (58.80%). Furthermore, around 72.70% of their mothers work as housekeepers, and 52.20% of their fathers work full time. Additionally, 46.40% of students' mothers and 42.60% of students' fathers had a university degree.

Three-quarters of the students reported being non-smokers. More than half of the sample (57.90%) did not practice exercise, 62.10% had a normal BMI, and 84% of the participants did not have any disease. Moreover, 682 students (76.50%) stated that they eat fast food. A total 591 students (66.33%) skipped their breakfast meal [Table 1].

As shown in Table 2, having no time due to oversleeping and having no feeling of hunger accounted for the exact percentages of (58.98% vs 58.75%) cases, respectively. Additionally, having no energy to prepare breakfast makes no difference in my day and is accounted for in the exact percentages of cases too (48.82% vs 48.46%). While I cannot afford to eat or buy breakfast, this has accounted for a minor percentage (19.27%).

Eighteen socio-demographic variables were tested using the Chi-square test to explore their association with breakfast skipping. The university had a statistically significant association with breakfast skipping, $X^2_3 = 8.13$, $p = 0.04$, indicating a higher percentage of skipping among students from Yarmouk University [Table 3]. Moreover, eating fast food is significantly associated with skipping breakfast, $X^2_1 = 4.46$, $p = 0.03$, reflecting that a higher proportion of those eating fast food skip breakfast (68.20%) compared to the proportion of those who did not eat fast food (60.30%). Additionally, "with whom you eat breakfast" is significantly associated with breakfast skipping, $X^2_3 = 8.20$, $p = 0.04$, reflecting that the highest percentages of skipping occur "with friends", followed by being "alone".

About 72.50% of participants eat fried potatoes, 53.42% eat sandwiches, and the minority eats vegetables (5.72%) and beans (2.81%). For beverage style, tea accounted for the highest percentage (47.92%), while soda products accounted for the most nominal rate (6.85%).

The rates of breakfast skipping were higher during university days, with Wednesdays having the highest percentage of breakfast skipping (65.40%). Moreover, the trend of skipping has remarkably declined on Fridays and Saturdays, which are the weekend days in Jordan. About 63.14% of students skipped breakfast during university days compared to 36.82% on weekend days. Only 37% of them had breakfast during university days, while on weekend days, 66.85% of them had breakfast. It can be concluded that the ratio of breakfast skipping on weekend days to university days is nearly 1:2.

Discussion

The result showed a high prevalence of breakfast skipping among university students. The high prevalence of breakfast skipping in this study is similar to previous studies.[4,12,19]. Previous research reported that lockdown is associated with inactivity and sedentary behavior.[20] Additionally, researchers found that the COVID-19 pandemic increased the sitting time among university students due to the dramatic changes in their lifestyles.[21] An interpretation is that dieting after the pandemic may occur as adults are attempting to lose weight, change dietary habits, and

Table 1: Participant's characteristics (*n*=891)

Variables	*n* (%)
Gender	
Male	447 (50.20%)
Female	444 (49.80%)
University	
Al al-Bayt	220 (224.70%)
Mutah	219 (24.60%)
The Hashemite	228 (25.60%)
Yarmouk	224 (25.10%)
Academic year	
First	275 (30.90%)
Second	227 (25%)
Third	229 (25.70%)
Fourth	132 (14.80%)
Fifth	22 (2.50%)
Sixth	6 (0.70%)
Faculty	
Life or Health Science	514 (57.70%)
Engineering	153 (17.20%)
Literary or Human Science	224 (25.10%)
Age groups	
Less than 19 years	308 (34.60%)
20–21 years	367 (41.20%)
22 and above	216 (24.20%)
Living with	
Parent	760 (85.30%)
Father only	40 (4.50%)
Mother only	12 (1.30%)
University housing	71 (8%)
Others	8 (0.90%)
Area of living	
Rural	273 (30.60%)
Urban	618 (69.40%)
Income	
Not sufficient	153 (17.20%)
Sufficient	524 (58.80%)
Sufficient and saving	214 (24%)
Work of mother	
Full time	165 (18.50%)
Part-time	78 (8.80%)
Housekeeper	648 (72.70%)
Education of mother	
Less than secondary level	141 (15.80%)
More than secondary	337 (37.80%)
University	413 (46.40%)
Work of father	
Full time	465 (52.20%)
Part-time	223 (25%)
Housekeeper	203 (22.80%)

Contd...

Table 1: Contd...

Variables	*n* (%)
Education of mother	
Less than secondary level	154 (17.30%)
More than secondary	357 (40.10%)
University	380 (42.60%)
Smoking status	
Yes	221 (24.80%)
No	670 (75.20%)
Do you practice exercise regularly?	
Yes	375 (42.10%)
No	516 (57.90%)
BMI* classification	
Underweight (BMI <19)	151 (16.90%)
Normal (BMI 19-25)	553 (62.10%)
Overweight (BMI 25-30)	161 (18.10%)
Obese (BMI >30)	26 (2.90%)
Health problems	
Yes	139 (15.60%)
No	752 (84.40%)
Eating fast foods	
Yes	682 (76.50%)
No	209 (23.50%)
With whom you eat breakfast	
Alone	292 (32.80%)
One of my family members	23826.70%)
All my family members	232 (26%)
With my friends	129 (14.50%)
Breakfast skipping	
Yes	591 (66.33%)
No	300 (33.67%)

*BMI: Body Mass Index

Table 2: Reasons for breakfast skipping among Jordanian university students

Reason	*n* (%)
No time due to oversleeping	525 (58.98)
Don't feel hungry	525 (58.75)
No energy to prepare	435 (48.82)
No difference	432 (48.46)
Reduce body weight	324 (36.41)
My friends don't eat	300 (33.69)
We don't eat it at home	248 (27.90)
I don't like types of food items	247 (27.78)
Other reasons	245 (27.54)
I don't know why eat it	233 (26.12)
I can't afford	172 (19.27)

change in their lifestyles to a sedentary lifestyle. Breakfast skipping seems beneficial for weight gain and obesity.

A study showed that three-quarters of students who ate fast food skipped breakfast, which indicates that young adults

Table 3: Association between socio-demographic characteristics and breakfast skipping

Socio-Demographic	Skipping breakfast at home		X^2	df	*p*
	Yes *n* (%)	No *n* (%)			
Gender					
Male	292 (65.30%)	155 (34.70%)	0.406	1	0.52
Female	299 (67.30%)	145 (32.70%)			
University					
Al al-Bayt	141 (64.10%)	79 (35.90%)	8.137	3	0.04
Yarmouk	162 (72.30%)	62 (27.70%)			
The Hashemite	156 (68.40%)	72 (31.60%)			
Mutah	132 (60.30%)	87 (39.70%)			
Academic year					
First	183 (66.50%)	92 (33.50%)	5	6,440	0.26
Second	162 (71.40%)	65 (28.60%)			
Third	144 (62.90%)	85 (37.10%)			
Fourth	81 (61.40%)	51 (38.60%)			
Fifth	16 (72.70%)	6 (27.30%)			
Sixth	5 (83.30%)	1 (16.70%)			
Faculty					
Life and Health Science	335 (65.20%)	179 (34.80%)	2	0,726	0.69
Engineering	104 (68%)	49 (32%)			
Literary and Human Science	152 (67.90%)	72 (32.10%)			
Age groups					
Less than 19 years	196 (63.60%)	112 (36.40%)	2	2,856	0.24
20–21 years	255 (69%)	112 (30.50%)			
22 years or older	140 (64.80%)	76 (35.20%)			
Living with					
With parent	507 (66.70%)	253 (33.305)	4	0,553	0.96
With father only	26 (65%)	14 (35%)			
With mother only	7 (58.30%)	5 (41.70%)			
University housing	46 (64.80%)	25 (35.20%)			
Others	5 (62.50%)	3 (37.50%)			
Area of living					
Rural	406 (65.70%)	212 (34.30%)	1	0,363	0.54
Urban	185 (67.80%)	88 (32.20%)			
Income					
Not sufficient	107 (69.90%)	46 (30.10%)	3	5,567	0.06
Sufficient	356 (67.90%)	168 (32.10%)			
Sufficient and saving	128 (59.80%)	86 (40.20%)			
Work of mother					
Full time	105 (63.30%)	60 (36.40%)	2	0,863	0.65
Part-time	54 (69.20%)	24 (30.80%)			
Housekeeper	432 (66.70%)	216 (33.30%)			
Education of mother					
Less than secondary level	87 (61.70%)	54 (38.30%)	2	2,327	0.31
More than secondary	221 (65.60%)	116 (34.40%)			
University	283 (68.50%)	130 (31.50%)			

Contd...

Table 3: Contd...

Socio-Demographic	Skipping breakfast at home		X^2	df	*p*
	Yes *n* (%)	No *n* (%)			
Work of father					
Full time	315 (67.70%)	150 (32.30%)	2	1,136	0.56
Part-time	147 (65.90%)	76 (34.10%)			
Housekeeper	129 (63.50%)	74 (36.50%)			
Education of father					
Less than secondary level	92 (59.70%)	62 (40.30%)	2	4,414	0.11
More than secondary	236 (66.10%)	121 (33.90%)			
University	263 (69.20%)	117 (30.80%)			
Smoking status					
Yes	147 (66.50%)	74 (33.50%)	1	0,005	0.94
No	444 (66.30%)	226 (33.70%)			
Do you practice exercise?					
Yes	242 (64.50%)	133 (35.50%)	1	0,936	0.33
No	349 (67.60%)	167 (32.40%)			
BMI classification	98 (64.90%)	53 (35.10%)			
Underweight (BMI <19)	362 (65.505)	191 (34.50%)	3	1,610	0.65
Normal (BMI 19-25)	112 (69.60%)	49 (30.40%)			
Overweight (BMI 25-30)	19 (73.10%)	7 (26.90%)			
Obese (BMI >30)					
Health problems					
Yes	90 (64.70%)	49 (35.30%)	1	0,185	0.66
No	501 (66.60%)	251 (33.40%)			
Eating fast food					
Yes	465 (68.20%)	217 (31.80%)	1	4,465	0.03
No	126 (60.30%)	83 (39.70%)			
With whom you eat breakfast					
Alone	203 (69.50%)	89 (30.50%)	3	8,203	0.04
One of family members	145 (60.90%)	93 (39.10%)			
All family members	148 (63.80%)	84 (36.20%)			
With my friends	95 (73.60%)	34 (26.40%)			

skip breakfast when they consume fast food.[12] This result was similar to the current study. It can be concluded that the likelihood of engaging in unhealthy behaviors such as sedentary lives, poor diets, poor dietary management, and an imbalance in one's energy balance increases when one does not have breakfast.[22] Also, this result could be related to the characteristics of the study sample, in which most students were in their first year of education, with more than half of the sample being from scientific and health science colleges. Furthermore, 41.2% of the students were in the age group of 20–21 years old, which could increase the prevalence of breakfast skipping.

According to Moy *et al.*,[23] young people between 18 and 25 are often neglected compared to children and adults. Thus, their dietary habits decline when they leave home and go to college, where they have to be independent.[12] On the other hand, ALBashtawy[5] showed that the prevalence rate of breakfast consumption was decreasing with age. On the contrary, the study result was inconsistent with Alkhalidy *et al.*[24] study, which revealed that 67% of university students ate breakfast daily.

The most common reason for breakfast skipping among university students was a lack of time to eat breakfast due to oversleeping. This result was consistent with ALBashtawy[5] study, which found that the students who were satisfied with their sleeping quality were more likely to have breakfast. On the other hand, those with poor-quality sleep were reported to have poor appetites. Poor sleep quality was also associated with difficulties when it was time to get up and mood swings; those with poor-quality sleep were reported to have poor appetites.[15] Although it has been discovered that breakfast skipping was associated with more restless nights, which limited their time to eat breakfast, students who reported getting a good night's sleep were more likely to eat breakfast than those who did not.[25]

A study reported that the factors associated with breakfast skipping were financial constraints, habits, and lack of time to eat or prepare breakfast.[12] Also, this could be related to the lifestyle characteristics of the study sample. One of the most common reasons was the lack of hunger in the morning because they love to drink stimulant drinks early in the morning, they did not like to eat early, time constraints in the morning, waking up late for their morning lectures, and heavy traffic in the morning.

Another reason for breakfast skipping among university students was having no feeling of hunger. This result was similar to that of previous studies, which indicated that the two most common reasons for skipping breakfast were a lack of hunger and time constraints.[5,7] The current study indicated that breakfast skipping among university students is due to a lack of energy to prepare breakfast after waking up. About 49% of the students in this study reported that having breakfast daily makes no difference. The research by ALBashtawy[5] indicated that breakfast skippers do so because they do not have someone to prepare it. However, Badrasawi *et al*.[7] found that 50% of those who skipped breakfast did so because there was no reason for eating early. Additionally, the transition to university life caused poor eating habits. The new exposure to stress and lack of time might lead to an unhealthy lifestyle, a habit that might end after university or persist in people's lives. Only three out of the 18 examined characteristics have significant associations with breakfast skipping. These characteristics were eating fast food, the university, and with whom breakfast is taken. Eating fast food is significantly associated with breakfast skipping, reflecting that the proportion of those eating fast foods is skipping breakfast. Snacking has increased energy intake while simultaneously decreasing hunger and satiety. In regard to breakfast consumption, the lifestyles and habits of university students had a significant influence on the results. Consistently, according to Moy *et al*.,[23] consumption of fast food was one of the factors associated with missing breakfast. Students who ate fast food at least once a week also had a higher likelihood of skipping breakfast. Moy *et al*.[23] and King *et al.*,[26] reported that one environmental factor that leads to skipping breaks is fast food outlets.[12,16]

According to the findings, students at Yarmouk University are more likely to skip breakfast. This could be explained by the abundance of restaurants on the University campus and around it. In addition, most of the students at Yarmouk University are from the villages and nearby cities. Given the distance, most students go early in the morning to their universities without eating any meal until they finish their morning lectures to avoid class delays or absenteeism. Further, the result showed that with whom the student eats breakfast is significantly associated with breakfast skipping; most students were influenced by their peers since psycho-social issues affect the health literacy of the adolescents.[27-29] Community health nurses may design activities to raise awareness among university students regarding the risk of breakfast skipping, motivate adult nutritional knowledge, and change behavior to promote health.

The results show that three-quarters of participants consumed fried potatoes, while half of them consumed sandwiches. Most students' breakfasts consist of fried potatoes and other high-fat, low-nutrient foods. For beverages, tea accounted for the highest percentage, while soda products accounted for the most nominal rate (6.85%).

The result of the comparisons between the percentages of student breakfast skipping on university days (Sunday through Thursday) and the weekend days (Friday and Saturday) in the present study indicates that 63% of students skipped their breakfast on university days compared with 36.82% on the weekend days. The result is consistent with Badrasawi *et al*.[7] study, which reported a higher prevalence of breakfast skipping on school days than on weekend days. Similarly, a previous study found that skipping breakfast on weekends for university days is nearly 1:2.[7] Most students have breakfast with their families on the weekends. However, breakfast skipping varied according to the days of the week. University students living in dorms, sororities, and states had higher chances of having a regular breakfast, and students living with their families were less likely to skip breakfast than those in rented accommodation.[30,31] Community health interventions may focus on strategies and policies available to universities to provide breakfast served in their canteens and on-campus restaurants with incentives such as subsidized prices by public universities. This study has limitations. The use of convenience sampling and a cross-sectional design may restrict the generalizability of the results.

Conclusion

A high percentage of university students in Jordan skip breakfast, especially on weekdays. Many reasons may contribute to the skipping, including no time because of oversleeping, consuming fast food, having no feeling of hunger in the morning, having no energy to prepare breakfast, and living arrangements. The university, where you eat fast food, had a statistically significant association with breakfast skipping. The rates of breakfast skipping were higher during university days, with Wednesdays having the highest percentage of breakfast skipping, and the trend of skipping has remarkably declined on Fridays and Saturdays, which are the weekend days. More attention should be paid to correlating factors and working on developing strategies and interventions to eliminate the effects of these factors to help students adhere to breakfast meals and minimize the prevalence of breakfast skipping among university students.

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Conflicts of interest

Nothing to declare.

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