

## Dietary Habits of University Students Living at Home or at University Dorm: A Cross-Sectional Study in Saudi Arabia

Etab S. Alghamdi<sup>1</sup>, Moroos S. Farrash<sup>1</sup>, Marwan A. Bakarman<sup>2</sup> & Abdel Moniem Mukhtar<sup>2</sup>

<sup>1</sup> Food and Nutrition Department, Faculty of Home Economics, King Abdulaziz University, Jeddah, Saudi Arabia

<sup>2</sup> Family and Community Medicine Department, Rabigh Faculty of Medicine, King Abdulaziz University, Jeddah, Saudi Arabia

Correspondence: Etab S. Alghamdi, Food and Nutrition Department, Faculty of Home Economics, King Abdulaziz University, Jeddah, P. O. Box: 2929 Jeddah 21461, Saudi Arabia. Tel. 966-554-887-880. E-mail: asalghamdy2@kau.edu.sa

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### Abstract

**Background:** Living with the family at home or away from it at the university dorm might affect the behavior of students, including their dietary habits. The aim of this study was to assess the differences in dietary habits between Saudi undergraduate students living with their families and those living at university dorms.

**Methods:** A cross-sectional study done at six Saudi universities. We recruited 354 undergraduate students. A self-administered structured questionnaire was used to collect data on socio-demographic characteristics, dietary habits, physical activities, perceived body weight and gastro-intestinal symptoms. Differences between students living at home with their families and those living on campus at university dorms were assessed using the chi-squared test.

**Results:** Three quarters of our sample were female (77%). Almost 80% of the students lived with their families. Change in dietary habits after joining the university was significantly more common among students living at university dorms ( $p < 0.001$ ). Major changes in dietary habits were found in 68.6% of students living at home with their families and in 31.4% of those living at university dorms. Moreover, we found significant difference between students living with their families and those living at university dorms, regarding place of breakfast ( $p = 0.003$ ), place of lunch ( $p < 0.001$ ), place of dinner ( $p = 0.002$ ) and perceived body weight ( $p = 0.018$ ).

**Conclusions and Recommendations:** Most of the students were living with their families. However, students living at university dorms were at higher risk of unhealthy change in their dietary habits. More nutritional interventions to enhance the health of students should be introduced.

**Keywords:** dietary habits, university students, university dorms, Saudi Arabia

### 1. Introduction

Unhealthy diet and physical inactivity are leading global causes of death and morbidities (Miller, 2017; Lear, 2017). University students undergo a life transition that often results in unhealthy dietary behaviors and unfavorable increase in body weight (Wilson, 2017). Students who leave their families should self-organize the purchase and preparation of food and this might affect their dietary habits negatively (Papadaki, 2007). Several factors such as limited time, academic stress and lack of money might play a role in this regard.

Studies showed that the most common unhealthy eating habits in university students were high consumption of sugar-sweetened drinks, butter and saturated fats; skipping breakfast, and midnight munching (Yahia, 2008; Al-Rethaiaa, 2010). College students living away from home were highly vulnerable to imbalanced diet and malnutrition, attraction to a new lifestyle, making their own food choices and irregular daily routines (Parmar, 2017). Unhealthy food choices of university students could affect weight management and lead to overweight or obesity (Peltzer, 2014).

Skipping breakfast is an unhealthy dietary habit affecting students' health. For provision of energy for the brain and to improve learning ability, breakfast is the most important meal of the day. Moreover, academic stress, especially during exam and excessive homework times, may cause some students to eat excessively or less than

normal (Ackuaku-Dogbe, 2014).

Many factors may influence food choices including the color, shape, temperature, aroma and flavor of food. Food availability and accessibility can also have an effect on food choices of university students, especially those living at university dorms. Food costs can affect students' choices; often healthy foods have a higher price than fast and processed foods (CLIK, 2018).

The aim of this study was to assess the differences in dietary habits between Saudi undergraduate students living with their families and those living at university dorms.

## **2. Methods**

We followed the "Strengthening the Reporting of Observational Studies in Epidemiology" (STROBE) guidelines for reporting our study methods and results (von Elm, 2007).

### *2.1 Study Design*

We conducted a cross-sectional study between September 2017 and February 2018.

### *2.2 Study Participants*

We recruited 354 undergraduate students at six Saudi Universities (King Abdulaziz University, King Khalid University, King Saud University, King Faisal University, Umm Al-Qura University, and King Fahd University). We used flyers, announcements on University notice boards and social media to invite students to participate in the study. We excluded students who suffered from gastro intestinal problems.

### *2.3 Study Setting and Location*

Our study was a multi-center study including six universities from four different regions in Saudi Arabia.

### *2.4 Data Collection Method and Study Variables*

We used a self-administered structured questionnaire developed and used by Bagordo and colleagues (Bagordo, 2013). It included questions on socio-demographic characteristics, dietary habits, physical activities, perceived body weight and gastro-intestinal symptoms.

### *2.5 Sample Size*

Our primary outcome was change in dietary habits after joining the university. Prior data showed that changes in dietary habits after joining the university affected 23% of university students<sup>12</sup>. Assuming the same rate of change in our study, we needed to recruit at least 272 students to estimate changes in dietary habits with a precision of 5%. We succeeded to recruit a higher number of eligible students in our study sample (n= 354).

### *2.6 Statistical Analysis*

We used frequencies and absolute numbers to describe categorical variables and mean and standard deviation to describe continuous variables. Difference between students living with their families and those living at university dorms were assessed using the chi-squared test. A p value less than 0.05 was considered significant. We used SPSS version 21.0 to conduct all statistical analyses.

## **3. Results**

We included 354 undergraduate students in our study. Seventy-seven percent (n= 273) of them were female. The mean age ( $\pm$  SD) of the students living with their families was  $25\pm 5.3$  years and of those living at university dorms was  $22\pm 2.4$  years. 80.5% (n= 285) of the students lived with their families and 19.5% (n= 69) lived in university dorms.

As shown in Table 1, the change in eating habits after joining the university was significantly more common among students living at university dorms than among students living at home with family ( $p < 0.001$ ). Major changes in dietary habits were found in 53.6% of students living at university dorms and in 28.4% of those living at home with their families.

Table 1. Differences between Students Living at University Dorm and Students Living at Home with Family in the Perceived Change in Eating Habits (n= 354)

Variable	Category	Living Place			P value*
		At University Dorm n= 69	At Home with Family n= 285	Total n= 354 (100%)	
Change in Eating Habits. No. (%)	Yes, a lot	37 (53.6)	81 (28.4)	118 (33.3)	<0.001
	Yes, but not much	23 (33.3)	133 (46.7)	156 (44.1)	
	No, not at all	9 (13.0)	71 (24.9)	80 (22.6)	

There was significant difference between students living at home with their families and those living at university dorms in place of breakfast ( $p= 0.003$ ), place of lunch ( $p< 0.001$ ) and place of dinner ( $p= 0.002$ ). Students living at home with their families ate their breakfast, lunch and dinner significantly more often at home than students that lived at university dorms. The latter ate these meals at their rooms on the university campus. One half (49.8%) of the students living with their families took breakfast at home and 31.9% of those living at university dorms took breakfast at room on the university campus. Three quarter (75.4%) of the students living with their families took lunch at home and 40.6% of those living at university dorms took lunch at room in the university campus. Whereas 71.9% of the students living with their families took dinner at home and 52.2% of those living at university dorms took dinner at room on the university campus.

Interestingly, 15.8% of students living at home with their families and 31.9% of those living at university dorms skipped breakfast, also 28.1% of students living at home with their families and 47.8% of those living at university dorms skipped dinner (see Table 2).

Table 2. Differences between Students Living at University Dorm and Students Living at Home with Family in Dietary Habits (n= 354)

Variable	Category	Living Place			P Value*
		At University Dorm N=69 (100%)	At Home with Family N =285 (100%)	Total N=354 (100%)	
Place of Breakfast No. (%)	I do not eat it	22 (31.9)	45 (15.8)	67 (18.9)	0.003
	At university	25 (36.2)	98 (34.4)	123 (34.7)	
	At home or room	22 (31.9)	142 (49.8)	164 (46.3)	
Place of Lunch No. (%)	At restaurant	18 (26.1)	27 (9.5)	45 (12.7)	<0.001
	At university	23 (33.3)	43 (15.1)	66 (18.6)	
	At home or room	28 (40.6)	215 (75.4)	243 (68.6)	
Place of Dinner No. (%)	I do not eat it	33 (47.8)	80 (28.1)	113 (31.9)	0.002
	At home or room	36 (52.2)	205 (71.9)	241 (68.1)	

\* Results of chi-squared test.

There was significant difference between students living at home with their families and those living at university dorms in perceived body weight ( $p= 0.018$ ). Students living at home with their families perceived their body weight significantly more obese than students living at university dorms. Almost 68.1% of the students living at university dorms perceived themselves obese comparing to 49.1% of the students living at home with their families. There was no significant difference between students living at home with their families and those living at university dorms in sport activities ( $p= 0.342$ ) and gastro-intestinal symptoms in the last year ( $p= 0.414$ ). However, daily sport activities were reported in 8.1% of the students living at home with their families and 13.0% of the students living at university dorms. Gastro-intestinal symptoms in the last year were reported in 32.6% of the

students living at home with their families and 29.0% of the students living at university dorms (see Table 3).

Table 3. Differences between Students Living at University Dorm and Students Living at Home with Family in Perceived Weight, Physical Activities and Gastro-Intestinal Symptoms (n= 354)

Variable	Category	Living Place		Total N=354 (100%)	p Value*
		At University Dorm N=69	At Home with Family N =285		
Perceived Weight	Obese	47 (68.1)	140 (49.1)	187 (52.8)	0.018
	Overweight	14 (20.3)	95 (33.3)	109 (30.8)	
	Normal weight	8 (11.6)	50 (17.5)	58 (16.4)	
Sport Activities	No sport	38 (55.1)	153 (53.7)	191 (54.0)	0.342
	1 to 3 times weekly	22 (31.9)	109 (38.2)	131 (37.0)	
	Every day	9 (13.0)	23 (8.1)	32 (09.0)	
GI Symptoms in the Last Year	Yes	20 (29.0)	93 (32.6)	113 (31.9)	0.414
	I do not remember	13 (18.8)	68 (23.9)	81 (22.9)	
	No	36 (52.2)	124 (43.5)	160 (45.2)	

\* Results of chi-squared test.

#### 4. Discussion

This study examined the difference in dietary habits between students living at home and those living at university dorms. Our study showed that most of the Saudi students were living with their families and had not encountered considerable change in their dietary habits after joining the university. However, students living at university dorms were at higher risk of unhealthy change in their dietary habits after joining the university. Major changes in dietary habits were reported in almost half (53.6%) of the students living at university dorms and in less than one third (28.4%) of those living at home with their families. This was consistent with our finding that students living at home with their families ate their breakfast, lunch and dinner significantly more often at home than students that lived at university dorms. The latter ate these meals at their rooms on the university campus. Several previous studies showed similar results (Yahia, 2008; Al-Rethaiaa, 2010; Parmar, 2017). Moving away from home and family might be associated with significant negative changes in nutritional habits and students living away from home are often at higher risk of consuming fast-foods (Kattelman, 2014). Therefore, we recommend introducing and monitoring nutritional interventions to enhance healthy dietary habits among students living at university dorms.

Interestingly, skipping breakfast was by far more common among students living at university dorm than among students living at home. We found that 15.8% of students living at home with their families and 31.9% of those living at university dorms skipped breakfast. This might be due to the fact that lectures and seminars at the universities start early in the morning and students living outside the university campus have less time for breakfast than students living on the campus (Deliens, 2016). Hence, we recommend providing easily accessible and healthy breakfast at university cafeterias for all students.

#### Competing Interests Statement

The authors declare that there are no competing or potential conflicts of interest.

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