

**Author's response to reviews**

**Title:** Eating Habits and Obesity among Lebanese University Students

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Eating Habits and Obesity among Lebanese University Students

Najat Yahia Dr., Abbas Abdallah Mr., Alice Achkar Ms., and Sandra Rizk Dr.

Reply to Reviewer's report:

#### Reply to A Zaborskis

- 1- Data concerning university students in terms of weight status and eating habits is lacking in Lebanon. Universities provide numerous opportunities to positively influence weight management behavior of large numbers of young adults in an educational setting and this study will stand as a preliminary step towards studying university students concerns. The manuscript clearly states that the sample taken from LAU does not represent the whole country but it provides a good picture of the Lebanese students attending LAU and somehow a good picture of university students in Lebanon from all religions. Students enrolled in LAU belong to all Lebanese religions but with somehow good socioeconomic standard since LAU students have to pay higher tuition fees compared to other universities. Therefore, students must be able to support their tuition fees or must have scholarships to pay their tuition fees. Concerning selection of students, students were not selected. They were recruited randomly from university campus by a trained university student accompanied by his professor. Students who agreed to participate in the study were asked to sign a consent form. The procedure has been indicated in the "method" section.
- 2- The aim of the study was to assess the prevalence of overweight and obesity in a sample of students from LAU and examine their eating habits. Data regarding university students is unavailable or scarce and results from this study will open the way to conduct another study such as studying the relation between weight status and food intake. However, the purpose of this study was not meant to formalize or extrapolate a hypothesis regarding food intake and weight. The preliminary data from this study will stand as base for a future larger study to examine the association between students weight status in relation to their eating habits
- 3- Concerning disagreement in the text. In the results section, it is stated clearly that "the majority of students were of normal weight". Considering both males and females, 64.7% of the total students were of normal weight (49% of males and 76.8% of females) and the prevalence of overweight and obesity was more common among male student (37.5% and 12.5% respectively). Given that percentage of total students in the normal weight category (64.7%), it can be considered that overall prevalence of overweight and obesity is low among students taking both male and female students.

Concerning alcohol intake, there were 85.5 % of females and 78.1% of males reported that they rarely or never drank alcohol. Therefore having 21.9% of males and 14.5% of females having 2 or 3 times per week alcohol does not qualify alcohol to be considered as a common trend among students.

- 4- The questionnaire has been adopted from a previous study conducted among university students (Sakamaki R, Amamoto R, Mochida Y, Shinfuku N, and Toyama K. A: **Comparative study of food habits and body shape perception of university students in Japan and Korea.** *Nutr J* 2005, 4:31) and it was standardized by the authors.
- 5- Data analysis: ANCOVA analysis was not used, the analysis that was used when we had to compare more than 2 means was ANOVA analysis. The SD for height was in meter so it was corrected to cm.
- 6- Testing for differences in table 1 between females and males for age is not indicative as all students are from the same age group; for weight and height, which are measurements taken to calculate BMI, the differences between males and females are included in table 2. As for the body fat %, the values are included in table 3. Anyway, if *P* values should be included to show that there is a significant difference in weight status and body fat percentage, the table below clearly shows that :

	SEX	N	Mean	Std. Deviation	P-value
AGE ( years)	m	96	20.29	2.000	>0.05
	f	125	19.94	1.770	
WEIGHT ( Kgs)	m	96	79.556	12.7602	0.000
	f	124	58.668	11.1869	
HEIGHT ( M )	m	96	1.7697	.06380	0.000
	f	125	1.6223	.05166	
BMI	m	96	25.3254	3.66051	0.000
	f	125	22.2356	3.92864	
FAT%	m	96	17.7531	4.51943	0.000
	f	125	28.2760	7.34608	

Regarding statistical assessment for Table 2, the chi-square test was done and the P-value is 0. *P*- value for table 2 is represented in the table above. The “total” for table 2 has been added in the revised paper.

- 7- Smoking data were added and references were corrected.

- 8- National data among university students or students in general, is lacking. Therefore, this study is very important to highlight university students eating habits.

Reply to Reviewer’s report:

Reply to second Reviewer’s report:

1. The comment of comparing % fat in relation to weight status is valuable and below is the requested table:

**Table 3. Students’ Percentage Body Fat by Gender**

Weight Status	Males		Females	
	N=	Mean ± SD	N=	Mean ± SD
<i>Underweight*</i>	1	12.00	8	16.9 ± 2.11
<i>Normal**</i>	47	14.4 ± 3.13	96	26.7 ± 4.75
<i>Overweight***</i>	36	20.1 ± 1.94	17	39.0 ± 2.25
<i>Obese****</i>	12	24.4 ± 2.29	4	42.4 ± 1.91

\* Underweight (BMI ≤ 18.5), \*\* Normal (BMI between 18.5 – 24.9), \*\*\* Overweight (BMI between 25- 29.9), \*\*\*\* Obese (BMI ≥ 30).

However BMI has been recommended for classification of weight status. According to the WHO, Body Mass Index (BMI) is a tool for indicating weight status in adults over 20 years old and it is divided according to the following categories.

BMI	Nutritional Status
Below 18.5	Underweight
18.5 - 24.9	Normal
25.0 - 29.9	Pre-obese (overweight)
30.0 - 39.9	Obese
Above 40	Very obese

BMI is being used as a screening tool to classify students’ weight status and not evaluate their body composition. Using several skinfold measurement is not practical to be used for university students.

2. Data collection: Tanita body fat analyzer “BF 300A” was used for measuring percentage body fat and conditions of measurements were added to the revised paper.
3. Data analysis: ANOVA was used for analysis.

4. Regarding normality of the data, the variables used were normally distributed variables. The samples compared were large samples size of the 2 groups were larger than 30 ( refer to Table 1) So even if the variables were not normally distributed by the central limit theorem the sampling distribution of the means would be normally distributed and we are allowed to use the t-test. The p-values for differences between males and females have been added (table above).
5. Table 1 indicates the means, SD and the p value of male and female students.

	SEX	N	Mean	Std. Deviation	P-value
AGE ( years)	m	96	20.29	2.000	>0.05
	f	125	19.94	1.770	
WEIGHT ( Kgs)	m	96	79.556	12.7602	0.000
	f	124	58.668	11.1869	
HEIGHT ( M )	m	96	1.7697	.06380	0.000
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	f	125	22.2356	3.92864	
FAT%	m	96	17.7531	4.51943	0.000
	f	125	28.2760	7.34608	

6. Unfortunately, data on alcohol consumption and smoking are scarce among university students as well as the general population. In Lebanon, there are two main religions: Muslims and Christians; but all of them are Lebanese (meaning that there is no multi-ethnic origin).