Volume 4, Issue 5, 2026

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

ASSOCIATION OF DIETARY HABITS WITH OVERWEIGHT AMONG POSTGRADUATE STUDENTS AT A PRIVATE UNIVERSITY: A CROSS-SECTIONAL STUDY

Gulnaz Yousuf[1], Yusra Ali[2], Saeed Ullah[3], Irfan Ali[*4]

[1]*Emergency Officer, Sindh Emergency Rescue Services (Rescue 1122) Rehabilitation Department, Government of Sindh, Pakistan*

[2]*Emergency Officer, Sindh Emergency Rescue Services (Rescue 1122) Rehabilitation Department, Government of Sindh, Pakistan*

[3]*Demonstrator, Khyber Medical University IHS, Islamabad, Pakistan*

[*4]*Lecturer, Khyber Medical University IHS, Islamabad, Pakistan*

DOI: https://doi.org/10.5281/zenodo.20196042

Keywords

Dietary habits, Overweight, Obesity, Postgraduate students, Body Mass Index (BMI), Fast food consumption.

Article History

Received: 19 March 2026

Accepted: 29 April 2026

Published: 15 May 2026

Corresponding Author: *
Irfan Ali

Abstract

Background: *Overweight and obesity have become major global public health concerns, with their prevalence increasing rapidly among adults and young populations worldwide. Unhealthy dietary habits, physical inactivity, and behavioral factors are considered significant contributors to excessive weight gain, particularly among university students.*

Methodology: *A cross-sectional study was conducted and 194 samples collected from post students. Non-Random Purposive Sampling Technique was used to select the study population. All Male and female students were included who give consent to take part in study and was willing to provide their weight and height measurements. A self-administered questionnaire, along with anthropometric measurements, was used for data collection.*

Result: *The prevalence of overweight and obesity was 37.7%, while 53.1% had normal BMI. The mean age of the participant was 29.86 ± SD 4.99 with a range of 23 to 43 years. Most of the married participants were overweight, that was 22.5%. By comparing gender male were more obese 19% as compared to female participants 18%. Significant associations were found between overweight and dietary habits such as fast-food intake, breakfast skipping, meal frequency, home-cooked food consumption, and energy drink intake.*

Conclusion*: The study concluded that unhealthy dietary habits were significantly associated with being overweight among postgraduate students. Frequent fast-food consumption, skipping breakfast, and unhealthy eating patterns increased the risk of being overweight and obesity. Promoting healthy dietary practices and nutrition awareness programs may help reduce overweight among students.*

INTRODUCTION

Background

Obesity is not only related with some areas of world now, but it is now worldwide pandemic. And the frequency of obesity is increasing day by day. Immensely 1.9 billion of the age 18 years and more were overweight and 650 million were obese in 2016 **[1].**

In this tendency persistently increases than by 2030 38% will be pre obese and 20% will be obese respectively **[2].** Factors responsible for obesity other than genetic susceptibility are

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

exercise, dietary habits and behavioral factors and plays vital role **[3].**

Each year about 2.8 million adults died from obesity and issues related to it **[4].** According to recent cohort study 23.9% of Asians was obese with BMI greater than 25 and men are more obese than females that is 67% and 33% respectively **[5].**

Study conducted in Nigeria showed that around 60% of the undergraduate's students eat suggested diet and utilization of milk, vegetables and fruits was least **[6].**

Study showed that long term diet to lose weight had led to anticipate weight gain in future **[7].**

One of the major factors of increasing weight is improper eating behavior. Skip of any meal like breakfast or lunch. However, food addiction and weight gain were also common among adult of age group 18 to 29 years **[8,9].**

Obesity is main noninfectious disease in Pakistan. According to recent study conducted in Karachi showed that the study population were obese and overweight 46% and 18% respectively **[10].**

A Qualitative study conducted in Saudi Arabia in 2019. They included all undergraduate students of age between 18 to 26 years. According to their findings 20.4% of study population were overweight and 14.9% were obese **[11].**

In a study Prevalence of abdominal obesity, dyslipidemias, pre-diabetes, and prehypertension was 5%,57.3%.2.8%,1% and 8.2% respectively. Positive association found between obesity and alcohol consumption. Obesity was high in female as compared to male participants **[12].**

Another sectional study conducted in Kuwait. Their study findings showed that stress is positively associated with unhealthy dietary behavior. Stress level was high among girls that was 44%. **[13].**

In a study conducted in Lahore, Pakistan, Abdominal obesity was found in student 46% and 31.4% respectively. Most of the male students had central obesity and it was associated with high caloric intake. Only 28.7% students regularly walked and jogging. Central obesity was 56% significantly high among Private Medical college students as compared to government medical college students was 22%. High BMI ≥25 was also more common in students at private medical colleges **[14].** In Karachi, Pakistan in 2019.There study findings showed that overweight and obese students were 33.2%. **[15].**

PROBLEM STATEMENT

Overweight is becoming common among university students due to unhealthy eating habits and busy academic routines. Postgraduate students often skip meals, eat fast food, and have irregular diets, which may increase the risk of overweight. However, there is limited information about the relationship between dietary habits and overweight among postgraduate students in private universities. Therefore, this study will assess the association between dietary habits and overweight among postgraduate students at a private university.

RATIONALE OF STUDY:

This study is important to understand how dietary habits affect overweight among postgraduate students. The findings may help in promoting healthy eating habits and planning awareness programs for students.

OBJECTIVE:

To determine the prevalence and association between dietary habits and overweight among postgraduate students at a private university SZABIST Karachi.

METHODOLOGY

This study was Cross sectional in nature, as data were collected through a self-administered questionnaire. The study was conducted among postgraduate students of SZABIST Karachi Pakistan, including both male and female students.

The sample size was calculated using Rao Soft at a 95% confidence level, resulting in a total sample of 194 participants. A non-random purposive sampling technique was used to select the study participants. Data were collected using a self-administered questionnaire along with anthropometric measurements. The dependent variable of the study was overweight, while independent variables included age, gender, marital status, dietary behaviors, and awareness regarding obesity-related risks.

Body Mass Index (BMI) was used to determine the prevalence of overweight and obesity among

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

postgraduate students. Weight was measured in kilograms and height in centimeters, and participants were categorized as underweight, normal weight, overweight, or obese according to BMI criteria. Descriptive statistics were used to analyze socio-demographic characteristics and awareness regarding obesity risks. Pea Chi-Square test was applied to assess the association between BMI and variables such as age, gender, marital status, and dietary behaviors. A p-value of less than 0.05 was considered statistically significant. Data analysis was performed using SPSS version 24.

Results

A total of 194 postgraduate public health students participated in this study. Data were collected to assess socio-demographic characteristics, dietary habits, awareness regarding obesity-related risks, and factors associated with overweight and obesity among participants.

Table 1: Table 1: Socio-Demographic Characteristics, Dietary Habits, and Health-Related Factors Among Participants (N = 194)

Variables	Categories	Frequency (n)	Percentage (%)
Gender	Male	96	49.5
	Female	98	50.5
Marital Status	Single	91	46.9
	Married	103	53.1
Level of Education	1st Year	77	39.7
	2nd Year	117	60.3
BMI Category	Underweight (<18.5)	18	9.3
	Normal (18.5–24.9)	103	53.1
	Overweight (25–29.9)	50	25.8
	Obese (>30)	23	11.9
Meals Taken Daily	One time	17	8.8
	Two times	83	42.8
	Three times	94	48.5
Breakfast Intake	Everyday	111	57.2
	Occasionally	59	30.4
	Always skipped	24	12.4
Eating More During Stress	Yes	68	35.1
	No	126	64.9
Food/Snack with Energy Drinks During Normal Day	Everyday	20	10.3
	3–4 times/week	41	21.1
	1–2 times/week	70	36.1
	Seldom/Rarely	63	32.5
Snacks with Energy Drinks While Playing Video Games	Everyday	26	13.4
	3–4 times/week	12	6.2
	1–2 times/week	26	13.4
	Seldom/Rarely	130	67.0
Energy Drink Consumption	Everyday	14	7.2
	3–4 times/week	18	9.3
	1–2 times/week	55	28.4
	Seldom/Rarely	107	55.2
Carbohydrate/Flavored Drink Consumption	Everyday	17	8.8
	3–4 times/week	22	11.3
	1–2 times/week	68	35.1
	Seldom/Rarely	87	44.8

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Presence of Disease	Yes	31	16.0
	No	158	81.4
	Missing/Other	5	2.6
Home-Cooked Food with Family	Everyday	123	63.4
	3–4 times/week	39	20.1
	1–2 times/week	18	9.3
	Seldom/Rarely	14	7.2
Fast Food Consumption	Everyday	6	3.1
	3–4 times/week	30	15.5
	1–2 times/week	104	53.6
	Seldom/Rarely	54	27.8
Family History of Obesity	Yes	55	28.4
	No	139	71.6

Table 1 presents the socio-demographic, dietary, and health-related characteristics of postgraduate students. Female participants (50.5%) were slightly higher than males (49.5%), and most participants were married (53.1%) and enrolled in the 2nd year (60.3%). According to BMI categories, 53.1% had normal weight, 25.8% were overweight, 11.9% were obese, and 9.3% were underweight, with a combined overweight and obesity prevalence of 37.7%. Most participants consumed meals three times daily (48.5%) and regularly ate breakfast (57.2%). Fast food and energy drink consumption were common among students. Most participants consumed home-cooked food daily (63.4%), while 28.4% reported a family history of obesity and 16% had a disease.

Table 2: Awareness Regarding Risks Associated with Obesity

Awareness of Risks Associated with Obesity			
Risks	**Yes**	**No**	**Don't Know**
• **Type 2 Diabetes**	138(71.1%)	46(23.7%)	10(5.2%)
• **Hypertension**	132(68%)	47(24.2)	15(7.7%)
• **Coronary Artery Disease**	117(60.3%)	52(26.8%)	25(12.9%)
• **Respiratory Disorder**	90(46.4%)	82(42.3%)	23(12%)
• **Reproductive Disorder**	130(67%)	45(23.2%)	19(9.7%)
• **Osteoarthritis**	130(67%)	49(25.3%)	15(7.7%)
• **Liver and Gall bladder disease**	126(64.9%)	54(27.8%)	14(7.2%)
• **All the Above**	79(40.7%)	115(59.3%)	-----
• **None of the above**	43(22.2%)	151(77.8%)	-----

Table 2 demonstrates participants' awareness regarding the risks associated with obesity. The majority of participants were aware that obesity is associated with Type 2 Diabetes (71.1%), hypertension (68%), reproductive disorders (67%), and osteoarthritis (67%). Furthermore, 64.9% recognized liver and gallbladder diseases as obesity-related complications, while 60.3% identified coronary artery disease as a risk factor. Awareness regarding respiratory disorders was comparatively lower, as only 46.4% recognized the relationship between obesity and respiratory diseases. In addition, only 40.7% correctly identified "all of the above" as obesity-related

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

risks, indicating that many participants lacked comprehensive knowledge regarding obesity complications

Table 3: Association Between BMI Categories and Characteristics of Participants

Variables	BMI Category				
	Underweight <18.5	Normal (18.5-24.9)	Over-weight (25-29.9)	Obese >30	P-Value
Gender					**0.05**
Male	6 (3%)	53(27.3%)	30(15.4%)	7(3.6%)	
Female	12(6%)	50(25.7%)	20(10.3%)	16(8.2%)	
Age					0.064
20 – 30 years	16(8.2%)	71(36.5%)	30(15.4%)	11(5.6%)	
31 – 40 years	0	26(13.4%)	17(8.7%)	10(5.1%)	
41- 50 years	2(1%)	6(3%)	3(1.5%)	2(1%)	
Marital Status					**0.002**
Single	14(7.2%)	48(24.7%)	25(12.8%)	4(2%)	
Married	4(2%)	55(28.3%)	25(12.8%)	19(9.7%)	
Education Level					**0.003**
1st Year	4(2%)	34(17.5%)	23(11.8%)	16(8.2%)	
2nd Year	14(7.2%)	69(35.5%)	27(13.9%)	7(3.6%)	
Food with energy drinks					**0.001**
• Everyday	2(1%)	10(5.1%)	8(4.1%)	0	
• 3-4 times/week	2(1%)	26(13.4%)	2(1%)	11(5.6%)	
• 1-2 times/week	8(4.1%)	28(14.4%)	26(13.4%)	8(4.1%)	
• Seldom/Rarely	6(3%)	39(20.1%)	14(7.2%)	4(2%)	
Food with drinks playing video game					**0.020**
• Everyday	2(1%)	8(4.1%)	12(6.1%)	4(8.2%)	
• 3-4 times/week	4(2%)	6(3%)	2(1%)	0	
• 1-2 times/week	2(1%)	18(9.2%)	4(2%)	2(1%)	
• Seldom/Rarely	10(5.1%)	71(36.5%)	32(16.4%)	17(8.7%)	
Take snacks separately from meals					**0.044**
• **Everyday**	4(2%)	8(4.1%)	7(3.6%)	5(2.5%)	
• **3-4 times/week**	0	14(7.2%)	2(1%)	5(2.5%)	

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

• 1-2 times/week	4(2%)	34(17.5%)	21(10.8%)	8(4.1%)	
• Seldom/Rarely	10(5.1%)	47(24.2%)	20(10.3%)	5(2.5%)	
Take energy drinks					0.099
• Everyday	4(2%)	8(4.1%)	2(1%)	0	
• 3-4 times/week	0	12(6.1%)	3(1.5%)	3(1.5%)	
• 1-2 times/week	4(2%)	24(12.3%)	18(9.2%)	9(4.6%)	
• Seldom/Rarely	10(5.1%)	59(30.4%)	27(13.9%)	11(5.6%)	

Variables	BMI Category				
	Underweight <18	Normal (18.5-24.9)	Over-weight (25-29.9)	Obese >30	P-value
Take flavor drinks					0.057
• Everyday	4(2%)	8(4.1%)	3(1.5%)	2(1%)	
• 3-4 times/week	0	14(7.2%)	5(2.5%)	3(1.5%)	
• 1-2 times/week	2(1%)	38(19.5%)	16(8.2%)	12(6.1%)	
• Seldom/Rarely	12(6.1%)	43(22.1%)	26(13.4%)	6(3%)	
Eat fruits vegetables					0.054
• Everyday	2(1%)	26(13.4%)	2(1%)	4(2%)	
• 3-4 times/week	8(4.1%)	43(22.1%)	27(13.9%)	14(7.2%)	
• 1-2 times/week	6(3%)	26(13.4%)	13(6.7%)	5(2.5%)	
• Seldom/Rarely	2(1%)	8(4.1%)	8(4.1%)	0	
Eat home cooked food					0.004
• Everyday	14(7.2%)	63(32.4%)	31(15.9%)	15(7.7%)	
• 3-4 times/week	0	20(10.3%)	15(7.7%)	4(2%)	
• 1-2 times/week	0	14(7.2%)	0	4(2%)	
• Seldom/Rarely	4(2%)	6(3%)	4(2%)	0	
Eat fast food					0.003
• Everyday	2(1%)	0	2(1%)	3(1.5%)	
• 3-4 times/week	4(2%)	16(8.2%)	3(1.5%)	7(3.6%)	
• 1-2 times/week	4(2%)	58(29.8%)	30(15.4%)	12(6.1%)	
• Seldom/Rarely	8(4.1%)	29(14.9%)	15(7.7%)	2(1%)	
No of times meals					0.022
• One time	0	10(5.1%)	7(3.6%)	0	

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

• Two times	12(6.1%)	36(18.5%)	20(19.48%)	15(7.7%)	
• Three times	6(3%)	57(29.38%)	23(11.85%)	8(4.1%)	
Breakfast daily					**0.001**
• Everyday	8(4.1%)	60(30.9%)	37(19%)	6(3%)	
• Occasionally	6(3%)	33(17%)	11(5.6%)	9(4.6%)	
• Always Skipped	4(2%)	10(5.1%)	2(1%)	8(4.1%)	
Family history of obesity					**0.000**
• Yes	2(1%)	20(21.2%)	19(9.7%)	14(7.2%)	
• No	16(8.2%)	83(88.2%)	31(15.9%)	9(4.6%)	
Eat more during Stress					0.073
• Yes	8(4.1%)	30(15.4%)	17(8.7%)	13(6.7%)	
• No	10(5.1%)	73(37.6%)	33(17%)	10(5.1%)	
Any disease					**0.000**
• Yes	2(1%)	10(5.1%)	17(18%)	2(1%)	
• No	16(8.2%)	91(46.9%)	33(17%)	18(9.2%)	
Type_of_disease					
• Diabetes	2(1%)	2(1%)	7(3.6%)	5(2.5%)	**0.012**
• Hypertension	0(%)	6(3%)	5(2.5%)	2(1%)	
• Other	16(8.2%)	95(48.9%)	38(19.5%)	16(8.2%)	

Table 3 shows the association between BMI categories and socio-demographic and lifestyle factors. Significant associations were observed between BMI and marital status ($p = 0.002$), educational level ($p = 0.003$), gender ($p = 0.05$), food with energy drinks ($p = 0.001$), snacks while playing video games ($p = 0.020$), taking snacks separately from meals ($p = 0.044$), home-cooked food ($p = 0.004$), fast food consumption ($p = 0.003$), meal frequency ($p = 0.022$), breakfast intake ($p = 0.001$), family history of obesity ($p < 0.001$), and presence of disease ($p < 0.001$). Married participants, females, breakfast skippers, and those with frequent fast food intake showed higher rates of overweight and obesity. However, age, flavored drinks, fruit and vegetable intake, stress eating, and energy drink intake alone did not show statistically significant associations with BMI.

Table 4: Descriptive Statistics of Age, Height, and Weight

		Age	Height	weight
N	Valid	194	194	194
Mean		29.86	161.538	63.814
Std. Error of Mean		.359	.8886	.9466
Median		28.00	162.500	63.000
Mode		26	170.0	60.0
Std. Deviation		4.999	12.3770	13.1844
Variance		24.995	153.190	173.828
Range		20	87.0	58.0

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Minimum	23	113.0	42.0
Maximum	43	200.0	100.0

Table 4 presents the descriptive statistics of age, height, and weight of the participants. The mean age of respondents was 29.86 ± 4.99 years, with ages ranging from 23 to 43 years.

The mean height of participants was 161.53 ± 12.37 cm, while the mean weight was 63.81 ± 13.18 kg. The maximum recorded weight was 100 kg, whereas the minimum weight was 42 kg.

DISCUSSION

The prevalence of obesity was 11.86% and overweight was high 25.77% in 194 sample sizes of postgraduates as compared to study conducted in Saudi Arabia with sample size of 416, they found prevalence of obesity 14.9% and overweight 20.4% and by gender male were obese as compared to female and as same as their study my study also showed high prevalence of underweight among female students. Our findings also showed that prevalence of overweight was high among those who eating snacks while playing video game and watching Tv and showed positive association among them. Skipping of breakfast is also common among university students. The mean age of the participant was 29.86 ± SD 4.99 with a range of 23 to 43 years and in their study mean age was 21±2.34 and mean BMI of males are greater than female same as their study **[16].**

In my study 48.5% of participants eats meal three times a day which is relatively high as compared to their study which was only 31%. Breakfast consumption was 57.2 which is also high as compared to their study was 23% and consumption of fruits was less in students of my study which is same as their study and less fruits consumptions lead to my non communicable diseases in students. In my study 7.2% take energy drinks daily and 28.4% take drink 1-2 times a day. Which is less than their study which was 30% participant drink energy drinks daily. Fast food eating was high in my study same as their study. Family history of obesity was showed positive association with obesity among participants **[17].**

BMI more than 25 was 19 % of male and 18.5% females which is relatively less than their study which was 30% of male and 16% of females and prevalence of obesity is more among male 37% which was same in their study male are more obese as compared to females **[18].**

CONCLUSION

The prevalence of overweight is high in postgraduate's student and study finding showed age, gender, marital status, food with energy drinks, taking snacks separately from meal, skipping breakfast, fast food, family history showed positive association with obesity.

LIMITATION OF STUDY

Limitation of this study was that data was collected from only postgraduates' students of SZABIST only, so the results of my study are not generalizable and only chi square test was used, and sample size was short.

RECOMMENDATION

We recommend more studies should be conducted on large population of students to find the exact prevalence rate of obesity among students so that we can control the obesity by finding out varied factors associated with it.

REFRENCES

Tanwi, T. S., Chakrabarty, S., Hasanuzzaman, S., Saltmarsh, S., & Winn, S. (2019). Socioeconomic correlates of overweight and obesity among ever-married urban women in Bangladesh. BMC public health, 19(1), 1-7

Kelly, T. (2008). „Yang, W „Chen, CS, Reynolds, K „He, J.: Global burden of obesity in 2005 and projections to 2030. Int J Obes (Lond), 32(9), 1431-1437.

Khan, Z. N., Assir, M. Z. K., Shafiq, M., Chaudhary, A. E. G., & Jabeen, A. (2016). High prevalence of preobesity and obesity among medical students of Lahore and its relation with dietary habits and physical activity. Indian journal of endocrinology and metabolism, 20(2), 206.

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Misra, A., & Shrivastava, U. (2013). Obesity and dyslipidemia in South Asians. Nutrients, 5(7), 2708-2733.

Klatsky, A. L., Zhang, J., Udaltsova, N., Li, Y., & Tran, H. N. (2017). Body mass index and mortality in a very large cohort: is it really healthier to be overweight? The Permanente Journal, 21.

Otemuyiwa, I. O., & Adewusi, S. R. (2012). Food choice and meal consumption pattern among undergraduate students in two universities in southwestern Nigeria. *Nutrition and health*, *21*(4), 233-245.

Mann, T., Tomiyama, A. J., Westling, E., Lew, A. M., Samuels, B., & Chatman, J. (2007). Medicare's search for effective obesity treatments: diets are not the answer. *American Psychologist*, *62*(3), 220.

Leigh, S. J., & Morris, M. J. (2018). The role of reward circuitry and food addiction in the obesity epidemic: An update. *Biological psychology*, *131*, 31-42.

Hauck, C., Weiß, A., Schulte, E. M., Meule, A., & Ellrott, T. (2017). Prevalence of 'food addiction'as measured with the Yale Food Addiction Scale 2.0 in a representative German sample and its association with sex, age and weight categories. *Obesity Facts*, *10*(1), 12-24.

Khan, Z. N., Assir, M. Z. K., Shafiq, M., Chaudhary, A. E. G., & Jabeen, A. (2016). High prevalence of preobesity and obesity among medical students of Lahore and its relation with dietary habits and physical activity. *Indian journal of endocrinology and metabolism*, *20*(2), 206.

Syed, N. K., Syed, M. H., Meraya, A. M., Albarraq, A. A., Al-Kasim, M. A., Alqahtani, S., ... & Elnaem, M. H. (2020). The association of dietary behaviors and practices with overweight and obesity parameters among Saudi university students. PloS one, 15(9), e0238458.

Olatona, F. A., Onabanjo, O. O., Ugbaja, R. N., Nnoaham, K. E., & Adelekan, D. A. (2018). Dietary habits and metabolic risk factors for non-communicable diseases in a university undergraduate population. Journal of health, population and nutrition, 37(1), 1-9.

Ahmed, F., Al-Radhwan, L., Al-Azmi, G. Z. S., & Al-Beajan, M. (2014). Association between stress and dietary behaviours among undergraduate students in Kuwait: gender differences. Journal of Nutrition and Health Sciences, 1(1), 1-8.

Khan, Z. N., Assir, M. Z. K., Shafiq, M., Chaudhary, A. E. G., & Jabeen, A. (2016). High prevalence of preobesity and obesity among medical students of Lahore and its relation with dietary habits and physical activity. Indian journal of endocrinology and metabolism, 20(2), 206.

Asghar, A., Shah, A. M., Hussain, A. A., Tahir, A., & Asghar, H. (2019). Frequency of pre-obesity and obesity in medical students of Karachi and the predisposing lifestyle habits. Cureus, 11(1).

Syed, N. K., Syed, M. H., Meraya, A. M., Albarraq, A. A., Al-Kasim, M. A., Alqahtani, S., ... & Elnaem, M. H. (2020). The association of dietary behaviors and practices with overweight and obesity parameters among Saudi university students. *PloS one*, *15*(9), e0238458.

Olatona, F. A., Onabanjo, O. O., Ugbaja, R. N., Nnoaham, K. E., & Adelekan, D. A. (2018). Dietary habits and metabolic risk factors for non-communicable diseases in a university undergraduate population. *Journal of health, population, and nutrition*, *37*(1), 1-9.

Khan, Z. N., Assir, M. Z. K., Shafiq, M., Chaudhary, A. E. G., & Jabeen, A. (2016). High prevalence of preobesity and obesity among medical students of Lahore and its relation with dietary habits and physical activity. *Indian journal of endocrinology and metabolism*, *20*(2), 206.

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Ahmed, F., Al-Radhwan, L., Al-Azmi, G. Z. S., & Al-Beajan, M. (2014). Association between stress and dietary behaviours among undergraduate students in Kuwait: gender differences. *Journal of Nutrition and Health Sciences*, *1*(1), 1-8.