Stress and Dietary Pattern Effect on Overweight and Obesity among Technical Nursing Students

Amira Elsayed Mohamed[1], Afaf Mohamed Fahmy[2], Rania Abd Elhamid Zaki[3]
[1]B.Sc. In Nursing, [2, 3]Assistant Professor of Psychiatric-Mental Health Nursing Faculty of Nursing- Ain Shams University.

Abstract

Background: Many adolescents suffer from common mental disorders such as stress, which affects health through the psychosocial process, eating behavior, food choices and physical activity.. **Aim:** this study aims to assess the stress and dietary pattern effect on overweight and obesity among technical nursing students. **Design:** A descriptive relational research design was conduct this study. **Setting:** This study was conducted at all nursing institutes of Cairo Curative Organization's Hospitals (Heliopolis Hospital, Mabarret Masr Al-Qadimah Hospital, Mabara El Maadi Hospital, Coptic Hospital and El-Islah El-Islamy Hospital). **Sample:** Purposive sample of 85 overweight and obese students. **Tools of data collection:** Interview questionnaire (Socio-demographic data and feeding pattern data), compulsive Eating Scale and perceived Stress Scale. **Results:** Results of the study showed that, more than half of technical nursing students under study had positive family history of obesity and one third of them were obese and had high compulsivity level. **Conclusions:** More than three quarters of technical nursing students under study had moderate level of stress, and there was a positive correlation between dietary pattern and level of stress and a positive correlation between overweight, obesity and level of stress. **Recommendations:** Future studies should be done on large numbers of nursing students about their eating behavior and how they decrease their stress level.

Keywords: Stress, Dietary Pattern, Overweight, Obesity.

Introduction

Stress is defined as the body's physiological response as a result of pressures and events that overwhelm it and threaten and shake the person's ability to maintain balance, Stress in the early stage of life has a negative impact on the development of the child, structure and function of the brain. Also, its effect on physical activity, health behaviors, dietary intake and increasing risk of obesity **(Bremner, Moazzami, Wittbrodt, Nye, Lima, Gillespie & Vaccarino, 2020).**

Adolescence is the crucial time period at which both the body weight and psychological stress reach the peak. Studies show that the people belong to this age group is likely to develop high levels of stress, agitating eating behavior, and negative body image, Some studies report that stress not only increases the food consumption but also changes their diet from lower fat foods to high-fat foods **(Gatti, Ionio, Traficante & Confalonieri, 2014).**

Obesity was considered a disease of stress, Excess of body weight is associated with many health problems such as heart disease, liver disease, high blood pressure, sleep apnea, gall bladder

disease, depression, diabetes and endocrine disorders **(Lee, Dale, Guy & Wolke, 2018).**

Fighting obesity requires more than "eat less and exercise more." Certainly caloric intake and physical activity frequency/intensity are the primary determinants of energy balance. However, both weight loss and maintenance of healthy weight are best achieved through sustained adherence to a broader range of healthy eating (e.g., increased fruit/vegetable intake) and physical activity (e.g., reduced sedentary time) behaviors. Based on the foundational understanding of the complex and multi-level determinants of healthy eating and healthy physical activity, much work has been done to develop interventions that facilitate these healthy behaviors **(Heerman, Jackson, Hargreaves, Mulvaney, Schlundt, Wallston, & Rothman, 2017).**

Short -term stress can cause a people to lose their appetite, while long-term stress can lead to comfort eating which often involves the overeating of food that are rich of calories such as high fat and carbohydrates in an attempt to make them feel better, Long time stress affects body functions and plays an important role in most of psychiatric disorders and indirect health behavior changes, One of the behavioral changes is food choice that affects health as a result of changes in appetite and dietary intake , Many people do not think about healthy eating at the time of stress, they often skip some meals especially the breakfast or eat fast food outside the home which can leads to more emotional strain and adversely affect their health **(Lee et al., 2018).**

Significance of the study:

Obesity is a major and growing health problem that affects developed, and developing countries. It has many health, financial, and social consequences. Therefore, addressing obesity tops the World Health Organization's public health agenda. In Egypt, there is a remarkable increase in obesity with more than one third of the whole population being obese. A particular issue in Egypt is that prevalence of obesity is more than double among females (46%) as compared to males (22%) **(Alebshehy, Shuaib, Mbako, Barffo & Nuotol, 2016).**

The prevalence of obesity has doubled since 1980, with worldwide estimates of 108 million children and 604 million adults considered obese in 2015. Moreover, globally, there were 4.0 million deaths related to obesity, reflecting the detrimental impact of obesity on health **(Bryant, Rehman, Pepper & Walters, 2019).**

The worldwide prevalence of overweight and obesity has doubled since 1980 to an extent that nearly a third of the world population is now classified as overweight or obese. Obesity adversely affects nearly all physiological functions of the body and comprises a significant public health threat. **(Adeyemi, Olayaki, Abdussalam, Toriola, Olowu, Yakub & Raji, 2020).**

Various studies in Egypt blame the problem on bad eating habits, economic prosperity and absence of a health conscious culture **(Ecker, Al-Riffai, Breisinger, & El-Batrawy, 2016).** Therefore, it is important to understand the stress and dietary pattern effect on overweight and obesity among technical nursing students.

Aim of the Study

This study aims to:

Assess the stress and dietary pattern effect on overweight and obesity among technical nursing students.

Research question:

1-What are the dietary pattern of technical nursing students?

2-What are the relationship between dietary pattern, stress, overweight and obesity among technical nursing students?

Subjects and Methods

Technical design:

The technical design includes research design, setting, subject and tool of data collection.

Research Design:

Descriptive relational design was utilized in this study.

Research Setting:

The study was carried out in all nursing institutes of Cairo Curative Organization's Hospitals (Heliopolis Hospital, Mabarret Masr Al-Qadimah Hospital, Mabarret El-Maadi Hospital, Coptic Hospital, El-Islah El-Islamy Hospital).

Subjects of the study:

Selection of sample:

Selection of sample contained sample type, sample size, and sample criteria.

Sample type:

A purposive sample of (85) technical nursing students from all nursing institutes of Cairo Curative Organization's Hospitals (Heliopolis Hospital, Mabarret Masr Al-Qadimah Hospital, Mabarret El-Maadi Hospital, Coptic Hospital, El-Islah El-Islamy Hospital) were selected whom attended institutes and accepted participation and included criteria.

Sample size: 85 overweight and obese students.

Criteria of sample:

Inclusion criteria:

- **Population:** Students in technical nursing institutes.
- **Age:** From 16-21 years.
- **Sex:** Female.

Exclusion criteria:

- Underweight students (BMI is equal to or less than 18.5).
- Students suffering from any chronic diseases.

Tools for data collection:

Data will be collected using the following tool.

1-Interviewing questionnaire:

An Arabic questionnaire was developed by the researcher, after reviewing the related literature to assess:

a- Socio-demographic data that included age, marital status, weight, height, family size, and family history.

b- Dietary pattern data as Do you forget the breakfast meal, Do you have meals after 7:00pm, Do you eat snacks between the main meals, Do you eat in regular hours, Do you exercise daily, …etc.

❖ **Scoring system:**

Dietary pattern questionnaire contained 28 sentences divided into 15

sentences feeding pattern, 4sentenses food consumption, and 9sentenses frequency of food consumption. Each response taken one score, yes=1, no=2. If the score from 1≥28 was considered unhealthy dietary pattern while score from 28-56 was considered healthy dietary pattern.

2- Compulsive Eating Scale (CES) (Kagan & Squires, 1984):

This tool is used to measure uncontrollable eating pattern of the participants and consists of (8) items that focused on pattern of eating and causes of over eating. A 5-point Likert scale from never to more than once a week was used.

❖ **Scoring system:**

Compulsive eating scale contained 8sentenses. Each response taken one score, never=1, once or twice a year=2, once a month=3, once a week=4, more than once a week=5. If the score from 1>20 was considered low level of food compulsion while score from 20-40 was considered high level of food compulsion.

3- Perceived Stress Scale (PSS) (Mikolajczyk, El Ansari, Maxwell, 2009):

The Cohen 14-item Perceived Stress Scale was used to numerically determine perceived stress levels within participants. A 5-point Likert scale (never to very often) will be used and scores will be added for a total in which a higher score will indicate greater perceived stress in that individual.

❖ **Scoring system**

Each response taken one score, never=1, almost never=2, sometimes=3, fairly often=4, very often=5. Perceived stress scale contained 14sentenses. If the score from 1≥23 was considered low level of stress while score from 23≥46 was considered moderate level of stress, and score from 46-70 was considered severe level of stress.

Operational design:

The operational design includes preparatory phase, Pilot study and field work.

A. Preparatory phase:

This phase dealt with the preparation of the study design; data collection tools were based on reviewing current and past local and international related literatures about stress, dietary pattern and obesity of technical nursing students. This review was carried out through books, internet, periodicals and magazines to acquaint with the current relevant tool that was performed, for data collection then the content validity and reliability were reviewed and assessed by expert persons.

Content validity:

It was ascertained by a panel of experts from Psychiatric department Faculty of Nursing Ain Shams University who reviewed the content of tools for comprehensiveness, accuracy, clarity and relevancy…etc.

Reliability:

It was conducted for the developed tool. To achieve the criteria of trust-worthiness of the tool reliability, a doctor in statistics checked face and content of all items, no modifications were performed and the points of the tool tested through the pilot study.

Pilot study:

Pilot study was performed in the beginning of February to the end of April 2019. The study tested 10% of the sample from above mentioned setting; it was conducted to evaluate the simplicity, practicability, legibility, understandability, feasibility, validity, and reliability of the tools, it was also used to find the possible problems that might face the researcher and interfere with data collection to estimate the time needed to fill in the sheets. Those who shared in the pilot study were excluded from the main study sample.

Field work:

After an official permission was granted from the Dean of Faculty of Nursing Ain Shams University to doctor managers of all Cairo Curative Organization's Hospitals. The researcher reviewed the current, past local and international literature in various aspects related to the field of the study to be acquainted with in depth information about stress, dietary pattern, and obesity among technical nursing students in order to design the study tools.

Ethical consideration:

The ethical research consideration in the study includes the research approval obtained an approval to conduct the research study, received official permission from the following authorities: **Faculty of Nursing Ain Shams University,** Dean and members of ethical committee issued letter to responsible authorities at all nursing institutes of Cairo Curative Organization's Hospitals to get permission to carry out the study. **Nursing institutes of Cairo Curative Organization's Hospitals,** responsible authorities (Hospital Manager) at all Cairo Curative Organization's Hospitals gave approval to conduct the research study in all institutes. **After securing official requirements for carrying out this study,** the subjects were informed about choosing to participate or not and about their right to withdraw at any time without giving any reason, and that data collected were be only used for the purpose of the study. Explanation of the aim and the nature of this study to the students with reassurance about confidentiality information given and that it will be used for scientific research only.

Administrative design:

An official approval was obtained from the Dean of Faculty of Nursing Ain Shams University to doctor managers of all Cairo Curative Organization's Hospitals, letter containing the title and the aim in order to get the permission and help for data collection, which lasted about three months for two days weekly.

Statistical design:

The statistical analysis of data was done by using Computer Software for Excel Program and the Statistical Package for the Social Science (SPSS) software program version 18. First parts of data were descriptive data which were revised, coded, tabulated and statistically analyzed using the proportion and percentage, the arithmetic mean, and standard deviation. Second parts of statistical analysis were relational data; chi-square test and p-value were used to test the association between variables.

- Degree of significance of results were
- P-value > 0.05 Not Significant (NS).
- P-value ≤ 0.05 Significant (S).
- P-value ≤ 0.001 Highly Significant (HS).

Results

Table (1): Shows that more than half (51.8%) of technical nursing students under study were in age from 16- >18y and the majority of them (90.6%) were

single. As regard to their family size, it was found that more than half (61.2%) were in family size constitute of 5 to 6 persons and (65.9%) had inadequate family income and more than half (57.6%) had positive family history of obesity. Regarding Body Mass Index (BMI) of technical nursing students under study, it was found that near two third (64.7%) were overweight (25->30) and near three quarters (74.1%) had moderate life pattern.

Figure (1): Reveals that near two thirds (64.70%) of technical nursing students under study were overweight and more than one third (35.30%) were obese.

Table (2): Reveals that, more than half (55.3%) of technical nursing students under study had low food compulsion level, while (44.7%) of them had a high compulsivity level.

Table (3): Shows that more than three quarters (77.6%) of technical nursing students under study had moderate level of stress, while only (18.8%) had mild level of stress and only (3.5%) had severe level of stress.

This table shows that, more than one third (41.1%) of technical nursing students under study who were single were having high compulsivity and near one third (30.6%) of technical nursing students under study whose their body mass index between 25 and 30 were having high compulsivity. Also, it was found that there was a statistically significant relation between level of food compulsion among technical nursing students under study and their family size and their body mass index with P- Value (<0.05).

Table (5): Shows that, there was a positive correlation between overweight, obesity and level of stress among technical nursing students under study.

Table (6): Shows that, there was a positive correlation between overweight, obesity and level of dietary pattern among technical nursing students under study.

Table (1): Number and percentage distribution of technical nursing students under study according to their Socio demographic characteristics N (85).

Items	No.=(85)	%
Age		
• 16 ≥ 18y	44	51.8
• 18 ≥ 20y	24	28.2
• + 20y	17	20.0
Mean + SD 17.8824 +1.44265		
University level		
• First	18	21.2
• Second	17	20.0
• Third	18	21.2
• Fourth	14	16.5
• Fifth	18	21.2
Marital Status		
• Single	77	90.6
• Married	8	9.4
Family Size		
• 3-4 person	28	32.9
• 5-6 person	52	61.2
• More than 6	5	5.9
Family Income		
• Inadequate	56	65.9
• Adequate	5	5.9
• Barrenly adequate	24	28.2
Family History		
• Positive	49	57.6
• Negative	36	42.4
Body Mass Index		
• Overweight (25 ≥ 30)	55	64.7
• Obesity (more than30)	30	35.3
Life Pattern		
• Low	9	10.6
• Moderate	63	74.1
• Active	13	15.3

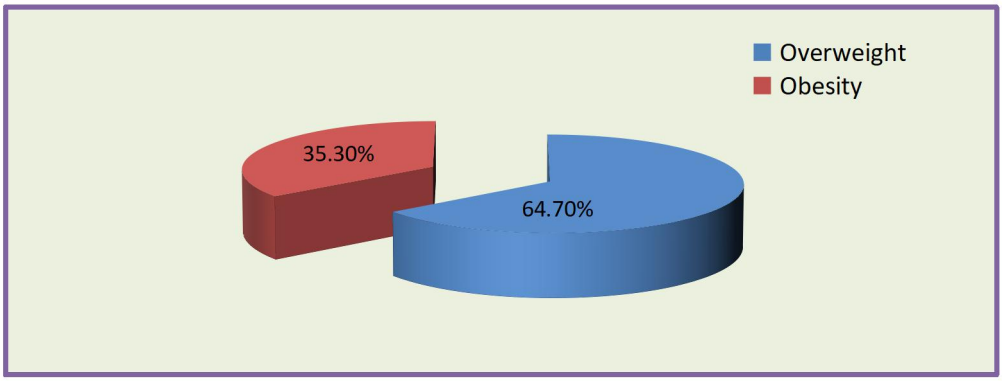

Figure (1): Distribution of technical nursing students under study according to their body mass index (BMI).

Table (2): Total level of food compulsion among technical nursing students under study N (85).

Items	No.(85)	%	X^2	P- Value
Level of Food Compulsion				
• Low compulsivity	47	55.3		
• High compulsivity	38	44.7	85.000	<.05

Table (3): Total level of stress among technical nursing students under study N(85).

Items	No.(85)	%	X^2	P- Value
Level of stress				
• Mild	16	18.8		
• Moderate	66	77.6	88.469	<.05
• Severe	3	3.5		

Table (4): Relationship between level of food compulsion and socio demographic characteristics of technical nursing students under study N(85).

Items	Low		High		X^2	P-Value
	No.	%	No.	%		
Age						
• 16 ≥ 18y	25	29.4	19	22.4	.092	>.05
• 18 ≥ 20y	13	15.3	11	12.9		
• + 20y	9	10.6	8	9.4		
\University level						
• First	13	15.3	5	5.9	4.104	>.05
• Second	9	10.6	8	9.4		
• Third	11	12.9	7	8.2		
• Fourth	6	7	8	9.4		
• Fifth	8	9.4	10	11.7		
Marital Status						
• Single	42	49.1	35	41.1	.186	>.05
• Married	5	5.9	3	3.5		
Family Size						
• 3-4 person	12	14.1	16	18.8	6.413	**<.05**
• 5-6 person	34	40	18	21.2		
• More than 6	1	1.2	4	4.7		
Family Income						
• Inadequate	30	35.3	26	30.6	3.843	>.05
• Adequate	1	1.2	4	4.7		
• Barrenly adequate	16	18.8	8	9.4		
Family History						
• Positive	26	30.6	23	27	.233	>.05
• Negative	21	24.7	15	17.6		
Body Mass Index						
• 25 ≥ 30	29	34.1	26	30.6	14.15	**<.05**
• more30	18	21.2	12	14.1		
Life Pattern						
• Low	2	2.4	7	8.2	4.488	>.05
• Moderate	8	9.4	5	5.9		
• Active	37	43.5	26	30.1		

Table (5): Correlation between overweight, obesity and level of stress among technical nursing students under study N(85).

Variable	R	P- Value
• **Overweight and obesity** • **Level of stress**	0.64	0. 000

Table (6): Correlation between overweight, obesity and level of dietary pattern among technical nursing students under study N(85).

Items	R	P- Value
• **Overweight and obesity** • **Level of dietary pattern**	0.094	.000

Discussion

The results of the present study revealed that, more than half of technical nursing students under study were in age from sixteen to eighteen years and had positive family history of obesity in addition to the majority of them were single. As regard to their family size, it was found that more than half of them were live in family constitute of five to six persons.

The findings of the present study shows that near two third of technical nursing student were overweight. This results are supported by **Pires & Mussi (2017)**, who studied excess weight in nursing junior and senior undergraduate students and found that percentages of overweight nearly two fifth and obesity I and II one sixteen are added together, as they reach more than half of the students and the rest of students founded to be with good nutrition .

This results also agree with **Salazar Blandón, Castillo León, Pastor Durango, Tejada-Tayabas & Palos Lucio (2016),** who studied anxiety, depression and physical activity associated obesity in students of Mexican universities and found that there was increase in the prevalence of overweight and obesity represents more than one third of total students from two Mexican universities.

This results are contradicting with **Al-Mahmoud (2013),** who studied eating habits and obesity and their relationship with certain socio-demographic characteristics among Saudi Nursing Students at the University of Dammam and found that more than one third of nursing students were under weight. From the researcher point of view, the results of current study may be due to modern lifestyle favors weight gain. Eating fast and using call phone during meals are obstacles to satiation. Reduced sport practice and lower daily energy expenditure are also mechanisms that influence weight gain, which may be related to lack of time and the dynamics of academic life.

Regarding dietary pattern among technical nursing students under study. The results of the present study clarified that, two fifth of technical nursing students under study were prefer to eat snacks between the main meals.

This results is consistent with **El Sayed, El-Shafei & Toprak (2015),** who studied Influence of dietary habits of university students on body mass index (BMI)A comparative study among Egypt and Saudi Arabia and turkey and found that most of the studied sample in Egypt consumed fast food weekly, while in Turkey the majority of participant, sometimes consumed fast food.

Contradiction to this results a study done by **Qureshi, Al-abed, Rizal & Al-junid (2012),** who studied that Social and psychological factors affecting eating habits among university students in a Malaysian medical school and reported that only very few number of respondents visited fast food restaurants frequently.

Regarding level of food compulsion among technical nursing students under study, the results of the present study showed that, near two thirds of technical nursing students under study were eating because they were feeling lonely more than one a week, near half of them were feeling completely out of control when it comes to food more than one week. Also, more than half of technical nursing students under study were eating so much even their stomach hurts more than one week, and were eating too much because they are upset or nervous more than one week.

This study finding contradicting with the results of another study conducted by **Montazerfar, Karajibani & Dashipour (2012),** who studied the evaluation of dietary intake and food patterns of adolescent girls in Sistan and Baluchistan Province on university students, and found that, university students usually omitted meals, the mainly skipped meal was lunch, the first reason for skipping meal was not having enough time and the students have unbalanced eating habit.

Regarding level of stress among technical nursing students under study, the result of the present study explained that, more than half of technical nursing students under study were very often feel nervous and stress also more than two fifth angered because of things that happened outside of their control. Meanwhile, it was found that sometimes more than one third of technical nursing students under study were not coping with all things that they had to do. Furthermore, the result of the present study revealed that, more than three quarters of technical nursing students under study had moderate level of stress, while about one fifth of them had mild level of stress and severe level of stress.

This results supported by **Sabzevari (2017),** who studied coping strategies among nursing students for dealing with stress in clinical setting and found that more than half of nursing students in his study were so stressed and not coping with stress until they are so stressed.

Regarding to the relationship between level of stress and socio demographic characteristics of technical nursing students under study the current study demonstrated that more than one third of technical nursing students under study who were in age from 16 to 18years were have a moderate level of stress and more than two thirds of them were single and also had a moderate level of stress.

This finding is similarly with the study conducted by **Mudambi & Rajagopal (2016)**, in New Delhi who shows that the most of the respondents are experiencing moderate and severe stress when they are doing clinical practice in the hospital. There are more than half respondents who are experiencing medium stress and nearly half respondents who are experiencing severe stress.

This result disagree with **Cwerner & Gadsby (2014)**, in a study about healthy eating and health behaviors among nursing student who illustrated that the result of students' body mass index shows most of them is in a normal state that there was more than three fifth of students have BMI between 18.5 until 24.9.

Conclusion:

In the light of the current study results, it can be concluded that, near two third of technical nursing students under study were overweight and more than one third were obese and had unhealthy dietary pattern, while only more than one third had a healthy dietary pattern. Also, more than half those under study had low food compulsion level, more than three quarters of technical nursing students under study had moderate level of stress. Also it was founded that there was a statistically significant relation between level of dietary pattern among technical nursing students under study and their university level, marital status, family history, body mass index and life pattern and there was a positive correlation between level of dietary pattern and level of stress among technical nursing students under study. In addition to that there was a positive correlation between overweight, obesity and level of stress

among technical nursing students under study.

Recommendation

- Primary Health care workers in educational institutions should educate students on their nutritional needs and how it affects their nutritional status.
- Future studies should be done on large numbers of nursing students about their eating behavior and how they decrease their stress level.
- Establish a psycho-educational program for nursing students to learn them how to cope positively with their stressors.
- Training program and courses on dietary pattern and nutritional needs would help nursing students to enhance their weight and decrease risk for obesity.

References

Adeyemi, W. J., Olayaki, L. A., Abdussalam, T. A., Toriola, A. P., Olowu, A. B., Yakub, A. J., & Raji, A. O. (2020). Investigation of the effects of dietary modification in experimental obesity: low dose of virgin coconut oil has a potent therapeutic value. Biomedicine & Pharmacotherapy, 126, 110110**.**

Alebshehy, R., Shuaib, N. M., Mbako, J. D., Barffo, D., & Nuotol, R. K. (2016). Determinant analysis of obesity among adult females in Egypt. The Egyptian Journal of Hospital Medicine, 65(1), 662-669.

Al- Mahmud, S (2013): Eating habits and obesity and their relationship with certain socio-demographic characteristics among Saudi Nursing Students at the University of Dammam. Journal of American Science, 9(8):234-242.

Bryant, E. J., Rehman, J., Pepper, L. B., & Walters, E. R. (2019). Obesity and eating disturbance: the role of TFEQ restraint and disinhibition. Current obesity reports, 8(4), 363-372.

Bremner, J. D., Moazzami, K., Wittbrodt, M. T., Nye, J. A., Lima, B. B., Gillespie, C. F., ... & Vaccarino, V. (2020). Diet, Stress and Mental Health. Nutrients, 12(8), 2428. DOI:10.3390/nu12082428. www.mdpi.com/journal/nutrients

Cwerner S, Gadsby D. (2014): Healthy eating health behaviours joint strategic needs [Internet]. Available from: https://www.lancashire.gov.uk/media/899796/healthy-eating-updated-links-oct-2016.pdf.

Ecker, O., Al-Riffai, P., Breisinger, C., & El-Batrawy, R. (2016). Nutrition and economic development: Exploring Egypt's exceptionalism and the role of food subsidies. International Food Policy Research Institute. Available at https://www.google.com/books?hl=ar&lr=&id=-wSMDQAAQBAJ&oi=fnd&pg=PA253&dq=Ecker,+O.,+Al-Riffai,+P.,+Breisinger,+C.,+%26+El-Batrawy,+R.+(2016).+Nutrition+and+economic+development:+Exploring+Egypt%27s+exceptionalism+and+the+role+of+food+subsidies&ots=n5t2qsc-De&sig=XVWpQfyZz9IWe6mdYcntFdD0JVw

El Sayed, H., El-Shafei, M. and Toprak, L. (2015): Influence of dietary habits of university students on body mass index (BMI) :A comparative study among Egypt and Saudi Arabia and turkey. Fırat University Journal of Social Science; 25(2): 315-328.

Gatti, E., Ionio, C., Traficante, D., & Confalonieri, E. (2014). "I Like My Body; Therefore, I Like Myself": How Body Image Influences Self-Esteem—A Cross-

Sectional Study on Italian Adolescents. Europe's Journal of Psychology, 10(2), 301-317.

Heerman, W.J., Jackson, N., Hargreaves, M., Mulvaney, S.A., Schlundt, D., Wallston, K.A., & Rothman, R. L. (2017). Clusters of healthy and unhealthy eating behaviors are associated with body mass index among adults. Journal of nutrition education and behavior, 49(5), 415-421.

Lee, K., Dale, J., Guy, A., & Wolke, D. (2018). Bullying and negative appearance feedback among adolescents: Is it objective or misperceived weight that matters?. Journal of Adolescence, 63, 118-128. DOI: https://doi.org/10.1016/j.adolescence.2017.12.008.

Montazerfar, F., Karajibani, M. and Dashipour, A. (2012): Evaluation of dietary intake and food patterns of adolescent girls in Sistan, and Baluchistan Province, Iran. Journal of Functional Foods in Health and Disease; 2(3), 62-71.

Mudambi, S.R & Rajagopal, M.V. (2016): Fundamentals of Foods and Nutrition.4-ed. (New Age International Limited Publishers, New Delhi.

Pires, C. G. D. S., & Mussi, F. C. (2017). Excess weight in nursing junior and senior undergraduate students. Escola Anna Nery, 20(4): e20160098. DOI: https://doi.org/10.5935/1414-8145.20160098. Available from: http://www.scielo.br/scielo.php?pid=S1414-81452016000400215&script=sci_arttext&tlng=en

Qureshi, A., Al-abed, A., Rizal, A. and Al-junid, S. (2012): Social and psychological factors affecting eating habits among university students in a Malaysian medical school: a cross-sectional study. Nutr J; (11): 48.

Sabzevari, S. (2017): Coping strategies of nursing students for dealing with stress in clinical setting: A qualitative study. Electronic Physician, 9 (12), 6120-6128.

Salazar Blandón, D. A., Castillo León, T., Pastor Durango, M. D. P., Tejada-Tayabas, L. M., & Palos Lucio, A. G. (2016). Anxiety, depression and physical activity associated with overweight/obesity in students from two mexican universities. Hacia la Promoción de la Salud, 21(2), 99-113.