

Impact of Stress on Food Intake: A Comparative Study among Boys and Girls

OPEN ACCESS

Volume: 7

Issue: 2

Month: October

Year: 2019

P-ISSN: 2321-788X

E-ISSN: 2582-0397

Received: 22.05.2019

Accepted: 18.09.2019

Published: 01.10.2019

Citation:

Bhavani, V., and N. Prabhavathy Devi. "Impact of Stress on Food Intake: A Comparative Study Among Boys and Girls." *Shanlax International Journal of Arts, Science and Humanities*, vol. 7, no. 2, 2019, pp. 70–75.

DOI:

<https://doi.org/10.34293/sijash.v7i2.593>



This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License

V. Bhavani

Dietician, ESIC Medical College and Hospital, Chennai, Tamil Nadu, India

N. Prabhavathy Devi

Assistant Professor, Queen Mary's College for Women, Chennai, Tamil Nadu, India

Abstract

Background: Students from metropolitan cities were more prone to stress due to their lifestyle, curriculum, availability of gadgets and many other social factors. Earlier studies also proved that stress has an impact on food intake, either hyperphagia or hypophagia. Since students are the future pillars of the nation, the present study has been carried out to know the impact of stress on the students of a metropolitan city like Chennai.

Aim: To study the impact of stress on food intake of the study

Methods and Tools: 1000 samples (500 males and 500 females) from Chennai colleges were selected using the stratified and simple random technique. A pre-tested interview schedule was used to collect the information. The obtained data were subjected to statistical analysis and results were discussed

Results: Majority of the students (40.7) cope with stress by watching TV. About 88% male and 12% female prefers to go out and eat. 47% and 29.9% subjects respectively consume more and less food during stress. About 37.5%, consumes more food at the sight of their favourite food. When reasons for the poor eating habits were analyzed, the majority of the participants (57.6%) mentioned lack of time, 23.5% reported lack of money, and 18.9% mentioned taste.

Conclusion: Stress impacts on consumption of caloric dense food rather than nutrient-dense food. Students must be educated not to indulge in consuming dense energy food as a method to cope up stress. Parents and college authorities must take responsibilities to help students to relieve from stress and make them indulge in the healthy eating pattern rather than consuming junks foods to overcome stress.

Keywords: Hypophagia, Hyperphagia, Eating Habits, Favourite food, coping stress, emotional eaters.

Introduction

Stress is defined as any general response of the body that either overwhelms or threatens to overwhelm the body and its ability to maintain homeostasis (Dyson, 2006) In general, stress occurs when there are demands on an individual that exceed her or his coping capabilities, and the reaction to stress may vary depending on the nature of the events that are occurring and the characteristics of the individual (Dyson, 2006). Stress is now considered as a global problem resulting in negative effects on human health.

Earning high grades is not the only source of stress for college students. Other potential sources of stress include excessive unclear assignments, homework, and uncomfortable classrooms. In addition to academic expectations and relations, requirements with faculty members and time pressures may also be sources of stress. Relationships with friends and family, eating and sleeping habits and loneliness may affect some students adversely (Ross, 1999). Stress alters eating behaviour, redirecting food choices to food with greater palatability and energy value, especially those high in sugar and fat intake.

The effects of stress on food consumption seem to differ according to individual characteristics (Fernanda Rodrigues de Oliveira, 2016).

Primary Objectives

- To study the impact of stress on food intake of the study population

Secondary Objectives

- To compare reasons for poor eating habits and the impact of mood on eating habits among male and female students.

Review of Literature

Individuals have been found to respond to stress with either reduced (hypophagia) or increased food intake (hyperphagia) (Ameera J Elshurbjy, 2017). Some studies have shown that stressed individuals tended to increase consumption of high calorie and high fat snack foods which may culminate in weight gain and obesity while there is widespread scientific acceptance of a relationship between psychological stress and eating behaviours the findings are inconsistent.

A growing number of evidence has revealed that food consumption would affect our feeling. (Christensen, 2001). It has been demonstrated that the consumption of carbohydrate-rich food is related to enhanced mood and may reduce anger. On the contrary, there are studies that indicate food consumption could not affect stress level (Hamidreza Roohafza, 2013). In a cross-sectional analysis of college students from Poland, Germany, and Bulgaria, none of the food consumption subscales of the food frequency questionnaire was associated with perceived stress or depressive symptoms in male students. In the female students, higher consumption of carbohydrate-dense snacks and sweets was associated with higher stress, and lower consumption of fruits and vegetables was associated with both higher stress and greater depressive symptoms (Mikolajczyk, 2009). High-calorie dense foods that individuals tend to consume during stressful times contribute to the increasing trend of obesity. Past research concluded that stress-induced eaters are consuming foods higher in sugar and fat content, as well as greater portion sizes, within the

adult population (Ameera J Elshurbjy, 2017).

Recent findings suggest that high levels of stress can be associated with both increased (saturated fat consumption) and decreased (overall calories) food intake (Wardle, 2000). Other research has found stress to be associated with an increase in food consumed as snacks in adults (Conner, 1999). Grunberg, 1992 et al. found that when stressed, women were more likely to select foods high in calories and fat. Oliver et al. (2000) found an increase in the consumption of sweet high fat food and more energy-dense foods.

Steptoe, (1998) et al. found that “fast food” was eaten more frequently when individuals reported a greater number of thoughts, events, or situations which produce negative feeling such as annoyance, irritation, worry or frustration. Taken together, these results suggest that individuals, when stressed, may shift their preference to more palatable and energy-dense snack foods. Two other studies reported that when distressed, their female study participants appeared to lose control of their eating habits which resulted in their consumption the unhealthy foods that they would usually avoid for health or weight motives.

The cake, chocolate and biscuits preferred by stressed emotional eaters are typically eaten as snacks. There is proof that snack consumption may be more susceptible to stress than meals. Oliver, 2000 tended to increase consumption of high calorie and high-fat snack foods. One explanation for the gender difference in food selection patterns during stress may be the tendency of females to restrict their diet for weight control when not stressed (Sira, 2010).

Methodology

Adopting stratified random sampling technique and simple random sampling technique, 1000 college students (500 males and 500 female) were selected from North Chennai Arts and Science colleges. Students with any other disease complication, those who were on any kind of medication or drugs, pregnant and lactating women were not selected for the study. Students in the age group of 19 to 22 years who belong to North Chennai college were only selected. A pre-tested and standardized interview schedule was used to collect the information

required for the present study. Questions such as methods of coping stress, mood and food and effect of stress on food intake were asked to the subjects. Before this, written consent was obtained from the study population by the researcher. Permission from college authorities was obtained to conduct the study in their respective colleges. Initially, Universal ethics committee approved the study. The students were briefed about the importance of the study, and required details were obtained from the subjects by

the researcher. After obtaining the details, the data were coded for statistical analysis. Using SPSS Version 20.0, statistical analysis was carried out for the present study and results were analyzed.

Results and Discussion

The influence of stress on an eating pattern of our study population is studied, and the results are presented in the forthcoming table.

Table 1 Methods of Coping Stress

Methods of coping stress and food		Male N=500	Female N=500	Total N=1000	Chi square level	P value
Methods of coping stress	Watching TV	115 (28.3)	292 (71.7)	407 [40.7]	232.285	<0.001**
	Chatting	91 (46.2)	106 (53.8)	197 [19.7]		
	Eating at home	60 (46.2)	70 (53.8)	130 [13.0]		
	Go out and eat	234 (88)	32(12)	266 [26.6]		
	Total	500 (50)	500 (50)	1000 [100]		
Stress and Food	Eating too much	299 (63.6)	171(36.4)	470 [47.0]	126.266	<0.001**
	Eating too less	69 (23.1)	230 (76.9)	299 [29.9]		
	No change	132 (57.1)	99 (42.9)	231 [23.1]		
	Total	500 (50)	500 (50)	1000 [100]		

Note: Values within () denote row percentage., Values within [] denote column percentage;
** denote 1% level significance

The above table showed that about 40.7% of the participants coped stress by watching TV. About 19.7% and 13% of the participants mentioned chatting and eating at home, respectively as the way to cope with stress. About 26.6% of the participants reported to go out and eat to cope with stress. It is surprising to note that about 46.8% of the male population prefers to go out and eat, and only 6.4% of female go out and eat.

A comparative study on stress and nurses stated that the stress busters for nurses were spending time with family followed by watching television and social gathering and meeting (Vijay Meera, 2012).

About stress and food intake, about 47% of the participants reported to overindulge during stress, and 29.9% reported to eat less during stress. Only 23.1% mentioned 'no change of eating pattern during stress'. A study conducted by Azza M.Abdel-Aziz (2014) revealed high positive correlations between uncontrolled eating habits and stress. The number of students with high-stress levels had poor eating scale. People living in a stressful society tend to eat more as a way of coping with stress (Gower et al., 2008). Most of the students go in for less food intake when stressed. Because of emotional disturbances, they might be having reluctance of having food (Jayaraj et al., 2014).

Table 2 Mood and Eating Habit

Mood and Eating Habit	Male N=500	Female N=500	Total N=1000	Chi square level	P value
Whenever depressed	18	32	50 [5.0]	37.722	<0.001**
Whenever excited	91	78	169 [16.9]		
During time of loneliness	37	53	90 [9.0]		
At the sight of favorite food	223	152	375 [37.5]		
When hungry	103	119	222 [22.2]		
With friends	28	66	94 [9.4]		

Note: Values within () denote row percentage); Values within [] denote column percentage);
** denotes 1% level significance

In the present study, about 37.5% and 22.2% reported to eat more at the sight of favourite food and when hungry. About 16.9% and 5% eat whenever they feel excited and depressed, respectively. About 9% consumed food when they feel lonely,

and 9.4% eat food when they are with friends. A study conducted by Walid Ansari (2015) showed that higher food intake was associated with lower perceived stress among Egyptian undergraduates.

Table 3 Reasons for Poor Eating Habits

Reasons	Male	Female	Total	Chi square level	P value
Lack of time	276 (47.9)	300 (52.1)	576 [57.6]	5.556	0.062
Lack of money	115 (48.9)	120 (51.1)	235 [23.5]		
Taste	109 (57.7)	80 (42.3)	189 [18.9]		
Total	500	500	1000 [100]		

Note: Values within () denote row percentage; Values within [] denote column percentage

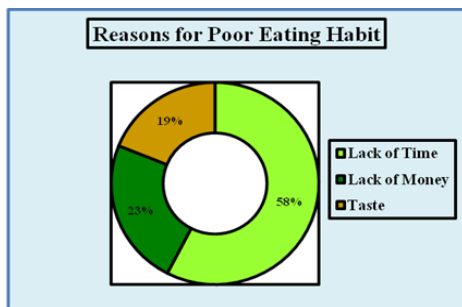


Figure- 1

When reasons for the poor eating habits were analyzed, the majority of the participants (57.6%) mentioned lack of time, 23.5% reported lack of money, and 18.9% mentioned taste. A poor eating habit is a major public health concern prevalent among young adults, especially those transitioning into university life, as they are exposed to stress and lack of time. Participants mentioned that the lack of consumption of traditional food is due to high costs, poor quality, lack of time, and limited access (El-Kassas et al., 2015).

Conclusion

The term stress is commonly used among youngsters, especially in metropolitan cities like Chennai. The heightened stress level is due to life style pattern, gadgets usage, curriculum pattern and due to their transitional phase from childhood to adulthood. In this phase, stress has an impact on their food patterns too. It might be hyperphagia or hypophagia.

It is clearly understood from our study, that stress impacts on consumption of caloric dense food rather than nutrient-dense food. This, in turn, might lead to over consumption of calories from processed foods, junks, carbonated beverages and finally ends up in overweight or obesity. It is essential to educate the students to cope up stress in a healthy way such as exercise, listening to music, reading the book or other activities.

Students must be educated not to indulge in consuming dense energy food as a method to cope up stress. It is the duty of parents and college authorities to help students to relieve from stress and make them indulge in the healthy eating pattern rather than consuming junks foods to come out from stress.

Limitation of the study

1. The study focused only on Arts and science college students
2. Only Chennai students were chosen for the study
3. Students between the age group between 19 to 22 years

Recommendation for Future Research

1. Present research should be carried out in all the age group
2. Stress and food intake studied among professional courses students
3. This kind of research should be carried out among rural students.

References

- Ameera J Elshurbjy et al. "Association between Stress and Dietary behaviours among University Students: Mini-Review." *Medical and Clinical Archives*, vol. 1, no. 2, 2017, pp. 3-3.
- Azzat, M. et al. "Relationship between Stress and Eating Habits among Nursing Students in Assuit University." *Medical Journal of Cairo*, vol. 82, no. 2, 2014, pp. 47-55.
- Christensen, L. et al. "Mood and Carbohydrate Cravings." *Appetite*, vol. 36, no. 2, 2001, pp. 137 – 145.
- Conner, M. et al. "Stress and Snacking: A Dietary Study of Daily Hassles and between-meal Snacking." *Psychology & Health*, vol. 14, 1999, pp. 51-63.
- Dyson, R. et al. "Freshmen Adaptation to University Life: Depressive Symptoms, Stress and Coping." *Journal of Clinical Psychology*, vol. 62, no. 10, 2006, pp. 1231-1244.
- El-Kassas. et al. "Obesity Risk Factors among Beirut Arab University Students in Tripoli-Labanan." *Journal of Nutrition and Food Science*, vol. 5, no. 8, 2015.
- De Oliveira. F.R. et al. "Association between Stress and Eating behaviour in College Students." *Demetra*, vol. 11, no. 1, 2016, pp. 225-237.
- Gower, B. et al. "The Relationship between Stress and Eating in College-aged Students." *Undergraduates Research Journal for the Human Sciences*, vol. 7, 2018.
- Grunberg, NE. et al. "The Role of Gender and Taste Class in the Effects of Stress on Eating." *Health Psychology*, vol. 11, 1992, pp. 97-100.
- Hamidreza Roohafza. et al. "The Association between Stress Levels and Food Consumption among Iranian Population." *Archives of Iranian Medicine*, vol. 16, no. 3, 2013, pp. 145-148.
- Jeyaraj, P.P. et al. "Prevalence of Overweight and Obesity among Students of a Medical College in South India: A Pilot Study." *Indian Journal of Clinical Practice*, vol. 25 no. 4, 2014, pp. 333-337.
- Mikolajczyk, RT. et al. "Food Consumption Frequency and Perceived Stress and Depressive Symptoms among Students in Three European Countries." *Nutrition Journal*, vol. 8, 2009.
- Oliver, G. et al. "Stress and Food Choice: A Laboratory Study." *Psychosomatic Medicine*, vol. 62, no. 6, 2000, pp. 853-865
- Sajjadi. et al. "The Association between Stress Levels and Food Consumption among Iranian Population." *Archives of Iranian Medicine*, vol. 16, no. 3, 2013, pp. 145-148.
- Ross, S. et al. "Sources of Stress among College Students". *College Student Journal*, vol. 33, 1999, pp. 312-318.
- Sira, N. et al. "Prevalence of Overweight and Obesity, and Dieting Attitudes among Caucasian and African American College Students in Eastern North Carolina: A Cross-sectional Survey." *Nutrition Research and Practice*, vol. 4, 2010, pp. 36-42.
- Steptoe, A. et al. "Stress, Hassles and Variations in Alcohol Consumption, Food Choice and Physical Exercise: A Daily Study." *British Journal of Health Psychology*, vol. 3, no. 1, 1998, pp. 51-63.
- Vijay Meera. et al. "A Comparative Study on Stress among Nurses in Private and Public Hospitals in Mumbai." *BVIMR Management Edge*, vol. 5, no.1, 2012, pp. 46-52.

- Walid EL Ansari. et al. “Nutritional Correlates of Perceived Stress among University Students in Egypt.” *International Journal of Environmental Research and Public Health*, vol.12, no. 11, 2015, pp. 14164-14176.
- Wardle, J. et al. “Stress, Dietary Restraint and Food Intake.” *Journal of Psychosomatic Research*, vol. 48, no. 2, 2000, pp. 195-202.

Author Details

V. Bhavani, *Dietician, ESIC Medical College and Hospital, Chennai, Tamil Nadu, India,*
Email ID: cvbhavani@yahoo.co.in.

Dr. N. Prabhavathy Devi, *Assistant Professor, Queen Mary’s College for Women, Chennai, Tamil Nadu, India.*