

Effect of academic stressors on eating habits among Undergraduate students of S.R.T.M. University, Nanded (MS), India.

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Abstract:

Stress is a common phenomenon among undergraduate students, especially those in their first year of college. Transitioning from high school to the college environment might increase perceived stress levels, thus affecting eating habits and metabolism among students. The purpose of this study was to investigate the eating habits of Swami Ramanand Teerth Marathwada University, Nanded undergraduate students. The present study was undertaken among undergraduate students to explore the stress associated alterations in their eating habits. The present study covers a cross-sectional survey conducted on 225 undergraduate students of which 113 males and 112 are females. A self-administered questionnaire was used, which included questions on socio-demography and eating habits. This is the first comprehensive study from Nanded district (MS) to show stress associated dietary alterations in undergraduate students. Present data concluded that most of the young students followed a healthy eating pattern, but a significant number from them were affected by stress. Therefore, our findings revealed that the importance to develop a specific intervention program to decrease stress in college students. We also suggest that the development of accurate university/college programs with resources well programmed and well established, development of the educational program to promote healthy eating habits, to decrease the academic stress in undergraduate students.

Keywords: Academic stress, undergraduate students, eating habits, Nanded district.

Introduction:

Stress is now considered a global problem, and studying it has gained prominence in the scientific literature because of the multitude of negative effects on human health (Joca SR et al., 2003). Stress alters the overall behaviour of eating which may be in either way, over or under-eating, but

continuous stress has directly or indirectly had a link with the intake of junk food preference, and now scientific evidence concludes that prolonged life stress has directly linked with almost all human disorders (Schneiderman N et al., 2005; Rasheed N. 2017). These stress-associated alterations in the eating behaviour are assumed to be temporary at this stage when persistent to older life, this might have led to several health problems (Lee CS and Dik BJ. 2017). The level of stress can be high among undergraduate students according to different studies (Rosal MC et al., 1997; Stewart SM et al., 1999). This problem harms the cognitive functions and learning skills of the students (Styles WM. 1993).

Besides taste, convenience is the most important for food choices among undergraduate students (Marquis M. 2005). Thus, fast food consumption is common among the eating habits of students (Morse, K.L. and Driskell, J.A. 2009). Now it is well documented that young adult, including university undergraduates, were unsuccessful to follow the WHO-recommended health food intakes (Huang TT et al., 2003.). In recent years, several studies have pointed that stress is responsible for affecting eating habits among undergraduate students and it was found to be associated with poor eating habits which lead to induce serious health problems (Vidal EJ et al., 2018).

Therefore, the present study is hypothesized to determine the levels of stress among undergraduate students and to investigate whether stress-associated alterations affect their eating habits.

Materials and Methods:

This is a cross-sectional survey performed on undergraduate (Junior and Senior college students) of S. R. T. M. University, Nanded from March 2018 to Jan 2019. Twelve colleges have participated in the survey (Table 1), and data were obtained by using a simple random sampling technique. A total of 225 students participated in the study, among them, 113 were males, and 112 participants were females. Present information was collected from the section of the questionnaire comprised of questions such as age, marital status, weight, height, Body Mass Index (BMI), parent's education level, family monthly income, residential details, and general health. Whereas, the levels of stress were assessed by the self-response given by the participants. To determine whether stress-induced triggering of unhealthy food items, such as fast foods (such as burgers, pizza, chicken nuggets, sausage, hot dogs, fries, etc.); snacks (such as chips, cakes, brownies, cookies, chocolates, muffins, doughnuts, pastries, ice cream, milkshake, etc.); and beverages (fruit juice, tea, coffee, soft drink, and energy drinks). Moreover, we also determine whether stress affects healthy eating habits; fruits and vegetables. The questionnaires were designed to collect data on junk foods based on the participant's selection.

Table 1: Name of Colleges participated during the survey from S.R.T.M. University, Nanded.

Sr. No.	Name of College	No. of Students	Percentage (%)
1	N.S.B. College	49	21.77
2	Yeshwant College	46	20.44
3	Science College	17	7.5
4	M.G.M. College	11	4.8
5	P.N. College	10	4.44
6	People's College	9	4
7	Govt. Polytechnic College	7	3.11
8	S.G.G.S. College	7	3.11
9	Shivaji College	7	3.11
10	Savitribai Phule College	7	3.11
11	Blue Bell College	6	2.6
12	Other Colleges	49	21.77
	Total	225	

Results and Discussion:

The demographic characteristics of the respondents are shown in Table 2. The survey collected from 38.22% junior college students and 61.77% senior college students as described previously (Ganasegeran K et al., 2012; Ahmed F et al., 2014). Males represented 50.22% of the respondents and 49.77% were female. Most of the respondents answered that they lived alone (49.77%). Out of all respondents, 41.77% were vegetarian and 58.22% were vegetarian and non-vegetarian as well. The majority of the respondents consume fruits (96.88%) regularly. The respondents reported that they drink different types of beverages: Sprite (16.44%), Cold Drink (15.78%), Maza (11.84%), Soft Drink (11.84%), Coca Cola (10.52%), Thumbs Up (6.57%), Fruit Juice (5.92), Fruity (4.6%), Appy Fizz (2.63%), Beer (1.97%), Pepsi (1.31%) and Other (10.52%) 1–2 times per week (Table 2).

Table 2. Characteristics of respondents regarding demographics and Food, Fruit, and Beverage's consumption.

Characteristics		Frequency	Percentage (%)
Sex	Male	113	50.22
	Female	112	49.77
Academic year	Junior College students	86	38.22
	Senior College students	139	61.77
Place of residence	Board and lodging	75	33.33
	With parents	38	16.88
	Alone	112	49.77
Food Type	Vegetarian	94	41.77
	Veg and Nonveg	131	58.22
Fruit consumption	Yes	218	96.88
	No	7	3.11
Types of Beverages	Sprite	25	16.44
	Cold Drink	24	15.78
	Maza	18	11.84
	Soft Drink	18	11.84
	Coca Cola	16	10.52
	Thumbs Up	10	6.57
	Fruit Juice	9	5.92
	Fruity	7	4.6
	Appy Fizz	4	2.63
	Beer	3	1.97
	Pepsi	2	1.31
	Other	16	10.52

Out of 225 undergraduate students of S. R. T. M. University Nanded, 38.22% were aged between 18-20 years, whereas 61.77% were above or equal to 21-26 years old (Table 3). The collected data showed that only 64.88% of participants were consume breakfast daily, (11.11%) occasionally, (13.77%) rarely whereas 10.22% never breakfast. Students aging between 16-20 years consume daily (67.74%), occasionally (6.45%), rarely (16.12%), and 9.67% of students never breakfast whereas, students aging between 21-26 years consume daily (62.87%),

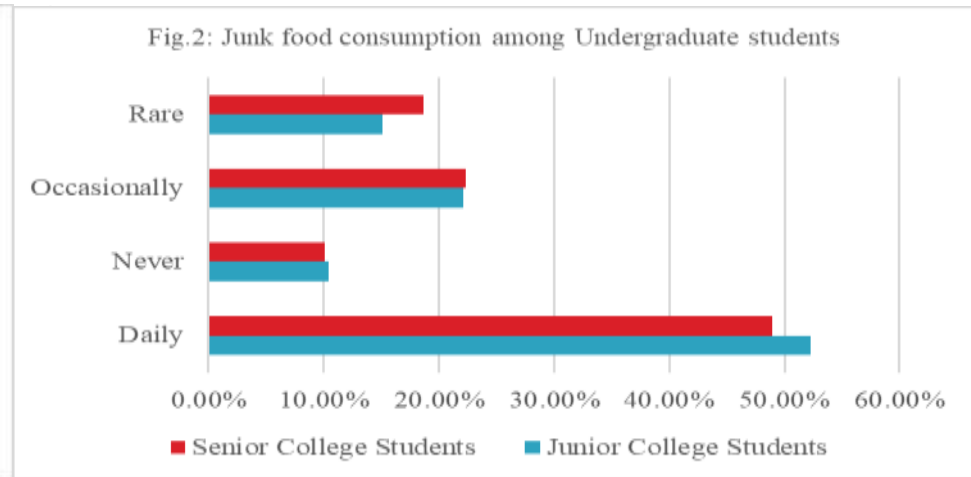
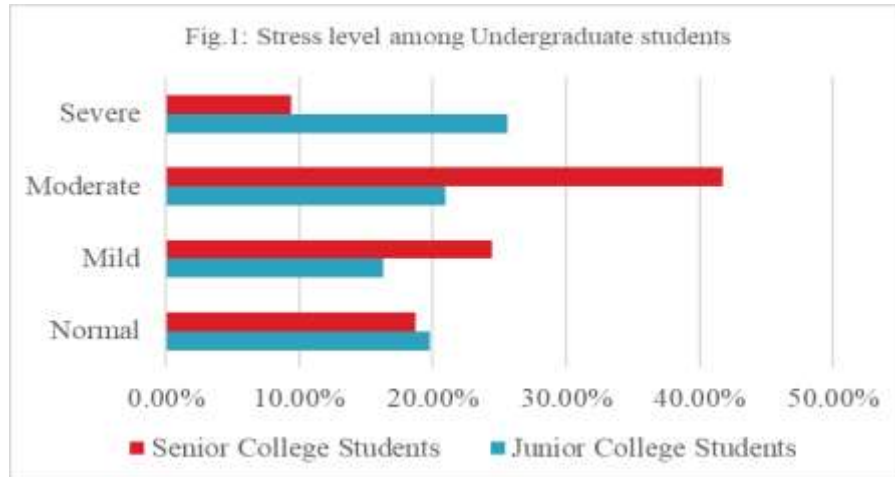
occasionally (14.39%), rarely (12.12%), and 10.60% students never breakfast. Among undergraduates, junior college students consume breakfast daily (16.27%) and whereas senior college students consume daily (41.72%) breakfast (Table 3).

To know the complete status of undergraduate students, general health is calculated by using body mass index (BMI). BMI were calculated based on self-reported height (cm) and weight (kg) by the respondents. BMI results showed that (Table 3) 57.52% of male participants were normal, 33.62% are underweight, 8.84% found overweight, whereas 29.46% of female participants were normal, 64.28% are underweight, 6.25% found to be overweight (Lim, J.U et al., 2017). In the present study, students aging between 16-20 years are found to be 63.85% underweight and 6.02% overweight, whereas students aging between 21-26 years are underweight (43.18%) and overweight (9.09%). The calculated BMI results showed that 54.65% of participants were underweight and 5.81% found to be overweight in junior college students, whereas 45.32% are underweight and 8.63% overweight among senior college students.

Table 3: Characteristics of respondents regarding Breakfast, Body mass index (BMI), Stress, and Junk food.

Characteristics	Gender			Age			Undergraduate students		
	Male	Female	Total	16-20 years	21-26 years	Total	Junior College students	Senior College students	Total
Breakfast									
Daily	65(57.52%)	81(72.32%)	146(64.88%)	63(67.74%)	83(62.87%)	146(64.88%)	14(16.27%)	58(41.72%)	72(32%)
Never	17(15.04%)	06(5.35%)	23(10.22%)	09(9.67%)	14(10.60%)	23(10.22%)	26(30.23%)	22(15.82%)	48(21.33%)
Occasionally	18(15.92%)	07(6.25%)	25(11.11%)	06(6.45%)	19(14.39%)	25(11.11%)	19(22.09%)	31(22.30%)	50(22.22%)
Rare	13(11.50%)	18(16.07%)	31(13.77%)	15(16.12%)	16(12.12%)	31(13.77%)	27(31.39%)	28(20.14%)	55(24.44%)
Total	113	112	225	93	132	225	86	139	225
BMI									
Normal	65(57.52%)	33(29.46%)	98(48.55%)	35(42.16%)	63(47.72%)	98(43.55%)	34(39.53%)	64(46.04%)	98(43.55%)
Underweight	38(33.62%)	72(64.28%)	110(48.88%)	53(63.85%)	57(43.18%)	110(48.88%)	47(54.65%)	63(45.32%)	110(48.88%)
Overweight	10(8.84%)	07(6.25%)	17(7.5%)	05(6.02%)	12(9.09%)	17(7.5%)	05(5.81%)	12(8.63%)	17(7.55%)
Obese	00	00	00	00	00	00	00	00	00
Total	113	112	225	93	132	225	86	139	225
Stress									
Normal	19(16.81%)	17(15.17%)	36(16%)	24(25.80%)	30(22.72%)	54(24%)	17(19.76%)	26(18.70%)	43(19.11%)
Mild	29(25.66%)	28(25%)	57(25.33%)	19(20.43%)	25(18.93%)	44(19.55%)	14(16.27%)	34(24.46%)	48(21.33%)
Moderate	27(23.89%)	25(22.32%)	52(23.11%)	21(22.58%)	48(36.36%)	69(30.66%)	18(20.93%)	58(41.72%)	76(33.77%)
Severe	21(18.54%)	20(17.85%)	41(18.22)	16(17.20%)	17(12.87%)	33(14.66%)	22(25.58%)	13(9.35%)	35(15.55%)
Extremely severe	17(15.04%)	22(19.64%)	39(17.33%)	13(13.97%)	12(9.09%)	25(11.11%)	15(17.44%)	08(5.75%)	23(10.22%)
Total	113	112	225	93	132	225	86	139	225
Junk food									

Daily	16(14.15%)	21(18.75%)	37(16.44%)	20(21.50%)	17(12.87%)	37(16.44%)	45(52.32%)	68(48.92%)	113(50.22%)
Never	38(33.62%)	25(22.32%)	63(28%)	27(29.03%)	36(27.27%)	63(28%)	09(10.46%)	14(10.07%)	23(10.22%)
Occasionally	30(26.54%)	24(21.42%)	54(24%)	23(24.73%)	31(23.48%)	54(24%)	19(22.09%)	31(22.30%)	50(22.22%)
Rare	29(25.66%)	42(37.5%)	71(31.55%)	23(24.73%)	48(36.36%)	71(31.55%)	13(15.11%)	26(18.70%)	39(17.33%)
Total	113	112	225	93	132	225	86	139	225



In the present study, the data showed that a significant number of undergraduate students were suffered from some levels of stress. These results were fully supported by several studies performed previously in various regions of the globe (Gan WY et al., 2011; Wong JG et al., 2006; Stallman HM. 2010; Koochaki GM et al.,2011). Female respondents are found to be more extremely stressed (19.64%) than males (Papier K et al., 2010). Students aging between 16-20 years are more extremely stressed (13.93%) as compared to the 21-26 years age group. Among stressed participants, 16.27%, 20.93%, 25.58%, and 17.44% of participants suffered from mild, moderate, severe, and extremely severe stress in junior college students, whereas 24.46%, 41.72%, 9.35%, and 5.75% of participants suffered from mild, moderate, severe and extremely severe stressed in senior college students respectively (Fig.1). The complete stress levels with the number of participants under varying levels of stress are summarised in Table 3.

The data pointed out that the stressed participants were more preferred to eat junk foods. The collected data showed that female consume junk food daily (18.75%) as compared with males (14.15%). Students aging between 16–20-year age group consume daily (21.50%) junk food, which is quite higher than 21-26 age group students. More stressed respondents, junior college students consume higher and daily junk food (52.32%) over senior college students (Fig.2).

Conclusion:

In conclusion, to the best of our knowledge, this is the first comprehensive study from the Nanded district to show the association of stress and dietary behaviours among undergraduate students of S. R. T. M. University, Nanded. Moreover, differences were found in dietary habits based on the students age, sex residence type and most importantly stress. In the present study, we demonstrated that a significant number of undergraduates were having some levels of stress. Students with high stress showed less healthy dietary behaviours compared to students with low stress. The present study also showed that the frequency of junk food intake is higher among stressed respondents. In general, most of the undergraduate students studied in this study followed a healthy eating pattern and normal BMI, but still, stress was significantly associated with a large number of participants. The present study results show a clear difference in the food selection by the stressed and normal students, indicating that stress has a direct association with the dietary pattern and food selection (junk food) among studied young undergraduate students. These results strongly recommend specific intervention programs to reduce stress and to improve their food choices.

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Conflicts of Interest: The author declares no conflict of interest.

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