Original Article

Perceived Stress and Eating Behavior among Professional and Nonprofessional Undergraduate Students in Udupi District, Karnataka

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Abstract

Background: Stress is an unavoidable part of our life. Certain amount of stress is needed for our survival. Stress is one of the factors, which affects the health and eating habits of a person. **Objectives:** The aim of the study was to compare the perceived stress among professional and nonprofessional undergraduate students and to find out the relationship between eating behavior and perceived stress of undergraduate students. **Methods:** A comparative descriptive study was conducted from November 2017 to April 2018, among 400 undergraduate students from selected professional and nonprofessional colleges in Udupi District, Karnataka. Students were recruited using proportionate sampling technique. Data were collected using a self-administered questionnaire after obtaining informed consent of the study participants. **Results:** Statistically significant difference was found in perceived stress of professional and nonprofessional students ($Z = -2.397$, $P = 0.017$). There was a weak positive correlation between perceived stress and uncontrolled eating of professional students ($\rho = 0.162$, $P = 0.022$) and nonprofessional students ($\rho = 0.183$, $P = 0.009$). There was no association found between perceived stress and selected demographic variables such as age, gender, study course, year of study, type of family, and occupation of parents ($P > 0.05$). **Conclusions:** Perceived stress of professional students is more compared to nonprofessional students. Uncontrolled eating behavior is influenced by increase in stress, and perceived stress is independent of demographic variables.

Key words: Eating behavior, perceived stress, professional and nonprofessional colleges, undergraduate students

Introduction

Stress is an unavoidable part of our life. Certain amount of stress is needed for our survival. One of the concepts defines stress as the "thing" or "event" that precipitates or stimulates the physiological and psychological responses in a person or an individual. This can be either positive or negative.[1]

A cross-sectional study to determine the perceived stress in the 400 undergraduate nursing students using perceived stress scale (PSS) for assessing the stress shows that nursing students have high level of stress and female had more stress compared with males.[2] The present study was to compare the perceived stress among professional and nonprofessional undergraduate students and to find out the relationship between eating behavior and perceived stress of undergraduate students.

Stress is one of the factors, which affects the health and eating habits of a person. When an individual experiences stress, either they will eat more or will eat less. A study was conducted at Huntington University to identify the relationship between stress and eating habits in college-going students. Students between the ages of 18 and 23 years were taken part in the study. The result showed that the person who has more stress will have a tendency to eat more food and also found that males had more stress than females.[3]

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Materials and Methods

Comparative descriptive design (a type of descriptive research design) was used for the study. After obtaining administrative and institutional ethical committee permission (IEC 824/2017), the students of 1st-, 2nd-, and 3rd-year classes of professional and nonprofessional colleges were approached after taking informed consent. The period of study was from November 2017 to April 2018.

A total of 400 undergraduate students were recruited for the study using proportionate sampling technique. Out of these, 200 were professional and 200 were nonprofessional students. The sample size was based on pilot study. The age of undergraduate students ranged from 18 to 20 years. Participants were taken from different colleges of Udupi District, Karnataka. Colleges were selected through simple random sampling (lottery method of selection). First seven professional colleges (five nursing colleges and two engineering colleges) and five nonprofessional colleges (arts and science colleges) from Udupi District were selected using simple random technique (lottery method). Then, the departments of nonprofessional colleges (B. Com) and engineering colleges (computer science) were also selected using the same technique and the students (participants) were selected from each college through proportionate sampling technique. The study included undergraduate students of 1st-, 2nd-, and 3rd-year classes of professional and nonprofessional colleges and undergraduate students aged between 18 and 20 years and informed consent was taken from the participants before collecting the data.

The perceived stress and eating behavior were measured by standardized tools; PSS, Sheldon Cohen (r = 0.7–0.9) which consists of 10 items and three-factor eating questionnaire-21, and Jan Karlsson (r = 0.7–0.9) which comprises 21 items, which are aggregated to three separate scores – uncontrolled eating (9 items), cognitive restraint (6 items), and emotional eating (6 items). Another tool was factor influencing stress (r = 0.96), which consists of 22 items.

Results

Sample characteristics

Most of the students (91, 45.5%) of professional students and 92 (46%) of nonprofessional students were aged 18 years. Most of the professional students (65, 32.5%) and nonprofessional students (75, 37.5%) were females. Most of the students were from 1st year – 85 (42.5%) of professional students and 100 (50%) of nonprofessional students. Majority of the professional students (175, 87.5%) and nonprofessional students (115, 57.5%) were from nuclear family. Most of the professional students (109, 54.5%) and nonprofessional students (191, 95.5%) were day-scholars.

Comparison of perceived stress of professional and nonprofessional students

Stress is an uncomfortable emotional experience which occurs due to any physiological, biochemical, or behavioral changes and perceived stress is the stress perceived at a given point or over a given time period. It depends on the ability to cope up with the situation and varies from person to person.

Mean score of perceived stress of professional students was 18.8 ± 5.527 and that of nonprofessional students was 17.57 ± 4.877. The data show that the mean score of perceived stress of professional students is more than the mean score of nonprofessional students.

Majority (144, 72%) of professional students had stress due to overload of studies. Only 18 (9%) of professional students had stress due to combining job with studies (part-time job). Around 128 (64%) nonprofessional students had stress due to examinations and 34 (17%) nonprofessional students had stress due to adjustment problems with roommates/friends.

The data in Table 1 show that there is a significant difference between the perceived stress of professional students and nonprofessional students. The professional undergraduate students had more stress compared with nonprofessional undergraduate students.

Relationship between perceived stress and each domain of eating behavior

Majority of the professional students (150, 75%) and nonprofessional students (154, 77%) had moderate stress. Moreover, 16 (8%) professional students and 8 (4%) nonprofessional students had high stress. The data reveal that the majority of the professional students and nonprofessional had moderate stress.

Eleven (5.5%) professional students and 24 (12.6%) nonprofessional students had uncontrolled eating behavior. Nine (4.5%) professional students and 11 (5.5%) nonprofessional students had cognitive restraint behavior. Eight (4%) professional students and 7 (3.5%) nonprofessional students had emotional eating behavior.

Mean score of uncontrolled eating was more for professional students (21.24 ± 4.231) and nonprofessional students (21.84 ± 4.808) than that of other domain. There is difference in the mean score of cognitive restraint of professional students (12.28 ± 3.363) and nonprofessional students (13.10 ± 3.464), and also, there is a difference in the mean score of emotional eating of professional students (10.56 ± 3.664) and nonprofessional students (12.03 ± 3.464). The data reveal that the mean score of uncontrolled eating of professional students and nonprofessional students was almost equal. The

Table 1: Comparison of perceived stress of professional and nonprofessional Students (n=200+200)

Participants	Median	IQR	Z	P
Professional Students	19	8	−2.397	0.017*
Nonprofessional students	17.5	7		

*Significant P<0.05. IQR: Interquartile range

mean scores of cognitive restraint and emotional eating were more for professional students.

The data in Table 2 inferred that perceived stress had an effect on eating behavior. If the stress is more, they have uncontrolled eating behavior.

Association between level of perceived stress and demographic variables

The data in Table 3 show that there was no significant association between perceived stress and selected demographic variables such as age, gender, study course, year of study, type

Table 2: Relationship between perceived stress and each domain of eating behavior (*n*=200+200)

Variables	Professional students (*n*=200)		Non-professional students (*n*=200)	
	ρ	*P*	*ρ*	*P*
Perceived stress and uncontrolled eating	0.162	0.022*	0.183	0.009*
Perceived stress and cognitive restraint	−0.108	0.129	−0.010*	0.884
Perceived stress and emotional eating	0.021	0.771	0.116	0.101

*Significant $P<0.05$

Table 3: Association between level of perceived stress and demographic variables (*n*=400)

Sample characteristics	Perceived stress			χ^2, df, *P*
	Low (%)	Moderate (%)	High (%)	
Age				
18	33 (0.08)	136 (0.34)	12 (0.03)	2.132, 4, 0.712
19	23 (0.05)	115 (0.28)	8 (0.02)	
20	20 (0.05)	49 (0.12)	4 (0.01)	
Gender				
Male	30 (0.07)	100 (0.25)	10 (0.02)	2.468, 2
Female	42 (0.1)	204 (0.51)	14 (0.03)	
Study course				0.291
Nursing	13 (0.03)	81 (0.20)	7 (0.01)	5.988, 4, 0.208
Engineering	21 (0.05)	69 (0.17)	9 (0.02)	
Arts and science	38 (0.09)	154 (0.38)	8 (0.02)	
Year of study				
1st	32 (0.08)	142 (0.35)	11 (0.027)	0.363, 4, 0.985
2nd	28 (0.07)	115 (0.28)	10 (0.025)	
3rd	12 (0.03)	47 (0.11)	3 (0.007)	
Type of family				
Nuclear family	54 (0.13)	217 (0.54)	19 (0.04)	3.289, 4, 0.459
Joint family	18 (0.04)	81 (0.20)	4 (0.01)	
Single parent	0	6 (0.015)	1 (0.002)	
Occupation of mother				
Homemaker	59 (0.14)	238 (0.59)	21 (0.05)	3.71, 6, 0.540
Coolie	1 (0.002)	12 (0.03)	1 (0.002)	
Professional	4 (0.01)	25 (0.06)	1 (0.002)	
Others	8 (0.02)	29 (0.07)	1 (0.002)	
Occupation of father				
Deceased	0	8 (0.02)	1 (0.002)	6.408, 10, 0.885
Not working	6 (0.015)	19 (0.04)	0	
Coolie	8 (0.02)	43 (0.107)	2 (0.005)	
Professional	7 (0.017)	23 (0.057)	3 (0.007)	
Others	51 (0.127)	211 (0.527)	18 (0.045)	
Monthly income of the family				
Less than and equal to 5000	9 (0.022)	43 (0.107)	4 (0.01)	9.915, 6, 0.223
Between 5000 and 10,000	10 (0.025)	67 (0.16)	10 (0.025)	
More than 10,000	63 (0.15)	194 (0.48)	10 (0.025)	
Place of residence				
Hostel	20 (0.05)	70 (0.17)	9 (0.022)	3.207, 4, 0.410
Home	52 (0.13)	233 (0.58)	15 (0.03)	
Others	0	1 (0.002)	0	

of family, occupation of parents, family monthly income, and place of residence.

It was also found that perceived stress is independent of demographic variables such as age, gender, study course, year of study, type of family, occupation of the parents, and place of residence.

Discussion

The present study revealed there was a significant difference between the perceived stress of professional students and nonprofessional students ($Z = -2.397$, $P = 0.017$) and that the professional students had more perceived stress. This result was consistent with the study conducted in Kanpur, which found that professional students had more stress as compared to nonprofessional students. The findings of the current study could be due to the current study found that 72% of professional students have stress due to overload of study/syllabus. Professional students have a tight syllabus and assignment overload maybe because of that their stress level is more.[4]

The present study revealed a weak positive correlation between perceived stress and domains of eating behavior (uncontrolled eating) of professional ($\rho = 0.162$, $P = 0.022$) and nonprofessional undergraduate students ($\rho = 0.183$, $P = 0.009$), which implies that there is an effect of perceived stress on uncontrolled eating. This result was consistent with the study conducted in Brazil which found that there was a positive correlation of uncontrolled eating ($P = 0.03$) and emotional eating ($P = 0.05$) with stress.[5] Another study which supports the current study conducted in Ulsan found that 56% of people experienced a change in appetite, and in these, 32% of people experienced an increased appetite which is also one of the contributing factors for developing obesity. The study showed that there was a relationship between stress and eating habits. Women usually over-eat more than men during times of high stress. In this study, females are more in number and usually females have a tendency to eat more when there is stress.[6]

The present study showed there was no association between perceived stress and selected demographic variables such as age, gender, study course, year of study, type of family, occupation of parents, family monthly income, and place of residence. The study that contradicts the current findings found that there was an association between stress and demographic variables such as age ($P = 0.001$) and residence ($P = 0.001$). The family background and economic status of the students are good maybe because of that the demographic variables were not influenced by the stress level.[7]

The limitations of the present study were professional students other than nursing students and engineering students were not included in the study. Eating behavior was not observed individually by the investigator as the sample size is big and more than 1 day is needed for observing the eating behavior of the students.

Conclusion

Present findings provide baseline data for the health professionals to create awareness among the college students regarding their stress level and the effect on their eating behavior and health. They can also give awareness about the factors that influence their stress level and educate the students the methods of managing stress and how to face each problem in a positive way.

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Conflicts of interest

There are no conflicts of interest.

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