

Impact of Self-Perceived Academic Stress on Health behavior among College Students: A Comparison between Nursing and Non-Nursing Students

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Abstract: ***Background:** Stress is a universal problem among nursing students, when it is compared with the general population and students in the other health disciplines. Stress seems to be very common in college life because college students need to ensure their academic survival and prepare themselves for the further career. **Aim:** This study was planned to compare the impact of academic stress on health behavior experienced by nursing and non-nursing during their course of education. **Material and methods:** This study used a non-experimental, cross-sectional survey design to compare the perceived academic stress among college students in Tamilnadu, South India. Data collection was done through Google form and the participants received an email in late April, 2019. A questionnaire with two sections was specifically designed for the study. The first section contained questions on demographic variables and the second section includes self-developed questionnaire to assess their levels of stress on five domains. The data were analyzed with the help of descriptive and inferential statistical techniques. The data computation process was assisted by a Software Package for Social Sciences (SPSS). A significant P value was set at 0.05. **Results:** According to the results of this study, it was determined that majority (53%) of nursing students experienced high level of stress and their living status had strong association with Academic stress **Conclusion:** It is recommended to introduce the nursing profession to the individuals in the society, support the students against stressors they experience while studying, and conduct activities that develop coping mechanisms.*

Keywords: Academic stress, Health behavior, Nursing Students, Non-nursing students

1. Introduction

Stress refers to a dynamic interaction between the individual and the environment. It is caused by any physical or psychological stimulus that disturbs the adaptive state and provoked a coping response.¹ It can be negative or positive to an individual, depending on the strength and persistence of the stress, the individual's personality, cognitive appraisal of the stress and social support. The amount of stress experienced may be influenced by the individual's ability to effectively cope with stressful events and situations.²

Education is an inevitable factor for economic and social development. It is necessary for building human capabilities and employment opportunities. Stress has become a part of student's academic life because of several factors. Stress cannot be considered as harmful, but it may seriously affect those who react to it badly.³ Sources of stress include academics, feelings of loneliness, job hunting, family, life goals, social pressure, and physiology. Stress, specifically academic stress, can deplete students' levels of subjective wellbeing and cause lowered grades and dropped courses.⁴ Stress is an universal problem among nursing students. When it was compare with the general population and students in the other health disciplines, it is stated that risk of development of mental health problems is higher in undergraduate nursing students.^{5,6}

Academic stress is defined as a mental and emotional pressure or tension that occurs due to the painful demands of college life. The constituents of academic stress are originated from being exposed to new educational concepts,

adjusting to new social settings, and taking on the larger workload. Too much academic stress can contribute to depression and physical illness, which can in turn negatively affect students' academic performance.⁷ Academic stress in college level arises from overcrowded lecture halls, semester system, and inadequate resources to perform academic work. The pressure to perform well in the examination or test and time allocated makes academic environment very stressful.⁸

The undergraduate students experienced highest stress levels due to the increased class workload, followed by the pressure and having many hours of studies, and the financial difficulties.⁹ Nursing is a risk profession for stress development, since the student, from academic education, faces with situations that require important decision making in patient care. Moreover, insecurity and anxiety, resulting from this process, may trigger or worsen the symptoms. Features such as high-level of cognitive skills, disposition and proactive attitudes are constantly required both from nurses that work as well as nursing students. Thus, stress can impair performance both in the academic as in social assistance.¹⁰ Entering the hospital environment and being in contact with patients with diseases, carrying out procedures causing distress, fear and trauma, power relationships with professors, inattention and negative attitudes of nursing staff in patient care, lack of integration with students from other courses in the area of health and lack of support for coping with these experiences are some examples of situations that cause stress and wear that can compromise the health and quality of life of nursing, often causing discouragement.¹¹

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Professional job stress has been studied and identified often in occupations with high physical and psychological demands and low personal autonomy. Nursing is a typical example of a high stress occupation, as nurses must interact with other professionals frequently to perform required work. Although nursing students share many of the same stressors as qualified nurses, they are at the lowest level of the hierarchical ladder. They share responsibilities for the patient and family with the bedside nurse, charge nurse and clinical nursing instructor.¹²

Despite the plethora of articles on academic stress among college students, there is a lack of studies on comparison of stress level between nursing and non-nursing students. This study is intended to gain a perspective on differences of self perceived academic stress between nursing and non-nursing students. This study was carried out to:

- 1) Determine the level of perceived academic stress among college students.
- 2) Differentiate the perceived level of stress between nursing and non-nursing students
- 3) Associate the findings with socio demographic variables.
- 4) Explore the implications of these findings in reducing the stress among university students.

2. Methods

2.1 Study setting and design

This study used a non-experimental, cross-sectional survey design to compare the perceived academic stress among college students in Tamilnadu, South India. Students from the nursing colleges were compared to those from the colleges of arts and sciences such as science, finance, management, and educational science. Potential participants received an email in late June, 2019 inviting them to participate in the Study. This email included a brief description of the study, approximate time required to complete the survey, and the direct link to Survey. After viewing introductory information about the study, students clicked on button consenting to participate in order to complete the online surveys. Reminder emails were sent 4 days before the end of the 2-weeks study period. One hundred and seventy seven (about 15% response rate) consented to participate and filled out the questionnaire. All the participants were informed of the purpose of the study and were assured of confidentiality and anonymity. The students were asked to not indicate their name anywhere in the survey form.

2.2 Instruments

A questionnaire with two sections was specifically designed for the study. The first section contained questions on the demographic variables. This section consisted of six questions on socio demographic factors, such as age, gender, educational status, marital status, place of residence, travelling to college. The self structured questionnaire on self perceived academic stress scale contains 21 questions and each statement with a 4-point Likert's scale from "strongly disagree" to "strongly agree. It was represented

under five subsections such as Dietary behavior (4 items), Physical health (4 items), Mental health (4 items), Family health (5 items) and social health (4 items). The total score ranges from 21 - 75. Total scores were classified as follows, Mild stress 21-42, Moderate stress 43-63, Severe stress 64-84. The higher score indicating higher academic stress.

2.3 Statistical method for analysis

For data analysis, the statistical software SPSS (Statistical Package for Social Sciences) version 16.0 was used, facilitating the process of organizing data into tables for the sake of better visualization of the results and their interpretation. Unpaired t test was used to compare the means of both groups and chi square χ^2 test was used to test the association between demographic variables and Academic stress score. Descriptive statistics were used to describe frequencies of variables. A significant P value was set at 0.05 at 95% confidence interval.

3. Results

The survey was conducted with 177 students, among 73(42%) nursing and 104 (58%) non-nursing students. Majority of students participated were females. In Nursing 78% females and 22 % of students were male. In non-nursing 51% were females and 49 % of students were male. Most of the study participants were from undergraduate level course, which means 49% of Nursing students and 55% of non-nursing students were studying undergraduate. In regards to age, majority of students falls between the age group of 17-25 years.

Table 1: Distribution of students' socio demographic characteristics

	Nursing (n=73)		Non- Nursing (n=104)	
	Number	Percentage %	Number	Percentage %
Age				
a) 17-20 years	24	33%	36	35%
b) 21-25 years	24	33%	41	39%
c) 26-30 years	18	25%	17	16%
d) More than 30 years	7	9%	10	10%
Sex				
a) Male	16	22%	51	49%
b) Female	57	78%	53	51%
Educational status				
a) Under graduate	36	49%	57	55%
b) Post graduate	34	46.5%	38	36%
c) Doctorate	3	4.5%	9	9%
Marital status				
a) Married	40	55%	45	44%
b) Unmarried	33	45%	58	56%
Travelling to college				
a) Yes	38	52%	50	48%
b) No	23	31.5%	42	40%
c) sometimes	12	16.5%	12	12%
Place of residence				
a) Hostel	38	52%	33	32%
b) Home	35	48%	70	68%

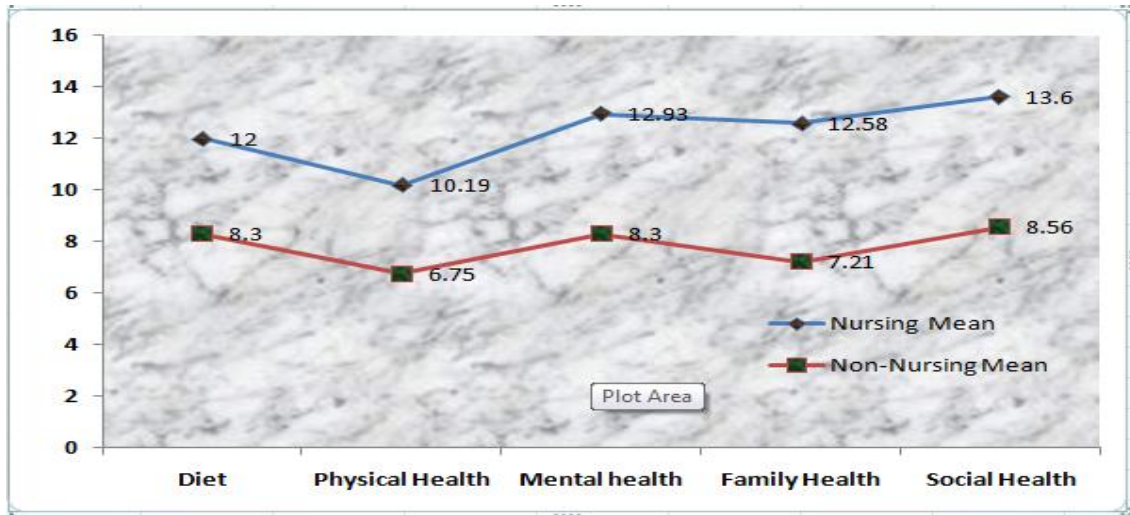


Figure 1: Mean Score level of Stress On health behavior among Nursing and Non-nursing students

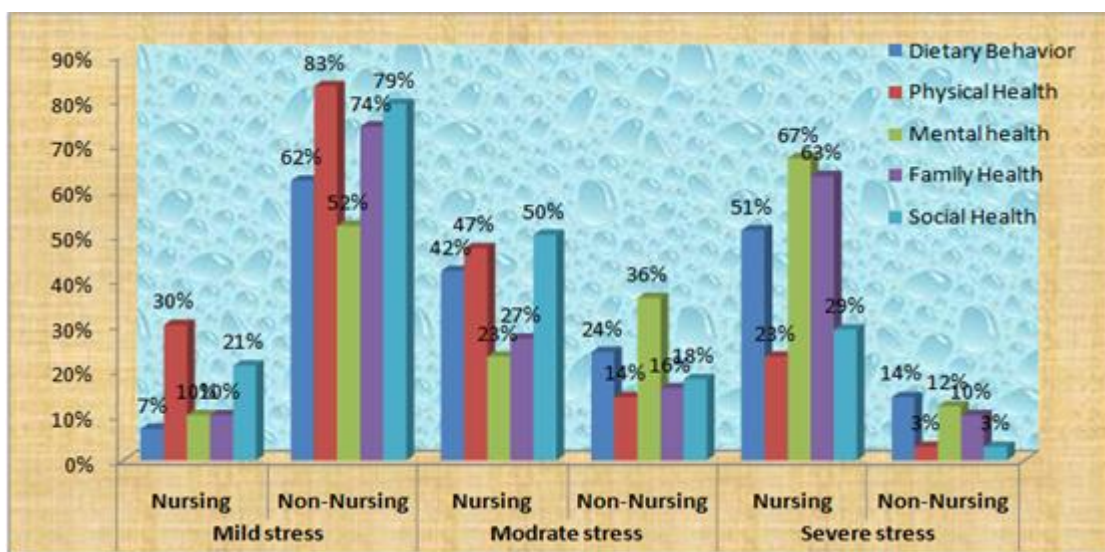


Figure 2: The level of stress on Health behavior among Nursing and Non-nursing students

Figure 2 showed the level of stress on each health behavior among nursing and non-nursing students. When considering the **dietary behavior** 7% of nursing students were having mild stress, 42% were having moderate stress and 51% of students were having severe stress. Whereas among non-Nursing students 62% were having mild stress, 24% were having moderate stress and 14% were having severe stress. Regarding **Physical health** 30% of nursing students were having mild stress, 47% having moderate stress and 23% of nursing students were having severe stress. While stress from non-nursing students were 83%, 14% and 3% as mild, moderate and severe respectively.

Looking into **Mental health** 10% of nursing students having mild stress, 23% were having moderate stress and 67% were

having severe stress. But among non-nursing students 52% were having mild stress, 36% were having moderate stress and 12% were having severe stress.

In terms of **Family Health** 10% of nursing students having mild stress 27% were having moderate stress and 63% were having severe stress. But among non-nursing students 74% were having mild stress, 16% were having moderate stress and 10% were having severe stress.

Regarding **Social health** 21% of nursing students were having mild stress, 50% having moderate stress and 29% of nursing students were having severe stress. While stress from non-nursing students were 79%, 18% and 3% as mild, moderate and severe respectively.

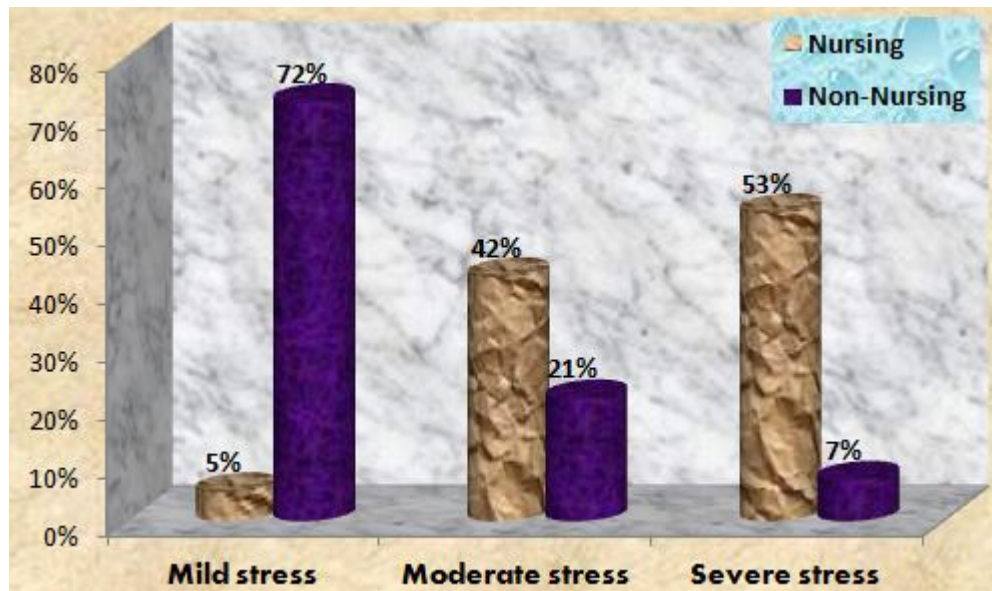


Figure 3: Overall level of stress among Nursing and non-nursing student

Overall, nursing students are having more stress than non-nursing students. The above figure showed 53% of nursing students are having severe stress. This is higher level of stress when compared with the non-nursing students. Whereas majority (72%) of non-nursing students was having mild stress when compared with the nursing students.

Table 2: Mean and Standard Deviation of stress score on Health behavior

Items	Stress Score	Nursing	Non-nursing	t value	P value	Standard error of difference
Dietary Behavior	Mean	12	8.3	9.64	P<0.0001*	0.384
	SD	2.03	2.8			
Physical Health	Mean	10.19	6.75	8.69	P<0.0001*	0.395
	SD	2.79	2.44			
Mental health	Mean	12.93	8.3	11.12	P<0.0001*	0.416
	SD	2.42	2.92			
Family Health	Mean	12.58	7.21	14.3	P<0.0001*	0.374
	SD	2.47	2.43			
Social Health	Mean	13.6	8.56	11.8	P<0.0001*	0.426
	SD	3.08	2.57			
Overall score	Mean	61.3	39	13.3	P<0.0001*	1.673
	SD	9.16	12.06			

*P value is less than 0.05 and statistically significant

Table 2 compared the mean score of academic stress on each health behavior by using unpaired t test. Usually the perceived stress may direct or indirectly affect the dietary behavior of individuals. The above table stated that there is a significant difference in the dietary behavior between nursing and non-nursing students ($t=9.64, p<0.0001$). Effect of academic stress on physical health behavior also increased among nursing students ($p<0.0001, t=8.69$). Most of the nursing students were staying in the hostel as a result they have to stay away from their parents and this may influence their family health. So the stress on family health also statistically significant ($p<0.0001, t=14.3$) between nursing and non-nursing students. Students of nursing colleges are observed being stressed during academic and clinical workloads. So it affects their mental health. Overall the nursing students reported high level of stress when compared with the non-nursing students.

Association between stress and demographic variables

A chi square χ^2 test was used to test the association between demographic variables and Academic stress score. Descriptive statistics were used to describe frequencies of variables. Statistical analyses performed using computer program SPSS 16.0 version (Statistical Package for the Social Sciences).

Table 3: Association between stress and demographic variables

Health Behavior	Dietary Behavior		Physical Health		Mental health		Family Health		Social health	
	χ^2	P value	χ^2	P Value	χ^2	P Value	χ^2	P Value	χ^2	P Value
Age	34.42	0.54	43.2	0.18	36.6	0.44	46	0.108	48.04	0.35
Sex	20.6	0.56	15.5	0.213	11.8	0.45	16.4	0.17	20.9	0.13
Education	23.2	0.51	41.03	0.017*	30.4	0.172	35.5	0.61	23.7	0.785
Department	85.4	0.001*	68.6	0.000*	81.7	0.000*	1.01	0.000*	81.9	0.001*
Marital status	15.17	0.23	11.32	0.50	11.45	0.49	10.07	0.61	13.03	0.599
Living status	21.7	0.041*	32.0	0.126	73.8	0.047*	35.6	0.000*	52.00	0.942

*Significant at 0.05%

Table 3 enumerates the association of stress with the demographic variable. It showed department of study is having association with all aspects of health behaviors. In detail, stress on dietary behavior is having association with department ($P=0.001$) and living status ($P=0.041$). Stress on

physical health is having association with Education and department of study, the value of $\chi^2=41.03$ and 68.6 respectively. Stress on mental health and family health were having association with department of study $\chi^2=81.7, 1.01$ and also living status $\chi^2=73.8, 35.6$ respectively. Similarly

Stress on Social health also having significant association with department of study $\chi^2= 81.9$. (P=0.001)

4. Discussion

Stress occurs in every part of our life, it occurs when there are demands on an individual that exceed his or her 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.¹³ Earning high grades is not the only source of stress for college students. Other potential sources of stress include inadequate family support, eating and sleeping habits, and time pressures may also be sources of stress.¹⁴ Recent research reports shows that the prevalence of stress is increasing among students. The issue of stress among college and university students has been a focus of many researchers for several years.¹⁵

Psychological research shows that stress is associated with overweight and obesity, as stress activates emotional brain networks and elevates the secretion of glucocorticoids and insulin.^{16, 17} A study by Zellner, et al. (2006) reported that women who are stressed ate more unhealthy food (snacks, chocolate/candies) than women who are not stressed.¹⁸ Further, a number of other studies also reported a higher consumption of unhealthy eating among stressed females.¹⁹ The findings of this study also reveal that majority of the students are having stress on dietary behavior. Similarly Al Ansari et al. also found a positive association between stress levels and the consumption of snacks and fast food for university students in the United Kingdom.²⁰

Stress is a universal problem among nursing students. When it is compared with the general population and students in the other health disciplines, it is stated that risk of development of mental health problems is higher in undergraduate nursing students.^{21, 22} In concord to this idea, this study reveals that majority of the nursing students experience severe level of academic stress. Very less students were experienced low level of academic stress when compared with non-nursing students. Furthermore, the results indicated that this phenomenon affected their health behavior negatively. Likewise, a study conducted by Benavente, 2011 also stated that nursing students have psychological and physiological manifestations of stress in higher proportion than in other areas.²³

Findings of this study show that there is no significant relationship found between gender and the level of academic stress. In contrary to this, a study conducted in University of Arkansas at Little Rock found that female accounting students reported higher stress scores than their male counterparts.²⁴ However, merely the level of academic stress on family health was found to have a statistically slight significant association with the living status of the college students. With regard to this a qualitative research study was conducted to understand the impact of hostels on the life of students health behavior found that the hostel students are more prone to affect negatively during hostel stay.²⁵ In many studies in the literature it was expressed that the nursing students experienced stress depending on their course contents, practicing in an intense and stressful environment, exams and evaluations.²⁶

It is a common perception that, hostel life has a unique impact on the pattern of students' life. Living in the hostel makes students socially and behaviorally different.²⁷ The present study also revealed that the students living in hostel perceived high academic stress on health behavior when compared with the students living with their parents. Likewise a study conducted in Pakistan stated that Students living in hostel reported that they missed their home and family too much and sometime after talking with parents on cell phones they started to weep for some time and then get control of their emotions.²⁸ In contrary to this, a study conducted by Kozaei et al, described living away from family for a specific period of time leaves some enduring experiences in the life of the students. In this new life style student learns to live independently, and learn how to compromise with the other students and roommates.²⁹

5. Recommendations

Academic stress is an unavoidable life dispute commonly obvious among college students. It may influence the health behavior all aspects such as Dietary, physical, mental social and family. Academic stress may adversely affect the performance and their health condition so it is very important to arrange some workshops at the beginning of each semester. Thus the students will be able to learn how they can overcome their stress while studying. Institution should also arrange classes for practicing yoga, meditation, physical exercise etc. Through effective counseling, counselors and also psychologists can help the students to reduce the stress and motivate them for better academic performance. However, when stress exceeds the controlling capability of the student it urgently needs some personal management techniques or professional assistance. It is necessary to offer students better conditions to combat stress, and direct participation of teachers and the institution is of extreme importance in the preparation or implementation of strategies to reach this objective.

To sum up, this research was done with certain limitations that should not be left unmentioned. These were like limited sample number and lack of time to extend the study as it is needed to be.

6. Conclusion

The findings of the study indicated the need for understanding academic stress among nursing students. According to the results of this study, it was determined that the nursing students experience high level of stress than non-nursing students and their demographic characteristics living status is strongly associated with academic stress. Accordingly, it is recommended to introduce the nursing profession to the individuals in the society, support the students against stressors they experience while studying, and conduct activities that develop coping mechanisms.

7. Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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