

Stress Levels and its Perceptive Gender Differences Among Generation Z Undergraduate Health Professional Students

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Abstract

Background: Stress experienced by Generation Z (Gen Z) undergraduate health professional students could pose a detrimental effect on their demanding professional lives. Health professional students are known to experience various stressors and it affects their health and academic performance. A gender difference is known to exist in the perception of stress experienced by the students. However, it is not clear if this is true in the case of present-day Gen Z tech-savvy students. Hence, the present study was done to assess the intensity of stress perceived by male and female Gen Z undergraduate health professional students and to evaluate their perception on the role of yoga to overcome it. **Materials and methods:** Descriptive questionnaire-based study was conducted among the Gen Z undergraduate health professional students of a private health university in Dakshina Kannada district of Karnataka, India. One hundred health professional students were administered with a pretested and validated academic stress scale questionnaire. Their stress levels and the responses to various stressors by male and female students were tabulated. Also, their perception on the practice of yoga for alleviating stress was documented. **Results:** Female health professional students are significantly more stressed compared with their male counterparts. Academic stressors such as worrying, failure in formative assessment examination and unable to follow a study time table were significantly more in female students as compared to male students. Stress-related to non-academic stressors such as lack of concentration due to gadget use and lack of courage to speak in the class lecture were significantly more among female students. A significant number of students perceived that yoga is a useful interventional technique in alleviating stress and should be included in their course curriculum. **Conclusion:** There is a female preponderance in the perception of certain academic and non-academic related stressors among Gen Z health professional students. The Gen Z students perceive yoga as a coping strategy to alleviate stress and that it should be incorporated in their course curriculum.

Keywords: Stress; Students; Technology; Yoga.

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Introduction

Stress is defined as 'any challenge to homeostasis' or to the body's internal sense of balance.¹ It is a process by which one can perceive and try to cope up with the demanding environmental threats and challenges.² The sources of stress are called stressors and it disrupts people's daily functioning ability. The healthcare profession is a very demanding

and stressful field and the students undergoing healthcare education are under tremendous pressure to excel in the course work. When stress is perceived negatively it affects not only student's health but also the academic performance.

Academic stress is the response of the body to various academic-related demands that exceed the adaptive capabilities of students.³ Stress perceived by health professional students is dynamic and

dependent on the stage in which the student is in.⁴ The present health professional students belong to Generation Z (Gen Z) who are technology savvy and are good at 'task switch'.⁵ They are digital natives and if they use technology correctly for learning purposes it enhances their participation, engagement and commitment in academics and thus, helping them to perform better in their professional life. Even though students have a positive outlook, attitude and perception towards technology-assisted learning, over usage of digital devices like smart phones, iPad and laptops for non-educational purposes can also lead to detrimental effects causing stress.⁶

Stress is reported to be more prevalent among undergraduate health professional students.⁷ The level of stress perceived by a student depends on the stressful events, socio-cultural factors, gender, ethnicity, educational system, coping processes and personality factors of the individual.⁸ Gender is one of the important determining factors of the stress process. The perception of stress in a given situation and its output i.e. the coping strategies to the stressors is vastly different between the genders.⁹ Increased academic stress in health professional students might lead to various issues like anxiety, anger, depression, low self-confidence, self-esteem, impaired classroom and clinical performance which in turn negatively affect their overall academic performance.¹⁰ Also, elevated corticosteroid levels can impair their memory, concentration and learning ability resulting in negative academic performance.¹¹ This becomes a vicious cycle that can also be detrimental to the student's overall well-being. Hence, the assessment of stress among the Gen Z health professional students and the role of gender in perceiving stress becomes the need of the hour. It will act as a window to the challenges they face and will help in formulating the steps needed to be taken to overcome these hurdles.

Among many coping strategies for stress, practicing Yoga is one of the popular and most effective strategies.¹² Since, there are contradicting reports regarding the perception of stress level among gender,^{11,13,14} we planned to conduct the present study to assess the intensity of stress perceived by male and female Gen Z undergraduate health professional students and to evaluate their perception of the role of yoga to overcome it.

Materials and Methods

A questionnaire-based study was conducted among undergraduate health professional students

of a private health university in Dakshina Kannada district of Karnataka, India. Ethical clearance was obtained from the Institution Ethical Committee (IEC) before the start of the study. Written informed consent was obtained from the study participants after explaining the purpose and nature of the study. Participation was purely voluntary and students were assured that participation would be confidential and would not affect their academic progress.

This cross-sectional study was done on one hundred apparently healthy undergraduate medical and dental health professional student volunteers (purposive sampling) who were born after 1995 (Gen Z).¹⁵ Students who had clinically diagnosed depression, lack of interest, not willing to give written informed consent and incompletely filled questionnaire were excluded from the study.

The questionnaire used in this study is a modified adapted version of the Academic stress scale developed by R. Balaji Rao.¹⁶ It was developed and validated to assess the stress in health professional students. It consisted of 20 questions. The questions were grouped into two main domains such as academic-related stressors and non-academic related stressors. The participant's responses to the questions of the questionnaire were elicited on a Likert scale from 0-4 that most closely described the intensity of stress they perceive. The grading of stress level was as follows; 0-NS (No Stress), 1-SS (Slightly Stressed), 2-MS (Moderately Stressed), 3-HS (Highly Stressed) and 4-ES (Extremely stressed). Total stress score of all the stressors was calculated and they were classified as follows: 1-20 -SS, 21-40 MS, 41-60 HS and 61-80 -ES. They were also asked to respond on their perception of the role of yoga to overcome stress.

Statistical analysis

Data was entered in the MS excel sheet and the data were analyzed using Microsoft excel and the frequency of the stress level among the students was analyzed using SPSS version 16. Descriptive statistics are reported as frequencies and percentages. Chi-square test was used to compare the stress levels associated with various stressors in the male and female students and their perception of yoga to reduce stress. All the tests with $p < 0.05$ were considered as significant.

Results

Among 100 study participants, 68 were female and 32 were male health professional students.

Table 1 shows that female students are significantly more stressed compared to male students.

Stress due to worrying about examination, not

able to keep up with the study time table and failure in internal examination (formative assessment) were significantly more in female students compared to male students (Table 2).

Table 1: Severity of stress among male and female student (N = 100)

| Stress level | Male N1 = 32 Frequency (%) | Female N2 = 68 Frequency (%) | p-Value |
|---------------------|-------------------------------|---------------------------------|---------|
| Slightly stressed | 13 (40) | 7 (10) | 0.002* |
| Moderately stressed | 14 (44) | 32 (47) | |
| Highly stressed | 4 (13) | 26 (38) | |
| Extremely stressed | 1 (3) | 3 (5) | |

*Significant (chi-square test)

Table 2: Comparison of academic stressors among the study population (N = 100)

| Academic Related Stressor | Males (N1 = 32) | | | | | Female (N2 = 68) | | | | | p-Value |
|--|-----------------|---------|---------|---------|---------|------------------|---------|---------|---------|---------|---------|
| | 0 NS | 1 SS | 2 MS | 3 HS | 4 ES | 0 NS | 1 SS | 2 MS | 3 HS | 4 ES | |
| Difficult topics | 4 | 11 | 9 | 6 | 2 | 4 | 20 | 21 | 16 | 7 | 0.73 |
| Difficulty in recollecting the studied material | 4 | 9 | 10 | 8 | 1 | 3 | 9 | 21 | 25 | 10 | 0.82 |
| Worrying about the examinations | 8 | 10 | 7 | 4 | 3 | 4 | 10 | 14 | 21 | 19 | 0.003* |
| Not able to keep up with the study time table | 7 | 9 | 11 | 2 | 3 | 4 | 18 | 20 | 18 | 8 | 0.04* |
| Apprehensive about results after examinations | 9 | 10 | 4 | 5 | 4 | 13 | 10 | 13 | 15 | 17 | 0.17 |
| Unable to complete the assignment on time | 9 | 11 | 9 | 2 | 1 | 21 | 21 | 17 | 8 | 1 | 0.88 |
| Not able to grasp the subject matter | 10 | 12 | 6 | 4 | 0 | 9 | 22 | 21 | 12 | 4 | 0.12 |
| Last minute preparation for the examinations | 7 | 6 | 10 | 6 | 3 | 8 | 15 | 15 | 21 | 9 | 0.44 |
| Failure in internal examination (formative assessment) | 17 | 2 | 6 | 7 | 0 | 14 | 18 | 9 | 15 | 12 | 0.001* |
| Fear of becoming additional or repeater | 6 | 9 | 10 | 5 | 7 | 3 | 14 | 25 | 18 | 8 | 0.11 |

*Significant (chi-square test)

Table 3 shows that lack of concentration during study hours due to use of smart phone or laptop for entertainment purpose and lack of courage to speak in the class were significantly more among female students. Stress due to biased attitude of teacher

was more in both male and female students. It was observed that both male and female participants felt that difficulty in discussing the marks/academic insufficiency with the parents as one of the sources of stress.

Table 3: Comparison of non-academic related stressors among the study population (N = 100)

| Non-Academic Related Stressors | Males (N1 = 32) | | | | | Female (N2 = 68) | | | | | p-value |
|--|-----------------|----|----|----|----|------------------|----|----|----|----|---------|
| | 0 | 1 | 2 | 3 | 4 | 0 | 1 | 2 | 3 | 4 | |
| | NS | SS | MS | HS | ES | NS | SS | MS | HS | ES | |
| Lack of concentration during study hours due to use of smart phone or laptop for entertainment purpose | 10 | 9 | 4 | 7 | 2 | 10 | 8 | 8 | 13 | 29 | 0.003* |
| Lack of courage to speak in the class | 15 | 10 | 5 | 2 | 0 | 10 | 21 | 18 | 11 | 8 | 0.004* |
| Not understanding how to prepare for the examinations | 9 | 12 | 6 | 3 | 2 | 9 | 25 | 18 | 9 | 7 | 0.42 |
| Lack of self-confidence | 13 | 8 | 9 | 2 | 0 | 12 | 27 | 20 | 4 | 5 | 0.08 |
| Lack of mutual help among classmates | 10 | 12 | 6 | 4 | 0 | 22 | 26 | 12 | 5 | 3 | 0.72 |
| Lack of fluency while speaking the English language | 10 | 11 | 6 | 3 | 2 | 23 | 23 | 10 | 6 | 6 | 0.98 |
| Biased attitude of teacher | 14 | 9 | 6 | 1 | 2 | 18 | 12 | 22 | 10 | 6 | 0.11 |
| Incomplete and confusing study material | 5 | 14 | 8 | 3 | 2 | 7 | 15 | 36 | 7 | 3 | 0.09 |
| Deficient space or room for study at home/hostel | 7 | 11 | 5 | 2 | 7 | 14 | 22 | 9 | 8 | 15 | 0.94 |
| Difficulty in discussing the marks/academic insufficiency with the parents | 14 | 11 | 4 | 3 | 0 | 13 | 16 | 8 | 9 | 5 | 0.47 |

*Significant (chi-square test)

Figure 1 shows that significant majority of students (p -value 0.001) perceived that yoga help in reducing stress.

Significant number of the students (p -value < 0.0001) felt that yoga should be included in the curriculum (Fig. 2).

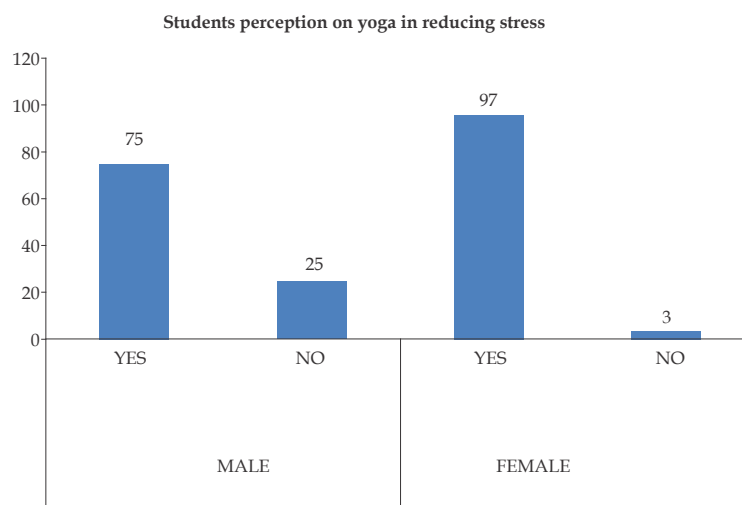


Fig. 1: Perception of students on the role of yoga in reducing stress (N = 100).

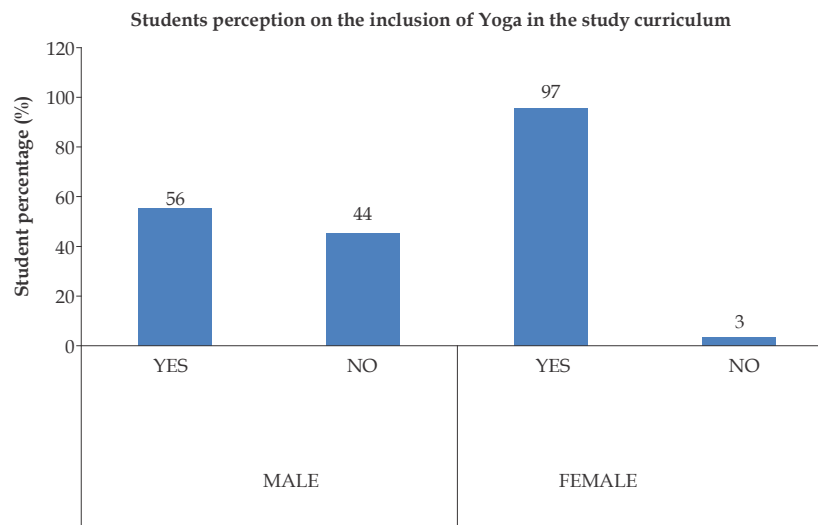


Fig. 2: Perception of students on inclusion of yoga in study curriculum ($N = 100$)

Discussion

The present-day students are from Gen Z who is finding it difficult to strike a balance between social media, studies and the world around them.¹⁷ In addition, the academic demands and pressure to excel in studies faced by the health professional students are more compared to others. Hence, they are more prone to stress due to various stressors which could eventually lead to mental health issues in them. In addition, the intensity of stress perceived by male and female students of Gen Z students is unclear. Hence, this study was carried out to assess the intensity of stress on Gen Z undergraduate health professional students and the role of gender in perceiving stress. Along with that, the student's perception of the role of yoga to overcome stress was also evaluated.

The findings of our study show that both male and female students pursuing healthcare education have high levels of stress. Iqbal et al. (2015), in his study using the Depression Anxiety Stress Scale, reported that substantial proportions of medical undergraduate students in a college in Bhubaneswar were depressed, anxious and stressed and required immediate professional help.¹⁸ Even though the stress scale used by them is different from ours, the stress levels are found to be predominantly high in undergraduate students in both studies. Stress in health professional students could lead not only to burn out in them but also could lead to a lack of adequate empathy and compromised care towards patients in future.

The comparison of levels of stress depicted that female students were more stressed compared to

their male counterparts. Our study is in accordance with Dahlin et al., and Shah et al.^{19,20} who had also reported a female predominance in relation to stress in contrast to the report by Saxena et al., who had reported that male students were more academically stressed than female students.¹¹ This could be because females are more prone to the symptoms of depression, anxiety, interpersonal sensitivity, somatisation and neurotics compared to males.²¹

The findings of the study also showed that the academic stressors such as worrying about the examination, not able to keep up with the study time table and failure in internal examination (formative assessment) were significantly more in female students compared to male students. Vastness of the academic curriculum, poor performance and increased frequency of examination are few of the common sources of academic stressors in female health professional students.¹⁴ Gen Z students have difficulty concentrating and analyzing complex study concepts which could lead to worrying about and fear of failure in examination.⁵

In our study showed that non-academic stressors such as lack of concentration during study hours due to the use of mobile phones or laptops for entertainment purposes and lack of courage to speak in the class were significantly more among female students compared to male students. This could be because the present-day Gen Z tech-savvy students spend more time with gadgets like mobile phones, laptops, tablet computers and use it for non-academic purposes like browsing the social media platform leading to lack of time for studying and reduced concentration in them. This could

be the result of constant exposure to small bits of information from social media with its six-second patterns of imaging that is rewiring the brain to expect information to be delivered in very short and rapid bursts.⁵ In fact, Patil et al., reported that even though students had positive attitudes about using mobile for learning purposes, given an opportunity they did not show appreciable utilization of mobile for learning.²² Also the social interactions and networking which used to happen in person using emotions and speech figures previously has taken a dramatic U-turn and now happens via social media platforms using emojis and memes. This will ultimately lead to a lack of courage and confidence in expressing themselves in class, especially when they have an audience, therefore, causing stress. Inherently, females are shy by nature and easy availability of expressing their emotions incognito via the social platforms is compounding this nature of female students.²³

It was seen that students perceived a biased attitude of teacher which is one of the teaching-learning stressors as a source of stress. These findings are in contrast with the study reported by Abraham et al., where lesser percentages of students were stressed due to teaching-related stressors.²⁴ A teacher's confidence and unbiased attitude towards the academic potential of a student is very important for their success and also plays a vital role in their academic achievement.²⁵

Our study reported a higher frequency of stress related to stressor such as difficulty in discussing the marks/academic insufficiency with the parents among both genders. The parents of Gen Z students are tired of trying to communicate with their children as they are restless and flighty. Also, both the parents of this generation due to economic demands are working parents who spend more time at work than at home leading to a communication gap between them and their children.²⁶ Hence, the students are unable to connect with their parents and discuss and resolve the academic challenges they face. This compounds to stress faced by both the genders.

Present-day Gen Z health professional students are experiencing an increased amount of stress and need interventional coping strategies to combat the ill effects of stress to excel in their professional life. In our study, the majority of the students are of the opinion that practice of yoga reduces stress and should be incorporated in their course curriculum. Interventional studies were done on health professional students have shown that simple yogic breathing techniques have reduced

the stress levels among the students.^{27,28} Inculcating yoga in health professional study curriculum and knowing its benefits both on maintaining good health and reducing stress will encourage them to practice it and thereby reduce the intensity of both the academic and non-academic stressors.

The specific effects and the correlation of the use of technology on the various individual stressors with their academic performance among Gen Z health professional students could not be assessed and this forms the future scope of the study

Conclusion

Stress experienced by Gen Z health professional students due to various stressors is an important detrimental factor in their professional life. In the present study, females significantly perceived academic-related stressors such as worrying and fear of failing in formative assessment examination and unable to keep up with study time table as more stressful when compared to males. Similarly, non-academic stressors such as lack of concentration because of gadget use and lack of courage to speak in the class were perceived as stressors by females in comparison with their male counterparts. A significant number of students perceived that yoga is a useful interventional technique in alleviating stress and should be included in their course curriculum. Thus, the need of the hour for Gen Z students is for specific targeted measures to substantially reduce the burden of stress in them.

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