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Presence of Gender Difference in Depression, Anxiety and Stress Scores Among the Allied Health Sciences Students- A Cross-Sectional Study

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ABSTRACT

The present study was undertaken to assess the gender differences in depression, anxiety and stress among the undergraduate allied health sciences students as few studies exist on stress assessment in allied health sciences students that bring out the gender differences in stress, depression, and anxiety. This is a cross-sectional study that was conducted on the first- and second-year students of 18-22 years of age after obtaining informed consent and Institutional ethical clearance. DASS questionnaire was used to assess the depression, anxiety and stress levels in the Allied health sciences students and to find out the existence of difference of scores in the male and female students. In the present study, a significantly high percentage of male students had higher scores in depression, anxiety and stress compared to the female students. Our study highlights the need for implementation of effective counseling and relaxation techniques in order to decrease their stress level, to enhance their academic and clinical performance.



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INTRODUCTION

The medical curriculum is considered highly stressful as both the academic and clinical demands are challenging to face, resulting very often in changes in sleep patterns leading to depression and anxiety in students. The medical students are expected to learn and master a huge amount of knowledge and skills accurately in a specific period of time. The students have to make a personal and social sacrifice in order to maintain good academic results in this

highly competitive environment, which puts them under a lot of stress ([Sherina et al., 2004](#)).

Both the physical and mental wellbeing of the student is affected due to stress ([Mahedevan et al., 2014](#)). In everyday life, a student is exposed to a lot of pressure. When a student is able to cope with it, he or she is not stressed. When he is no longer able to cope with it, it results in stress ([Eva et al., 2015](#)), affecting the individual both mentally and physically ([Dharshini et al., 2017](#)). Both academic and emotional factors cause stress, which influences and may alter the physiological and cognitive functions of the male and female students differently ([Qamark et al., 2015](#)). The female students were stressed more, which affected their cognition and altered their cardiovascular parameters ([Ganesh et al., 2014](#)).

The level of depression and anxiety experienced by the students will directly affect their physical and mental health, in turn, disturbing their academic performance ([Ben et al., 2014](#)) and cause interpersonal problems, psychiatric problems and even suicidal tendency ([Rao et al., 2015](#)). Furthermore, the

more depressed and stressed the students are the more is their subjective reaction to stress (Saravanan and Wilks, 2014). The practice of simple relaxation techniques plays a vital role in relieving stress (Archana et al., 2016).

Though the ability to with stand stress is essential to handle the academic workload, few studies have been done to assess stress levels in allied health sciences students. Therefore, the aim of the current study was to assess depression, anxiety and stress in the allied health sciences students and to find out the gender differences in the depression, anxiety and stress scores using the DASS questionnaire.

MATERIALS AND METHODS

This is a cross-sectional study which was conducted on 165 Allied Health Sciences students after obtaining clearance from the Institutional Ethics Committee (IEC) of Saveetha Medical College & Hospital (IEC Approval No.: SMC/IEC/2018/11/363). Written informed consent was obtained from all the study participants and from the parents or guardian of all the study participants and information sheets regarding the study was given to all the participants of the study. Details of the study were explained clearly to the participants and basic demographic details regarding name, age, and sex was collected. All undergraduate Allied Health Sciences students in the age group 18-22 years studying in Saveetha Medical College who were willing to participate were included in the study. Students who were unwilling to participate in the study; students with medical conditions, depression and undergoing therapy or treatment were excluded.

A Previously validated and standardized survey instrument, Depression Anxiety Stress Scale (DASS 42), was used to assess information on depression, anxiety and stress (Qamar et al., 2014). The questionnaire was clearly explained to the students and any doubts or questions about the study were clarified by the researcher. Confidentiality was ensured throughout the study. DASS is a self-administered, 42 - item questionnaire that includes three self-report scales designed to measure the negative emotional states of depression, anxiety and stress. Each of the three scales contains 14 items, divided into subscales of 2-5 items with similar content. Items on the DASS Are rated on 4 - point Likert - type, ranging from 0 (did not apply to me at all) to 3 (Applied to me very much, or most of the time). The higher the scores on each sub scale indicate more depression, anxiety and stress. Then the scores were tabulated as per whichever category it belonged to, (which only the investigator knew) namely, (1) Depression

Scale (D Scale), (2) Anxiety Score (A Score), (3) Stress Score (S Score), will be computed and tabulated as given in Table 1.

Data Analysis

Data were analyzed by SPSS 20.0. The male and female students' depression, anxiety and stress scores were analyzed using Student's t-test. A P-value of less than 0.05 was considered significant.

RESULTS AND DISCUSSION

A total of 165 (first year) Allied Health students were included in the study. Table 2 shows depression, anxiety and stress scores among the first and second year allied health sciences students. Data were expressed as Mean \pm SD. (*P<0.05, **P<0.01, ***P<0.001). In the present study, significantly high (p<0.05) percentage of male students had higher moderate, severe and extremely severe scores for depression, anxiety and stress when compared to the female students. Moderate depression in 32.56% males, 27.87% females, severe depression in 30.23% males, 18.85% females, extremely severe depression in 18.6% males and 1.64% females were observed (Figure 1). Moderate anxiety score was observed in 18.6% males, 27.05% females, severe anxiety in 25.58% males, 28.69% females and extremely severe anxiety scores in 41.86% males and 18.85% females (Figure 2). A majority of male students had moderate stress of 41.86%, while only a minority (16.97%) of female students had moderate stress. While 11.63% of males had severe stress scores, 4.65% of males had extremely severe stress, only 4.84% of females were severely stressed and no female participant had extremely severe stress (Figure 3).

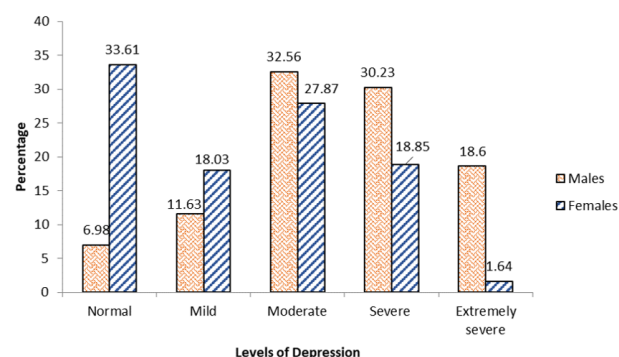


Figure 1: Graph showing levels of Depression in male and female students

The present study was done to assess the stress levels experienced by the first and second year allied health sciences students as this is a crucial transition period from schooling to college involving altogether a different mode of conceptual learning

Table 1: Categorization of DASS scores according to their severity

Parameters	Depression	Anxiety	Stress
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely Severe	28+	20+	34+

Table 2: Depression, anxiety and stress scores in study participants and percentage of students having DASS scores

Parameter	Depression		Anxiety		Stress	
	Score	Percentage of participants having the score	Score	Percentage of participants having the score	Score	Percentage of participants having the score
Normal	5.55±2.69	26.67	4.52±1.87	15.15	8.87±3.75	32.73
Mild	11.81±2.70	16.36	8.33±0.49	7.27	16.30±1.12	30.3
Moderate	17.38±1.92	29.05	12.24±1.30	24.85	21.72±2.06	27.88
Severe	23.5±1.86	21.81	16.98±1.51	27.88	28.54±1.90	7.88
Extremely severe	33.6±2.95	6.06	24.10±3.43	24.85	37.50±2.12	1.21

-Data are expressed as Mean±Standard Deviation

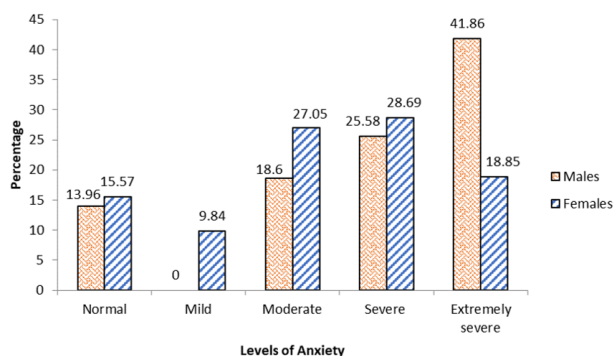


Figure 2: Graph showing levels of Anxiety in male and female students

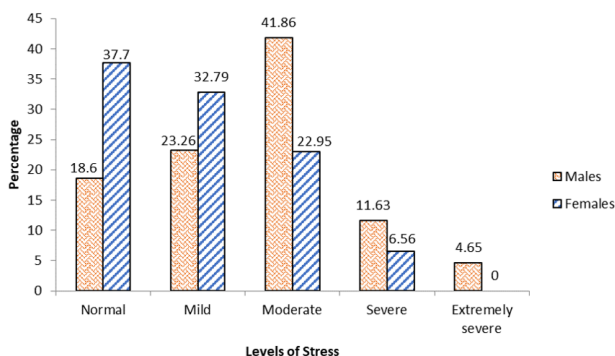


Figure 3: Graph showing levels of Stress in male and female students

which they have not been exposed to before (Hemavathi and Archana, 2017). Studies have reported undergraduate students to be more stressed out in the initial years of study compared to the final year (Qamar *et al.*, 2014). The day-to-day pressures of undergoing medical training have resulted in distress, excessive burnout, anxiety and depression (Ludwig *et al.*, 2015). The stress affects the students psychologically, leading to alterations in sleep, substance abuse, in-turn adversely affecting their academic performance (Waqas *et al.*, 2015).

Physiologically anxiety leads to autonomic alteration and increased tension in skeletal muscle, while stress makes the person more prone to irritability, worry causing lack of patience leading to relaxation difficulty (Roy *et al.*, 2015). This may be the reason for the higher depression, anxiety and stress scores observed in the allied health sciences students, which is also in agreement with the previous studies showing higher stress scores in undergraduate first-year MBBS students. Our pilot studies among medical students have shown that female students have more resilience scores compared to males. This might be the reason behind the female students having better adaptability to stress, depression and anxiety, which agrees with our findings where female students have DASS scores lesser than the male stu-

dents. The study makes it explicit that gender plays a significant role in influencing depression, anxiety and stress as observed from significantly higher scores observed in males compared to females.

CONCLUSION

Positive stress is eustress which is required to handle the everyday emergencies of life. When it cannot be handled correctly, it becomes distressed. The high depression, anxiety and stress scores observed in the allied health sciences students more so in males is a disturbing trend that has to be positively addressed. The simple practice of relaxation techniques, yogasanas, hobbies, games, music, exercise, playing on a swing, sharing family time is to be promoted actively with coping strategies for stress to be definitely taught so as to effectively reduce the stress level of the students which will, in turn, alleviate their depression and anxiety.

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