

## A Cross Sectional Assessment of Psychological Parameters (Depression, Anxiety and Stress Scores) in Male and Female Students

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### Abstract

**Aim:** The present study was undertaken to observe the selected psychological parameters that are depression, anxiety, and stress in young adults.

**Methodology:** A cross sectional study was conducted among students of NSMCH, Bihta, Patna, Bihar, India in which a total of 100 (males =50, females =50) young adults studying undergraduate allied health courses both males and females were part of the study after obtaining the written informed consent. Apparently healthy individuals within the age group of 18-24 were recruited in the study. Participants with health issues or undergoing any treatment or therapy and unwilling participants were excluded from the study. Depression, anxiety, and stress levels were assessed using the DASS-42 questionnaire which is a standard questionnaire to assess the negative psychological aspects stress, anxiety, and depression. Each item comprised a statement and the answers were reported on a four-point scale, with the score 0 representing “did not apply to me at all”, and score 3 “applied to me very much, or most of the time”. By summing the scores for relevant items, the values of depression, anxiety, and stress revealed the degrees of severity of the three scales in question. Informed consent was obtained from all the participants before the study.

**Results:** Out of 100 participants, 50% were males and 50% were females. 76% participants belonged to 18-21 years of age group and 24% were more than 24 years of age. 42% belonged to first year, 35% belonged to second year, and 23% belonged to third year of study. The P-value equals 0.0015 for the depression score. By conventional criteria, this difference is considered to be very statistically significant. P-value equals 0.1806 for anxiety score. By conventional criteria, this difference is considered to be not statistically significant. P-value equals 0.0140 for the stress score. By conventional criteria, this difference is considered to be statistically significant.

**Conclusion:** To sum up, it is of great significance for colleges to adopt collegiate policies reflecting the gender differentials and offer female and male students more proper guidance in freshman and sophomore years in order to promote their psychological well-being.

**Keywords:** Depression, Anxiety, Stress, Psychological development.

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## Introduction

Education has an essential role in every country. Academic failure is one of the major problems of the families. Many factors affect academic achievement [1, 2]. Researchers have indicated that depressed and anxiety mood are negatively related to academic achievement [3]. Mental health problems are becoming increasingly common among college students. Relevant research indicated that approximately half of the university students had moderate levels of stress-related mental health concerns, including anxiety and depression [4].

Mood disorders are psychological problems that are common among students. According to Porter (1990), up to 60% of students left school without finishing their degrees. Depression and anxiety were found to be interrelated to each other. The overlapping symptoms of these two psychological problems can lead to all sorts of academic problems that can give impact to academic achievement among students. For example, researchers have found that students' performance in school, college, and university is influenced by the symptoms of depression [5, 6], anxiety [7] that could lead to difficulties in concentration, lack of motivation and interest, poor attendance, and physical health such as headache and fatigability. These conditions will influence students' academic achievement [8].

The three scales of depression, anxiety, and stress are considered as sub-dimensions of psychological distress [9]. Gender difference in psychological distress has long been a focus of relevant studies. Previous epidemiological research show that in general, females tend to suffer more from mental problems than males for two reasons. First, the physiological differences between females and males (such as genetic vulnerability, hormone and cortisol levels, etc.) may be reflected emotionally and behaviourally. For

instance, females and males responded to stress differently as a consequence of their differential sensitivity to events [10].

Earlier studies suggested establishing a student monitoring cell that assesses regularly the psychosocial behavior of young adults [11]. Unmanaged or poorly managed stress leads to depression and further suicidal thoughts. Hence, there is a need for regular monitoring of the psychological parameters of young adults and counsel them with proper management strategies. The present study was undertaken to observe the selected psychological parameters that are depression, anxiety, and stress in young adults.

## Methodology:

A cross sectional study was conducted among students of NSMCH, Bihta, Patna, Bihar, India in which a total of 100 (males =50, females =50) young adults studying undergraduate allied health courses both males and females were part of the study after obtaining the written informed consent. Apparently healthy individuals within the age group of 18-24 were recruited in the study. Participants with health issues or undergoing any treatment or therapy and unwilling participants were excluded from the study.

Depression, anxiety, and stress levels were assessed using the DASS-42 questionnaire which is a standard questionnaire to assess the negative psychological aspects stress, anxiety, and depression. [2] Each item comprised a statement and the answers were reported on a four-point scale, with the score 0 representing "did not apply to me at all", and score 3 "applied to me very much, or most of the time". By summing the scores for relevant items, the values of depression, anxiety, and stress revealed the degrees of severity of the three scales in question.

Informed consent was obtained from all the participants before the study. Data was

analyzed using SPSS 20.0 version. Probability value less than 0.05 was

considered significant.

### Results:

**Table 1: Demographic details and year of study of undergraduate students**

Variables		Number
Gender	Male	50
	Female	50
Age	18-21	76
	>21	24
Year of study	First	42
	Second	35
	Third	23

Out of 100 participants, 50% were males and 50% were females. 76% participants belonged to 18-21 years of age group and 24% were more than 24 years of age. 42% belonged to first year, 35% belonged to second year, and 23% belonged to third year of study.

**Table 2: Association of psychological parameters (Depression, Anxiety and Stress Scores) with gender**

Parameter	Males	Females	P-value
Depression	17 ± 0.92	14 ± 0.63	0.0015
Anxiety	10 ± 0.74	8 ± 0.46	0.1806
Stress	22 ± 1.36	18 ± 1.75	0.0140

The P-value equals 0.0015 for the depression score. By conventional criteria, this difference is considered to be very statistically significant. P-value equals 0.1806 for anxiety score. By conventional criteria, this difference is considered to be not statistically significant. P-value equals 0.0140 for the stress score. By conventional criteria, this difference is considered to be statistically significant.

### Discussion:

The finding supports these results that expected the female teenagers to have higher anxiety levels than males. For example, Dorn *et al.* (2009) indicated associated increases in anxiety among adolescent girls who report greater levels of fearfulness and anxiety symptoms than boys [13]. In fact, two out of every three teenagers with general anxiety disorder are girls [14].

Academic stress was reported to be the major reason for the mental health issues of young adults. Excessive stress due to

academics leads to decline cognitive functions and quality of life of students [15]. Interestingly, there is a strong link between the stress and immune system and excessive stress deteriorates the immune system and increases the incidence of diseases [16]. When the student fell sick his performance in academics decreases which further acts as a stressor. This will act as a vicious cycle if not interrupted, which can increase suicidal thoughts in young adults.

Previous epidemiological research show that in general, females tend to suffer more from mental problems than males for two reasons. First, the physiological differences between females and males (such as genetic vulnerability, hormone and cortisol levels, etc.) may be reflected emotionally and behaviourally. For instance, females and males responded to stress differently as a consequence of their differential sensitivity to events [10]. Females were more vulnerable to stress and pain than males, so they might

experience greater sadness and anxiety [11]. Furthermore, self-concepts of traditional masculinity and femininity can affect their attitudes and behaviors towards life experiences. Masculinity exhibits traits such as individualism, and assertiveness, while femininity manifests in affection, compassion, and sensitivity to other's needs [12, 17]. The prescribed gender role expectations, in turn, lead to their differential internalizing and externalizing problems. It has been evidenced that women were more likely to struggle with internalizing disorders such as depression and anxiety, while men exhibited more externalizing disorders like substance abuse [19-21], alcohol abuse [22] and internet addiction [23]. In addition, females are more likely to develop borderline personality disorder which is characterized by unstable emotion [24]. Mounting research have focused on the gender difference in mental health among college students, but no consistent conclusion was drawn in this respect. Some studies concluded that female undergraduates exhibited mental problems more overtly [25]. Especially, female students significantly suffered more from stress and anxiety [26, 27]. As for the depression scale, some researchers found a higher prevalence rate of depression among female student [28, 29]. By contrast, other researchers insisted that male students were more likely to experience depressive disorders than female students [30, 31], which corresponded with the statement that femininity appeared to be protective against depression symptoms for college educated people [18]. There were also studies which found no substantial gender effects concerning their mental health states [32,33].

### Conclusion:

Though a minimum amount of stress is required in life, excess stress is very deleterious for both physical and mental health. The young adults must be

periodically assessed for psychological distress and monitored and counseled for management strategies for their better quality of life and academic performance. To sum up, it is of great significance for colleges to adopt collegiate policies reflecting the gender differentials and offer female and male students more proper guidance in freshman and sophomore years in order to promote their psychological well-being.

### References:

1. Kashani JH, Orvaschel H. Anxiety disorders in mid adolescence: A community sample. *Am J. Psychiatr.* 1988;144:931-4.
2. Modabernia MJ, Shodjai-Tehrani H, Moosavi SR, Jahanbakhsh-Asli N, Fallahi M. The prevalence of depression among high school and preuniversity adolescents: Rasht, Northern Iran. *Arch Iranian Med.* 2007;10:141-6.
3. Modabernia MJ, Shodjai-Tehrani H, Fallahi M, Shirazi M, Modabernia AM. Prevalence of depressive disorders in Rasht, Iran: A community based study. *Clin Pract Epidemiol Ment Health.* 2008;4:20.
4. Regehr C., Glancy D. and Pitts A. Interventions to reduce stress in university students: A review and meta-analysis. *Journal of affective disorders,* 2013;148(1):1-11.
5. Fine JM, Carlson C. A systems-ecological perspective on home-school intervention. In: Fine JM, Carlson C, editors. *The Handbook of Family-school Intervention: A System Perspective.* Massachusetts: Allyn and Bacon; 1994.
6. Stark KD, Brookman CS. Theory and family. School intervention. In: Fine JM, Carlson C, editors. *The Handbook of Family-school Intervention: A System Perspective.* Massachusetts: Allyn and Bacon; 1994.
7. Anson A, Bernstein J, Hobfoll SE. Anxiety and performance in two ego

- threatening situations. *J Pers Assess.* 1984;48:168–72.
8. Yousefi F, Mariani BM, Rumaya BJ, Marof R, Mansor AT. The relationship between gender, age, depression and academic achievement. *Curr Res Psychol.* 2010;1:61–6.
  9. Lee, D., 2019. The Convergent, Discriminant, and Nomological Validity of the Depression Anxiety Stress Scales-21 (DASS-21). *Journal of Affective Disorders.*
  10. Afifi, M., 2007. Gender differences in mental health. *Singapore medical journal,* 48(5):385.
  11. Sai Sailesh Kumar Goothy, Ravikanth Manyam, Venkata Ramaraju Alluri. Students Suicides-Can't We Stop This? *Journal of Clinical and Diagnostic Research* 2019;13(2): CL01.
  12. Lovibond, S.H. and Lovibond, P.F., 2004. *Manual for the depression anxiety stress scales*, second ed. Psychology Foundation of Australia.
  13. Dorn LD, Negriff S, Huang B, Pabst S, Hillman J, Braverman P, et al. Menstrual symptoms in adolescent girls: Association with smoking, depressive symptoms and anxiety. *J Adolesc Health.* 2009;44:237–43.
  14. Albano AM, Chorpita, BF, Barlow DH. Childhood anxiety disorders. In: Mash EJ, Barkley RA, editors. *Childhood Psychopathology.* 2 ed. New York: Guilford Press; 2003.
  15. Behere SP, Yadav R, Behere PB, A comparative study of stress among students of medicine, engineering, and nursing. *Indian j. Psychol. Med* 2011; 33(2): 145-148.
  16. Suzanne C. Segerstrom and Gregory E. Miller, *Psychological Stress and the Human Immune System: A Meta-Analytic Study of 30 Years of Inquiry,* *Psychol Bull* 2004;130(4):601-630.
  17. Chaplin T.M., Hong K., Bergquist K. and Sinha R. Gender differences in response to emotional stress: an assessment across subjective, behavioral, and physiological domains and relations to alcohol craving. *Alcoholism: Clinical and Experimental Research,* 2008;32(7):1242-1250.
  18. Gibson, P.A., Baker, E.H. and Milner, A.N. The role of sex, gender, and education on depressive symptoms among young adults in the United States. *Journal of Affective Disorders,* 2016;189:306-313.
  19. Horwitz A.V. and White H.R. Gender role orientations and styles of pathology among adolescents. *Journal of Health and Social Behavior.* 1987:158-170.
  20. Seedat, S., Scott, K.M., Angermeyer, M.C., Berglund, P., Bromet, E.J., Brugha, T.S., Demyttenaere, K., De Girolamo, G., Haro, J.M., Jin, R. and Karam, E.G. Cross-national associations between gender and mental disorders in the World Health Organization World Mental Health Surveys. *Archives of general psychiatry,* 2009;66(7):785-795.
  21. Rosenfield, S. and Mouzon, D., 2013. Gender and mental health. In *Handbook of the sociology of mental health.* 2013;277-296.
  22. Vu, H.M., Tran, T.T., Vu, G.T., Nguyen, C.T., Nguyen, C.M., Vu, L.G., Tran, T.H., Tran, B.X., Latkin, C.A., Ho, C.S. and Ho, R. Alcohol use disorder among patients suffered from road collisions in a Vietnamese Delta Province. *International journal of environmental research and public health.* 2019; 16(13):2423.
  23. Zhang, M.W., Lim, R.B., Lee, C. and Ho, R.C. Prevalence of internet addiction in medical students: a meta-analysis. *Academic Psychiatry,* 2018; 42(1):88-93.
  24. Keng, S. L., Lee, Y., Drabu, S., Hong, R. Y., Chee, C.Y.I., Ho, C.S.H., and Ho, R.C.M. Construct validity of the mclean screening instrument for borderline personality disorder in two Singaporean samples. *Journal of*

- personality disorders. 2019;33(4):450-469.
25. Adlaf, E.M., Gliksman, L., Demers, A. and Newton-Taylor, B. The prevalence of elevated psychological distress among Canadian undergraduates: Findings from the 1998 Canadian Campus Survey. *Journal of American College Health*, 2001;50(2):67-72.
  26. Bayram, N. and Bilgel, N. The prevalence and socio-demographic correlations of depression, anxiety and stress among a group of university students. *Social psychiatry and psychiatric epidemiology*. 2008; 43(8): 667-672.
  27. Mahmoud, J.S.R., Staten, R.T., Hall, L.A. and Lennie, T.A. The relationship among young adult college students' depression, anxiety, stress, demographics, life satisfaction, and coping styles. *Issues in mental health nursing*, 2012;33(3):149-156.
  28. Liu, Y., Zhang, N., Bao, G., Huang, Y., Ji, B., Wu, Y., Liu, C. and Li, G., 2019. Predictors of depressive symptoms in college students: A systematic review and meta-analysis of cohort studies. *Journal of Affective Disorders*, 2019;244:196-208.
  29. Tung, Y. J., Lo, K. K. H., Ho, R. C. M., and Tam, W. S. W. Prevalence of depression among nursing students: a systematic review and meta-analysis. *Nurse Education Today*, 2018;63:119-129.
  30. Al-Qaisy, L.M. The relation of depression and anxiety in academic achievement among group of university students. *International journal of psychology and counselling*, 2011;3(5);96-100.
  31. Wong, J.G., Cheung, E.P., Chan, K.K., Ma, K.K. and Wa Tang, S. Web-based survey of depression, anxiety and stress in first-year tertiary education students in Hong Kong. *Australian & New Zealand Journal of Psychiatry*, 2006;40(9);777-782.
  32. Grant, K., Marsh, P., Syniar, G., Williams, M., Addlesperger, E., Kinzler, M.H. and Cowman, S. Gender differences in rates of depression among undergraduates: measurement matters. *Journal of Adolescence*, 2002;25(6):613-617.
  33. Mahgoob N., & Saber Ali D. M. Acute Appendicitis Due to Missed Intrauterine Contraceptive Device/A Case Report and Literature Reviews. *Journal of Medical Research and Health Sciences*, 2022;5(8):2177–2181.