ORIGINAL ARTICLE

SUICIDAL IDEATION, DEPRESSION, ANXIETY, STRESS, AND LIFE SATISFACTION OF MEDICAL, ENGINEERING, AND SOCIAL SCIENCES STUDENTS

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Background: Pursuing higher education is not an easy task as it requires hard work, dedication, and motivation. Although there are many rewards involved in growing up academically, nevertheless, it contains a few hazards too. For instance, suicidal ideation is associated with presence of depression, anxiety, and stress with low level of satisfaction with life in students finding difficulty in handling educational demands of higher education. Therefore, the present study focused on the query that whether there is any difference or not among medical, engineering, and social sciences students of city of Karachi, Pakistan in the level of suicidal ideation, depression, anxiety, stress, and life satisfaction. **Methods:** Using comparative group design, total 300 students (150 males and 150 females) with age range of 19–26 were selected from faculties of medical, engineering, and social sciences of different universities of Karachi, Pakistan, through purposive sampling. Respondent Profile Form, The Suicide Behaviours Questionnaire-Revised, Depression Anxiety Stress Scale–21, and Satisfaction with Life Scale were administered to assess suicidal ideation; depression, anxiety, stress; and life satisfaction, respectively, of the students. Scores were analysed through ANOVA and Post Hoc (Tukey's HSD) test using SPSS. **Results:** Social sciences and engineering students were significantly higher on depression, anxiety, and stress than medical students [F (2, 297) =8.701, p=.000] whereas insignificant differences in the level of suicidal ideation [F (2, 297) =1.914, p=.149] and life satisfaction [F (2, 297) = .726, p = .485] among these students were found. **Conclusion:** With the help of these findings, it would be easier to counsel students of different disciplines in time on the lines of suggested preventive measures.

Keywords: Suicidal ideation; Depression; Anxiety; Stress; Life Satisfaction; Students
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INTRODUCTION

In today's era, people are getting introduced to newer and remarkable discoveries every other day with the apparent intention of making their lives easier. Even though the responsibility of moving forward and working for the betterment of the country lies on the whole nation, it is the young adults who are considered to be the most responsible part of the entire population. Due to this reason, the pressure upon the youngsters is increasing day by day which generally includes the pressure to compete, the pressure to work hard, the pressure to excel in every area of life, and such other various requirements. Moreover, since a large part of the young adults comprises of students, it would not be incorrect to say that it is the student population who is under the utmost pressure and is consequently being effected most severely in a variety of ways.

Considering the available literature and researches, suicidal ideation is commonly associated with presence of depression, anxiety, and stress with low level of satisfaction with life among students.

Suicidal ideation is viewed as, having thoughts, urges, or intentions of committing suicide.[1] The rate of suicide among adults unfortunately, have escalated since 2010 in Pakistan, along with other Muslim countries.[2] Researches point towards a vast variety of factors that are associated with the increased risk for suicidal ideation among student population. These factors include the increasing competitiveness, lesser resources to deal with the academic stressors, family conflicts, financial issues, exams stress, loneliness, poor academic achievement, and poor physical health.[3]

Whereas Depression, in clinical terms, refers to a condition which involves persistent low or irritable mood along with feelings of helplessness, hopelessness, lack of joy and interest in everyday happenings, and it may sometimes involve suicidal ideation/thoughts as well.[4] While the term 'anxiety' refers to subjective feelings of apprehension and fear of some unexpected happening which are often accompanied by physical sensations such as high heart rate, hypertension, and so forth.[5] Stress is characterized by the response of body to any kind of external demand or pressure which may be physical, emotional, or psychological.[6] Since these three variables are usually interrelated, the presence of one either constitutes or is a consequent of another. Generally, university students are almost four times

more prone towards depression, anxiety, and stress that might be attributed to the increasing demands of universities' curriculums. Furthermore, additional factors such as worries and uncertainty regarding career, personality traits; and the likes also play their role.[7]

When we talk about Life satisfaction, it is said to be the subjective evaluation of an individual's satisfaction and contentment with his or her life from a global viewpoint.[8] It would not be wrong to presume that the level of satisfaction with life of students' population would largely depend on their extent of satisfaction with their academic lives. A study revealed that a large number of Pakistani students is not satisfied with their academic life conditions that especially include dissatisfaction with the ways of teaching.[9]

Suicidal ideation has been found to be associated with the incidence of depression and anxiety among young adults.[10] Moreover, depression, anxiety, and stress are negatively correlated with life satisfaction among students.[11]

A vast number of researches show that the students who are enrolled in medical are more vulnerable to depression, anxiety and stress.[12] In another study, symptoms of anxiety were found to be slightly higher in social sciences students while students enrolled in medical had more depressive symptoms.[13] On the other hand, it was found that the level of distress was higher in engineering students compared to the health disciplines (medical and psychology).[14] The reason for this, as attributed by the researchers, is that students from health disciplines are more likely to seek treatment for their problems compared to the engineering students. In contradiction to these researches, it is obvious from another study that almost equal levels of depression and anxiety present among students from different disciplines (medical, engineering, law, and psychology).[15] Further the level of satisfaction with life was significantly higher among medical students as compared to students from other disciplines.[16]

Hence this study was conducted following the comparative group design to identify the difference in suicidal ideation, depression, anxiety, stress, and life satisfaction of students from the faculties of medical, engineering, and social sciences.

MATERIAL AND METHODS

This study included 300 students (150 males and 150 females) with equal distribution of medical (n=100), engineering (n=100), and social sciences (n=100) students. Firstly, after approval of research synopsis from Board of Advanced Studies and Research of University of Karachi, who also checked into the Research Ethics going to be followed in the said research (Approval attached), the approved list of the Higher Education Commission (2013)[17] of universities located in Karachi, Pakistan was taken. It indicated that in Karachi there were total 31 universities among which 07 were public and 24 were private. From the said list, only medical, engineering, and universities having different departments of social sciences were selected.

The age of the participants ranged between 19 to 26 years (M=20.94, SD=1.68). All the participants were approached from six different private and public-sector universities of Karachi, Pakistan. Participants were selected through purposive sampling and only those students were selected who were enrolled in medical, engineering, and social sciences faculties (Table-1 for detail information about the participants). After taking consent for data collection from the heads of approached universities and taking informed consent from the participants, the Respondent Profile Form along with the three scales was administered on them.

The tool used to measure suicidal ideation was Suicide Behaviours Questionnaire - Revised (SBQ-R)[18]. Permission to use this scale was granted by Prof. Dr. Augustine Osman (Associate Dean for Graduate Studies and Research at The University of Texas, San Antonio) through e-mail dated, November 1, 2012) to use his questionnaire. The SBQ-R is a self-report assessment for suicide related thoughts and behaviours. It consists of total 4 items. Item 1 is to find the presence of suicidal ideation or attempt during the life-time, item 2 appraise the occurrence of suicidal ideation over the past year, item 3 measures threat or disclosure of suicide attempt while item 4 taps future probability of suicidal behaviour. Participants are instructed to circle one of the available options in each item. For scoring item 1; option 1=a non-risk/non-suicidal group, option 2=suicide-risk ideation group, option 3=suicide-plan group while option 4=suicide-attempt group. Considering item 2, scores of 1 to 5 are assigned to the five options, respectively. In item 3, scores 1–3 are given on three options, respectively. For item 4, scores of 0 to 6 are assigned to the six options. All scores are added to get the full score. Higher score indicates higher suicidal thoughts and behaviours. SBQ-R has been previously used in many researchers conducted on Pakistani sample.[19,20] Cronbach alpha for the present sample was found to be. 748

The scale used to measure depression, anxiety, and stress was Depression Anxiety Stress Scale – 21 (DASS-21) and free access to this scale has been provided on the Internet by the authors of the scale[21]. DASS-21 is a self-report questionnaire that assesses depression, anxiety, and stress. It comprises of 21 items with 7 items for each variable. It is a four-point

Likert scale in which 0='Did not apply to me at all', 1='Applied to me to some degree, or some of the time', 2='Applied to me to a considerable degree, or a good part of time', and 3='Applied to me very much, or most of the time'. The participants are instructed to answer on each statement according to the extent to which they can relate with it over the period of last one week. All scores are added and the total is multiplied by 2. DASS – 21 has been widely used in researches conducted on Pakistani population.[22] It has a good internal consistency and validity.[23,24] In one of the research on participants of Lahore, Cronbach alpha was 0.83.[25] Cronbach alpha for the current sample was found to be .834.

The level of life satisfaction was measured through the use Satisfaction with life scale (SWLS) and the authors of this scale have granted free access on the Internet to use it.[26] SWLS is a self-report assessment of one's subjective judgment of satisfaction with life as a whole. It is a 7-point Likert scale in which 7= Strongly Agree, 6= Agree, 5= Slightly Agree, 4= Neither agree nor disagree, 3= Slightly Disagree, 2=Disagree, and 1=Strongly Disagree. It consists of total 5 items. The participants are instructed to mark the appropriate number considering their extent of agreement with each item. The total score ranges from 5–35 and it is calculated by adding all the scores. Score between 5–9 signifies extreme dissatisfaction with life; 10–14 indicates dissatisfaction; 15–19 are people who fall slightly below the average in life satisfaction; 20–24 depicts an average level of life satisfaction, 25–29 is a sign of satisfaction that is above average while a score between 30–35 specifies individuals who are highly satisfied with their lives. SWLS has been used in various researches comprising Pakistani population.[27,28] It has a high internal and test-retest reliability. It also has satisfactory convergent, discriminant, and construct validity.[8] Further, Cronbach alpha of SWLS for the current sample was found to be .792.

Through Statistical Package for the Social Sciences, Analysis of Variance, Post Hoc (Tukey's HSD) and *t*-test were applied to analyse the scores.

All ethical principles were considered during data collection, application of statistics, interpretation of results, and writing of the research paper.

RESULTS

Table 1 shows the demographic description of the sample under study. Then, Table 2 and 3 show a significant difference [F (2, 297)= 8.701, p = .000] in the level of depression, anxiety and stress, among the three faculties' students which shows that depression, anxiety and stress is higher among social sciences students compared to the medical and engineering students. However, Table-4 and Table 5 show that an insignificant statistical difference was found in the level of suicidal ideation [F (2, 297)=1.914, p =.149] and life satisfaction [F (2, 297)=.726, p =.485] among the students from these three faculties.

Table–1: Descriptive Statistics of personal variables of the participants

	N	M	SD
Age (in years)	300	20.94	1.68
		n	Percentage
Gender			
Male		150	50.0
Female		150	50.0
Total		300	100.0
University Sectors			
Public		3	50.0
Private		3	50.0
Total		6	100.0
Financial condition			
Lower		0	0.0
Middle		292	97.3
Upper		8	2.6
Total		300	100.0
Birth Order			
First		98	32.5
Middle		132	43.7
Last		70	23.2
Total		300	100.0
Family Structure			
Nuclear		223	73.8
Joint		77	25.5
Total		300	100.0

Table-2: Difference in the level of depression, anxiety, and stress among medical, engineering, and social sciences students (n=300)

Faculties	**M**	**SD**	**F (2,297)**	***p***
Medical	29.14	22.324	8.701*	.000
Engineering	38.18	19.122		
Social Sciences	41.04	21.596		

*$p < 0.01$

Table-3: Tukey's HSD comparison of difference in the level of depression, anxiety, and stress among medical, engineering, and social sciences students

(I) Faculties	**(J) Faculties**	**Mean Diff (I-J)**	**SE**	***p***
Medical	Engineering	-9.040*	2.978	.007**
	Social Sciences	-11.900*	2.978	.000**
Engineering	Social Sciences	-2.860	2.978	.603

**$p < 0.01$

Table-4: Difference in the level of suicidal ideation among medical, engineering and social sciences students (n=300)

Faculties	**M**	**SD**	**F (2,297)**	***p***
Medical	4.24	2.198	1.914	.149
Engineering	4.95	3.020		
Social Sciences	4.67	2.470		

Table-5: Difference in the level of life satisfaction among medical, engineering, social sciences students (n=300)

Faculties	M	SD	F (2,297)	p
Medical	22.10	6.632	.726	.485
Engineering	22.83	7.475		
Social Sciences	21.67	6.498		

DISCUSSION

The results showed that the level of depression, anxiety, and stress among medical, engineering, and social sciences students differs significantly with social sciences students having higher level of depression. These results are also supported by a study indicating that social sciences students have higher level of depression and anxiety as compared to medical and engineering students.[29] Moreover, in another study insignificant difference in stress level was found between natural sciences and social sciences students.[30]

One of the reasons might be that usually social sciences' students perceive their careers as uncertain since it is a general viewpoint that there is a low scope in Pakistan for their field of study. Thus, they might have feeling of depression, anxiety and stress related to their futures. Another reason can be that medical students might have the viewpoint that if people would find out that they themselves are psychologically unhealthy, they would be perceived as an undesirable healer by patients having medical problem. In support of it a study also found that medical students reason that they prefer not to disclose their mental health issues out of fear of jeopardizing their careers.[31]

Furthermore, an insignificant difference in the level of suicidal ideation among three faculties' students was noted, although there was a significant difference in the level of depression, anxiety, and stress which shows that these three variables are higher in social sciences students compared to the medical and engineering students. A noteworthy reason for insignificant difference in the level of suicidal ideation among all three groups might be that with the passage of time, the awareness regarding the negative impacts of stressors in educational institutions has been increased. The higher authorities of medical universities have now started working to reduce these stressors in order to overcome psychological problems of medical students. Due to this, we now observe the introduction of semester system in medical colleges also. Hence now student's written and oral examination is taken after every few months as well as additional various extra-curricular activities in medical schools have increased. Other than these factors, according to researches[32], low socio-economic status is another significant cause for suicidal ideation. Taking into account the demographic characteristics of the present study's sample (Table-1), 97.3% of the participants belonged to the middle socio-economic status. As majority of our participants belonged to middle economic class, therefore, they do not seem to have major financial problems. Thus, we cannot consider economic condition as one of the reasons for the resulted insignificant difference. Hence, change in educational environment and extra facilities provided to them may be believed to be the main causative factor for the resulted insignificant difference.

Further, results showed insignificant differences in life satisfaction among the students belonging to these three fields of study, clearly shows that no matter whatever field these students belong, they are equally satisfied with their lives. This clearly shows that no matter from whatever field these students belong, their level of life satisfaction is similar and they are equally satisfied with their lives. Previously[33], it has been found that higher socio-economic status, higher self-esteem and better academic performance leads to higher satisfaction with life. In the present study only 2.6% (Table-1) of the participants belonged to higher socio-economic status, thus this factor cannot be taken as a reliable source of analysis for the present study.

Even though the findings of the present study are helpful and valuable, the limitations and shortcomings must not be ignored. For future researches, it would be better to conduct a detailed interview instead of using self-report questionnaires especially for measuring the presence of suicidal ideation and depression. As these two are fairly sensitive topics, many people show reluctance in disclosing their thoughts regarding them, may be out of fear of stigmatization or due to the perceived negative image. Furthermore, increasing the sample size would be helpful in generalizing the results.

CONCLUSION

Findings of this study revealed that a certain level of suicidal ideation, depression, anxiety, and stress prevail among Pakistani students no matter which academic discipline they belong to. If this would not be given proper attention on time, its roots may strengthen which may eventually lead to dire consequences; therefore, it is highly recommended that every educational institute must provide free counselling services for their students from clinical psychologist.

Most importantly, due to the lack of researches, very little is known about the rate of existence of suicidal ideation among Pakistani students. Thus, there is a dire need for the researchers to take initiative and study this area in detail in order

to spread awareness and to provide help just in time to those who are in need.

AUTHORS' CONTRIBUTIONS

SN and SM after going through various students' problems selected the topic and made research design. Data was collected and entered on excel sheet by first author. Second author applied statistics, interpreted the results and critically evaluated the paper written by first author.

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REFERENCES

1. Centers for Disease Control and Prevention. Definitions: Self-directed Violence [Internet]. 2012 [cited 2012 Nov 10]. Available from: http://www.cdc.gov/violenceprevention /suicide/definitions.html
2. Nafees M. Suicide Trends in Rich and Poor Countries. Daily Times. [Internet] 2010 [cited 2013 Aug 30]. Available from: http://www.dailytimes.com.pk/default.asp?page=2010%5C09 %5C28%5Cstory_28-9-2010_pg3_6
3. Shah S. The menace of student suicide finally grips Pakistan too. Top Story, thenews.com.pk [Internet]. [cited 2013 Aug 13]. Available from: https://www.thenews.com.pk/archive/print/622719-the-menace-of-student-suicide-finally-grips-pakistan-too
4. National Institute for Health and Clinical Excellence. Depression–Background Information [Internet]. 2011 [cited 2012 Nov 10]. Available from: http://www.cks.nhs.uk/depression/background information/definition
5. Tabrizi EA, Yaacob SN. Relationship between creative thinking and anxiety among adolescent boys and girls in Tehran, Iran. Int J Humanit Soc Sci 2011;1(19):60–6.
6. Morrow A. Stress Definition [Internet]. 2011 [cited 2012 Nov 10]. Available from: http://dying.about.com/od/glossary/g/stress.htm
7. Meglio F. Stress Takes Its Toll On College Students [Internet]. 2012 [cited 2012 Nov 9]. Available from: http://www.businessweek.com/articles/2012-05-10/stress-takes-its-toll-on-college-students
8. Tabbarah SZ. Perceived Stress, Coping Resources and Perfectionism as predictors of Life Satisfaction in a sample of AUB Medical Students [Internet]. 2008 [cited 2012 Nov 9]. Available from: http://tinyurl.com/ac3l86h
9. Abbasi MN, Malik A, Chaudhry IS, Imdadullah M. A study on student satisfaction in Pakistani universities: The case of Bahauddin Zakariya University, Pakistan. Asian Sos Sci 2011;7(7):209.
10. Boden JM, Fergusson DM, Horwood LJ. Anxiety disorders and suicidal behaviors in adolescence and young adulthood: Findings from a longitudinal study. Psychol Med 2007;37(3):431–40.
11. Guney S, Kalafat T, Boysan M. Dimensions of mental health: life satisfaction, anxiety and depression: a preventive mental health study in Ankara University students population. Procedia-Soc Behav Sci 2010;2(2):1210–3.
12. Baldassin S**,** Alves TC, de Andrade AG, Nogueira Martins LA. The characteristics of depressive symptoms in medical students during medical education and training: a cross-sectional study. BMC Med Educ 2008;8:60.
13. Bunevicius A, Katkute A, Bunevicius R. Symptoms of anxiety and depression in medical students and in humanities students: Relationship with big-five personality dimensions and vulnerability to stress. Int J Soc Psychiatry 2008;54(6):494–501.
14. Leahy CM, Peterson RF, Wilson IG, Newbury JW, Tonkin AL, Turnbull D. Distress levels and self-reported treatment rates for medicine, law, psychology and mechanical engineering tertiary students: cross-sectional study. Aust N Z J Psychiatry 2010;44(7):608–15.
15. Collins SJ. University Students More Likely To Be Hit By Depression [Internet]. 2010 [cited 2012 Nov 9]. Available from: http://www.smh.com.au/lifestyle/diet-and-fitness/university-students-more-likely-to-be-hit-by-depression-20100706-zz48.html
16. Samaranayake CB, Fernando AT. Satisfaction with life and depression among medical students in Auckland, New Zealand. N Z Med J 2011;124(1341):12–7.
17. HEC. Higher Education Commission Pakistan, Recognized Universities/Degree Awarding Institutions (DAIS) of Pakistan in Public & Private Sector [Internet]. 2013. [cited 2014 Jun 13]. Available from: http://www.hec.gov.pk/OurInstitutes/Pages/Default.aspx
18. Osman A, Bagge CL, Guitierrez PM, Konick LC, Kooper BA, Barrios FX. The Suicidal Behaviors Questionnaire – Revised (SBQ-R): Validation with clinical and non-clinical samples. Assessment 2001;8(4):443–54.
19. Khatoon H, Khalid H, Fatima M, Minhas FA. Un-diagnosed depression with suicidal ideation/intent among patients visiting medical OPD: Depression in disguise. Int J Indian Psychol 2015;2(4)57–68.
20. Khan F, Ali U. Impact of religious orientation on suicide behaviors among psychiatric patients. J Pak Psychiatr Soc 2016;13(1):34–6.
21. Lovibond S, Lovibond P. Manual for the Depression Anxiety Stress Scales. Sydney: The Psychology Foundation of Australia; 1995.
22. Kumar H, Shaheen A, Rasool I, Shafi M. Psychological distress and life satisfaction among university students. J Psychol Clin Psychiatry 2016;5(3):00283.
23. Tully PJ, Zajac IT, Venning AJ. The structure of anxiety and depression in a normative sample of younger and older Australian adolescents. J Abnorm Child Psychol 2009;37(5):717–26.
24. Henry JD, Crawford JR. The short-form version of the Depression Anxiety Stress Scales (DASS-21): construct validity and normative data in a large non-clinical sample. Br J Clin Psychol 2005;44(Pt 2):227–39.
25. Rafique R, Anjum A. Positive and negative psychological correlates, gender specific and traditional factors for first onset angina in a sample of Pakistani women. J Ayub Med Coll Abbottabad 2015;27(4):801–6.
26. Diener E, Emmons RA, Larsen RJ, Griffin S. The Satisfaction with life scale. J Pers Assess 1985;49(1):71–5.
27. Bibi F, Chaudhry AG, Awan EA. Impact of gender, age and culture on life satisfaction. Sci Int 2015;27(2):1649–52.

28. Khan MJ, Younas T, Ashraf S. Problem solving styles as predictor of life satisfaction among university students. Pak J Psychol Res 2016;31(1);209–22.
29. Al-Qaisy L. The relation of depression and anxiety in academic achievement among group of university students. Int J Psychol Couns 2011;3(5):96–100.
30. 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):145–8.
31. Schwenk TL, Davis L, Wimsatt LA. Depression, stigma, and suicidal ideation in medical students. JAMA 2010;304(11):1181–90.
32. Boxer PA, Burnett C, Swanson N. Suicide and occupation: A review of the literature. J Occup Environ Med 1995;37(4):442–52.
33. Alleyne M, Alleyne P, Greenidge D. Life satisfaction and perceived stress among university students in Barbados. J Psychol Afr 2010;20(2):291–7.

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