THE RELATIONSHIP BETWEEN DEPRESSION, ANXIETY, STRESS AND SELF HARM AMONG COLLEGE STUDENTS: A CROSS-SECTIONAL SURVEY

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ABSTRACT

Objective: The aim of present study was to assess the relationship between depressions, anxiety, and stress and self-harm. The study also aimed at finding gender and educational year differences on the basis of main study objective.

Study Design: Cross sectional study.

Place and Duration of Study: Colleges of Jhelum, Jhelum from Sep 2016 to Feb 2017.

Material and Methods: Deliberate Self-harm Inventory was used to measure self-harm behaviors, while Depression, Anxiety and Stress Scale was used to assess depression, anxiety and stress among adolescents. Data was analyzed using SPSS 20.

Results: A sample of 400 was drawn by sensitivity and specificity calculator using consecutive non probability sampling, out of which 322 participants (128 male and 194 female students) from Jehlum, Punjab completed the survey. The data was collected over the period of six months and then analyzed. Results indicated that a slightly negative correlation exist between depressions, anxiety, and stress and self-harm ($p<0.5$, r=-0.357). Among demographic variables, year of education and family monthly income did not show any difference with respect to depression, anxiety and stress. But they revealed a statistical significant difference with respect to gender ($p=0.005$, $p<0.05$). Females scored more on depressive, anxiety and stress (17.03) than Male (14.77). Similarly gender, family monthly income and educational year did not have significant effect on the score of self-harm. Self-harm revealed a statistically significant difference with respect to residential area. Urban students showed more self-harming behaviors than rural students with a mean of 33.37.

Conclusion: Present study suggest that there is marginally negative correlation between self-harm and depression, anxiety and stress but it has not proved by this study that whether self-harm protects student from depression, anxiety stress or other variables affect this relationship. Self-harm did not differ with respect to gender but students had more scores on depression, anxiety and stress than male.

Keywords: Anxiety, DASS, Depression, Self-harm, Stress.

INTRODUCTION

Deliberate self-harm (DSH) is a condition in which individual deliberately injures him/her. This behavior creates damage to sufferer. Researchers have described self-harm differently. It is also famous with the name of Para suicide, self-mutilation, non-suicidal self-injury, auto aggression and self-abuse etc. According to Gratz[1] self-harm is annihilation or transformation of structure of the body without desire to kill him or herself.

Deliberate Self harm (referred to as DSH afterwards) and suicide are different and cannot be used interchangeably. In deliberate self-harm, an individual does not have a desire to kill him/her but on the other hand in suicide the individual wants to take his/her life. It means that in DSH, there is no desire to kill one. But it does not mean that self-harm may not cause suicide. If self-injurious behavior becomes chronic it can lead towards suicide. DSH and suicide are correlated[2]; In extreme situation where self-mutilation does not serve the purpose of unloading emotional burden, the concerned individual go towards suicide to heal negative emotional states[3].

DSH typically has its onset in early adolescence and is strongly correlated with

psychiatric symptoms, but it can also occur in many different disorders, as well as in non-clinical samples[4,5]. DSH is generally viewed as a dysfunctional coping mechanism or as a non-adaptive strategy to regulate tension and other negative emotions used by some people[6].

Morey, Corcoran, Arensman & Perry[7] conducted a cross sectional survey on Irish adolescents to assess the prevalence of self-harm. On the basis of their findings, they concluded that 9.1% adolescents reported life time history of DSH. Girls had high prevalence of self-harm than boys, they also have more thoughts about self-harm than boys. No significant difference in self-harm due to age was observed. Students living with one parent had high ratio of self-harm.

One study[8] on self-harm in 41 schools of England revealed that in addition to depression anxiety and other problems self-harm by friends and family members was the reason behind that behavior[8]. There are also a few studies suggesting social learning effects among children. Kumar and colleagues[9] found that some children in their study learned 8 non suicidal self-injurious behaviors from real life models, two from newspapers and seven through television.

Psychological characteristics (depression and anxiety) have a link with self-injurious behaviors in young age[10]. It has been found to be strongly and positively correlated with the symptoms of depression. Anxiety is also positively correlated with self-harm. But when it occurs with depression it increases the tendency to harm oneself[11]. Similarly, stress has been reported to increase the risk of self-harm which increase the risk[12]. On the other-hand, social relations with self-harmers also make individual more prone to it[13].

Madge et al[14], conducted a survey through case studies from 6 European countries and Australia. Survey was conducted on 30477 students with age range from 14-17 years. Six percent students reported a history of deliberate self–harm. There was a positive correlation between self-injury and gender but it was not strong. A very significant correlation was found between anxiety and depression while male having more anxiety symptoms than females. A weak gender difference was also found between stressful life events. Which means that higher the stress, higher the symptoms of anxiety, depression and self-harm.

Self-harm is a serious issue and the underlying causes of the self-harm are not known precisely. In the current study, the authors explored the link between depression, anxiety, stress and self-harm. The results of the current study would help in better understanding the underlying mechanisms of the relationship between depressions, anxiety, stress, and self-harm in Pakistani context. The study also adds in the current knowledge on the scarce researches available on this topic in Pakistani context. In addition, some socio-demographic characteristics and their relation with depressions, anxiety, and stress and self-harm were also assessed.

MATERIAL AND METHODS

A cross sectional study was conducted at different colleges of Jhelum, Pakistan. The duration of study was 6 months (September 2016 to February 2017) and total of 400 (n=400) participants were included in the study. Sample size (n=400) was calculated by correlation calculator using consecutive non probability sampling. Out of the approached participants, 38 participants never returned the questionnaires, while 40 questionnaires were excluded as a result of incomplete information. The results for the present study are analyzed and drawn from the data available from the remaining 322 participants. The informed consent was sought before including participants in the study.

Demographic form consisted of the information regarding: gender, age, educational year, siblings, birth order, father education, mother education, family system, residential area and family monthly income. Physical and psychological illness variable were also included in the form.

For measuring the depression, anxiety and stress, the Depression Anxiety Stress Scale (DASS) translated by Huma & Khalily (2014) was used. It is a set of three self-reported scales designed to measure the negative emotional states of depression, anxiety and stress. Each of

Deliberate Self-Harm Inventory (DSHI) developed by Kim & Gratz (2001) was used to assess various aspects of deliberate self-harm. The measure assesses various aspects of deliberate self-harm, including frequency, severity, duration, and type of self-harming

Table-I: Socio demographic characteristics of participants (N=322).

Variable	Mean	SD	Frequency	Percentage (%)
Family Monthly Income			322	
30 or below			198	61.5
31-50	1.58	0.89	83	25.8
51-70			17	5.3
Above 70			24	7.5
Physical Illness			322	
Yes	1.98	0.11	04	1.2
No			318	98.8
Diabetes			-	-
Asthma			-	-
Heart Disease			-	-
Obesity			-	-
Any other			4	1.2
Psychological Illness			322	
Depression			03	0.93
Mood disorders	1.97		01	0.31
Anxiety		0.15	03	0.93
Epilepsy			01	0.31
Any other			-	

Table-II: Correlation between self-harm and depression, anxiety and stress (DASS).

Measure	1	2	M	SD
DSHI	-	-0.357**	33.21	1.46
DASS	-0.357**	-	16.13	9.58

**p-value<0.001

Table-III: Comparison of males and females on DASS and DSHI.

Variable	Male (n=128)	Female (n=194)		
	M ± SD	M ± SD	t(320)	p-vlaue
DASS	14.77± 9.17	17.03 ± 9.76	-2.08	.038*
DSHI	33.12 ± 1.48	33.26 ± 1.44	-0.85	.399

*p<0.05

the three DASS scales contains 14 items, divided into subscales of 2-5 items with similar content. Subjects are asked to use 4-point severity/ frequency scales to rate the extent to which they have experienced each state over the past week. Scores for Depression, Anxiety and Stress are calculated by summing the scores for the relevant items.

behavior. DSHI has high internal consistency (0.82) and test retest reliability and valid instrument for measuring self-harming behaviors. The frequencies and percentages were calculated using statistical package for social sciences version 20 (IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp). Pearson's Correlation, T-test and one way

analysis of variance were used to see the trend. A *p*-value less than 0.05 described the significance of the hypothesis.

RESULTS

Total of 322 participants were included in the main study for analysis. Out of which 39.75% were males and 62.25% were females. The frequencies and percentages of family monthly income were 30 or below (61.5%), 31-50 (25.8%), 51-70 (5.3%), and above 70 (7.5%), Physical Illness on the other hand comprised of Yes (1.2%) and No (98.8%). The results of the study include the socio-demographic characteristics, differences

who had family monthly income: 198 (30 or below), 83 (31-50), 17 (51-70) and 24 above 70.

Table-II explores the relation between deliberate self–harm and depression, anxiety and stress through Pearson Product-moment Correlation and the results show that there is negative correlation between self-harm and depression, anxiety and stress. But this correlation is not significant. Mean score of students on DSHI scale was 33.21 while on DASS it was 16.13.

In order to investigate the gender differences in self-harm and depression, anxiety and stress

Table-IV: Comparison of self-harm with respect to educational Year.

Educational Year		n	Mean ± SD
1st		98	33.05 ± 1.52
2nd		81	33.23 ± 1.40
3rd		61	33.42 ± .99
4th		82	33.21 ± 1.70

Variable	SS	df	MS	F	*p*-value
Between group	5.38	3	1.79	0.839	0.473
Within group	680.25	318	2.13		
Total	685.64	321			

*p<0.05

Table-V: Comparison of DASS with respect to educational year.

Educational Year		n	Mean ± SD
1st		98	15.59 ± 8.79
2nd		81	15.69 ± 8.38
3rd		61	16.40 ± 10.16
4th		82	17.01 ± 11.12

Variable	SS	df	MS	F	*p*-vlaue
Between group	112.53	3	37.51	0.406	0.749
Within group	29362.69	318	92.33		
Total	29475.25	321			

*p<0.05

among depression, anxiety, stress and, self-harm, and gender, year of education, family system, residential area and family monthly income are explored by using statistics techniques.

Table-I indicates that majority of students did not report any physical illness except 4.8 students gave history of psychological illness including 3 reported depression 1, mood disorder 3, anxieties and 1 epilepsy respectively. Students

t-test was applied. Females scored slightly higher on depressive, anxiety and stress than their male counterpart with the mean of 17.03 on DASS than male 14.77. This difference was significant showing *p*-value=0.038. However, no significant differences were observed in the score of self-harm where the mean was 33.12 for male and 33.26 for females showing *p*-value>0.05 (table-III).

One-way ANOVA was applied to assess the differences in self-harm and educational year.

Descriptive statistics in table-IV had revealed that the mean of 1st year through 4th years as: 33.05, 33.23, 33.42, and 33.21 respectively. Results show that level of education does not influence students' self-harm behaviors.

Lastly, One-way ANOVA was applied to assess the differences in depression, anxiety and stress and educational year. Descriptive statistics table-V revealed that the mean of 1st year through 4th years as: 15.59, 15.69, 16.40, and 17.01 respectively. Results show that level of education has no significant influence on students' symptoms of depression, anxiety and stress. There is some increase in the mean scores as the students' progress from 1st to 4th year class but it is minute and is not significant.

DISCUSSION

The present study examined the relationship between self-harm and depression, anxiety and stress among students. Demographic aspects of the students were also assessed in order to explore the variables related with self-harm and depression, anxiety and stress. Results have shown that there is a negative correlation between self-harm and depression, anxiety and stress. But this correlation was not significant. Moderating role of trait emotional intelligence was also examined.

The first objective of the study was to explain the relationship between depressions, anxiety, stress and self-harm, which was assessed by using Pearson Product-moment Correlation. The results revealed that there is a negative correlation between depression, anxiety, stress and self-harm. But that correlation was not significant. These results are consistent with the study conducted by Das et al[15]. They argued that 52% of students report self-harm has psychological problems (depression). But 48% subjects engaging in self-injurious behaviors did not have any symptoms of depression.

The second objective of the present study was to compare the scores of depression, anxiety, stress and self-harm with respect to gender. Finding reveal that gender differences were found in these variables. Females report slightly more score on depression, anxiety and stress than males on DASS. This is consistent with the study conducted by Bitsika, Sharpley and Melhem[16]. They proposed that female students had more symptoms of anxiety and depression than male students. Similar findings were proposed by Farooqi and Habib[17] in Pakistan. These variables also have positive correlation with each-other.

Present study did not find any significant differences in the score of self-harm for male and female students. Camp, Desmet and Verhaeghe[18] measured that male use banging more to injure themselves while female use more cutting and scraping method to inflict pain. But overall, no gender differences were found in the history of self-injurious behaviors. The findings also in accordance with the study of Hawton and Harriss[12], who argued that high number of self-harm among females in psychiatric clinics can be due to the reason that female are more prone to seek treatment after self-harm than male. Claes et al[19] also proposed that male and female did not differ on non-suicidal self-injury.

The last objective of the study was to measure the differences in DASS and self-harm because of educational year. Students in higher classes have a lot of stress because of the academic difficulties. Previous studies suggest that depression increases with the increase in level of education. But in current study, no significant difference was observed in stress and anxiety. The inconsistency in the finding may have happened as the result of different types of sample as previous studies used university undergraduates who are more serious in their studies while current study employed college students. This may also be related to the perceptions about the future adversities and exposure to a broader range of students coming from different backgrounds in universities, which lacks in the college setup.

CONCLUSION

Present study suggest that there is marginally negative correlation between self-

harm and depression, anxiety and stress but it has not proved by this study that whether self-harm protects student from depression, anxiety stress or other variables affect this relationship. Self-harm did not differ with respect to gender but students had more scores on depression, anxiety and stress than male.

The results of the current study would help in better understanding the underlying mechanisms of the relationship between depressions, anxiety, stress, and self-harm in Pakistani context. The study also adds in the current knowledge on the scarce researches available on this topic in Pakistani context. In addition, some socio-demographic characteristics and their relation with depressions, anxiety, and stress and self-harm were also assessed.

LIMITATIONS & RECOMMENDATIONS

Like every study, current study has a fair share of its own limitations as well. Because this study only focused on students of Jhelum, the problem of generalizing the finding to other areas of Pakistan is a serious one. Similarly like any survey, present study has relied only on self-report measures which may lead to biasness in data. It means that those individuals who are involved in the act of self-harm or have symptoms of anxiety, stress or depression may have not answer honestly.

The cross-sectional survey research design employed in the present study prevents us from making causal inferences and assessing the changes in variables across the time. Thus a mixed-method approach in the future research can be more beneficial in overcoming the inbuilt limitation of the design of the present study.

Future studies in the area of self-harm should focus on longitudinal study so that the relation between developmental level and these variables can be assessed. So it is suggested that others variables (that are not addressed in this study) should also be included in future study.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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