

THE RELATIONSHIP OF COPING STRATEGIES WITH STRESS, ANXIETY AND DEPRESSION AMONG MEDICAL STUDENTS

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Submitted: January 28, 2022
Accepted: July 02, 2022

ABSTRACT

OBJECTIVE

The study aimed to evaluate the relationship between coping strategies stress, anxiety and depression.

STUDY DESIGN

Cross-sectional study

PLACE AND DURATION OF THE STUDY

The study was conducted at Shalamar Medical and Dental College, Lahore from August to September, 2016.

SUBJECTS AND METHODS

In this study, 273 undergraduate MBBS students (years 1 to 5) were assessed for stress, anxiety and depression using DASS scale, while coping strategies were assessed using Brief-COPE scale. Data were analyzed using SPSS 21.

RESULTS

Elevated levels of stress, anxiety and depression were found among the students. Substance abuse, denial and self-blame have positive correlation with stress and emotional disturbance, while positive reframing correlated with predicted lower level of stress and emotional disturbance. Behavioural disengagement was associated with depression.

CONCLUSION

The findings confirm that stress and emotional disturbance are quite frequent among medical students, and they adopt a variety of coping methods, some of which are beneficial, while others are not. Students need to be educated about which coping methods are healthy and which ones are not. They should be helped to adopt the healthy ones with facilities such as counseling services, provision of extra-curricular activities and opportunities for healthy socialization.

KEYWORDS

Coping Strategies, Stress, Depression, Anxiety

INTRODUCTION

Coping is defined as an effort to reduce threat, harm, loss or distress associated with those experiences.¹ The coping process involves three main aspects: the source of the stress, cognitive appraisal and coping mechanisms.² These coping mechanisms or strategies have been further categorised as problem versus emotion focused, functional versus dysfunctional, approach versus avoidance, engagement versus disengagement, and primary versus secondary control coping.²

Some forms of coping are adaptive or maladaptive based upon whether they promote wellbeing. Adaptive forms include regulated emotional expression, direct coping, reappraisal, non-repressive self-control, while maladaptive coping strategies include rigid dysfunctional approach coping, rigid maladaptive avoidance and emotional suppression.³

The coping strategies adopted by a distressed individual have an important effect on that individual's physical and mental health, based upon whether they reduce stress, anxiety and depression.^{4,5,6} Engagement oriented coping strategies tend to have better mental health outcomes,⁴ while disengagement coping is associated with poorer outcomes.⁶ Coping strategies other than disengagement oriented ones, such as rumination, self-blame, venting and substance abuse, can also be associated with more distress, anxiety and depression.^{5,7}

Stress and resulting emotional problems are a major issue for medical students, who spend five years engaged in intense study and preparation for a life in the medical profession.

A study in Sweden on stress and depression in medical students found a prevalence of 12.9%, with females affected more and with 2.7% suicide attempts.⁸ Study pressure, workload and teaching shortcomings were sources of stress.

Similar studies in Saudi Arabia showed 57% of students felt emotionally distressed, where 19.6% experienced severe stress. Both stress and depression were highest in the earlier three years of studies.⁹ Another study conducted in Saudi Arabia found depression and anxiety to be greater in the 1st year of medical studies.¹⁰ A research from Turkey showed 17.8% of medical students with an emotional disorder,¹¹ while in India, 49.1% of students had depression in the first two



years of study.¹² Somewhat different findings were seen in Brazil, the frequency of depression was 38% and more during the “internship period” of 5th and 6th years, which may be due to different stressors in that environment.¹³ Similar studies on Pakistani medical students found even greater emotional distress with depression at 35.5% and anxiety at 47.7%.¹⁴ Other researches from Pakistan turned up 43.7% rates of anxiety and 19.5% of depression.^{15,16} Higher rates of anxiety and depression of 60%¹⁷ and 70%¹⁸ were found in the first 2 years of medical studies.

Considering that stress, anxiety and depression are such a major issue, particularly among Pakistani medical students, it is pertinent to explore the coping strategies used by medical students to reduce distress. A study conducted on Italian medical students found that seeking social support was the most common coping mechanism, while positive thinking and active coping predicted reduced stress and depression.²¹ Another study from Malaysia found stressed students used venting, denial, self-blame and disengagement more, while no-stressed students used emotional support more.²² Smoking, self-blame, lack of emotional support and lack of acceptance predicted stress. Pakistani medical students at a college in Karachi were studied showed a variety of coping mechanisms for stress, including socialization, sleep, music, sports, isolation and study.²³ A more recent study conducted at King Edward Medical College found that students who were emotionally distressed coped by self-blaming, denial, alcohol, and drugs, while non-distressed students coped using religion.²⁴

To our knowledge, a study has not been conducted in Pakistan which, besides enlisting coping strategies, and studying their correlations with psychological morbidity, also establishes which coping methods are predictive of increased or decreased stress, anxiety and depression. Thus, it is the aim of this study to investigate the relationship between various coping strategies and stress, anxiety and depression and to find which coping methods are predictive of positive or negative outcomes.

SUBJECTS AND METHODS

This cross-sectional survey was conducted at Shalamar Medical and Dental College, Lahore. The period of study was from August to September, 2016, and the sampling method was purposive. The ethical approval was taken from the Ethical Review Board of Shalamar Medical and Dental College. We used the Depression Anxiety and Stress scale (DASS)²³ to assess depression, anxiety and stress, while coping behavior was assessed using the Brief COPE questionnaire²⁴. The DASS²³ is a 42 item self-report instrument used to measure negative emotional states of depression, anxiety, and tension/stress. Each item is rated on a 4-point Likert scale of severity or frequency over the last one week. The Brief COPE²⁴ is a 28-item

self-report questionnaire used to assess effective and ineffective ways of coping with stress. Students were engaged after one of their lectures and were briefed about the purpose of the study. They were ensured of confidentiality and requested to participate in the study. The data were collected anonymously. Students of all years of medical studies were approached. 313 students completed the questionnaires after signing formal consent. Those students who were suffering from a psychiatric or medical disorder were excluded. 273 students were finally included in the study. SPSS 21 was used to analyse and interpret the collected data.

RESULTS

Total 273 cases (male 160 and female 157) were inducted in this study. Details are given in Tables 1-4.

Table 2 indicates that 63% were not depressed, while 37% had elevated depression scores. 20% had mild, while 17% had moderate levels of depressive symptoms. Regarding anxiety, 50% of students were in the normal range, 14% had mild anxiety, 26% had moderate and 10% had severe anxiety symptoms. In the domain of stress, 75% of students fell within the normal range, 22% of students were mildly stressed and 3% were moderately stressed out. No students reported being severely distressed.

Table 4 shows that denial, self-blame and substance abuse had a significant positive predictive relationship with depression, while positive reframing significantly predicted reduction in depression. Denial, self-blame and substance abuse are significantly positive predictive in anxiety. Self-blame and substance abuse positively predicted stress while positive reframing significantly negatively predicted stress.

Table 1
Gender and Study year distribution of 1st to 5th year students of Shalamar Medical and Dental College

Gender	f	%
Male	116	42.5
Female	157	57.5
Study Year		
1 st	42	15.4
2 nd	53	19.4
3 rd	78	28.6
4 th	55	20.1
5 th	45	16.5

Note: N=273, f= Frequency, %=Percentage



Table 2
Severity of Depression, Anxiety and Stress among Study year distribution of 1st to 5th year students of Shalamar Medical and Dental College

Years of Study	Normal	Mild	Moderate	Severe
Depression				
First	20	15	6	1
Second	23	14	16	0
Third	58	10	10	0
Fourth	30	13	12	0
Fifth	40	2	3	0
Total	171	54	47	1
Anxiety				
First	18	6	13	5
Second	16	11	16	10
Third	50	7	16	5
Fourth	21	14	14	6
Fifth	32	1	11	1
Total	137	39	70	27
Stress				
First	22	18	2	0
Second	30	21	2	0
Third	67	9	2	0
Fourth	47	8	0	0
Fifth	39	5	1	0
Total	205	61	7	0

Table 3
Inter-Correlations, Means, and Standard Deviations of Depression, Anxiety, Stress and coping strategies among 1st to 5th year students of Shalamar Medical and Dental College

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Depression	-																
Anxiety	.60**	-															
Stress	.58**	.53**	-														
Self-destruction	-.08	.015	.066	-													
Active coping	-.115	-.09	-.09	.43**	-												
Denial	.29**	.30**	.14*	.13*	.08	-											
Substance use	.28**	.30**	.18**	-.09	-.13*	.43**	-										
Emotional support	-.09	.05	-.00	.36**	.30**	.15**	.08	-									
Instrumental support	-.10	-.08	-.09	.28**	.34**	.17**	.02	.53**	-								
Behavioural disengagement	.13*	.10	.02	.19**	.13*	.37**	.30**	.28**	.30**	-							
Venting	-.02	.09	-.01	.33**	.30**	.14*	-.00	.39**	.40**	.19**	-						
Positive reframing	-.14*	-.04	-.13*	.35**	.43**	.08	-.05	.38**	.36**	.18**	.30**	-					
Planning	-.04	.03	.03	.40**	.54**	.04	-.06	.39**	.42**	.16**	.36**	.50**	-				
Humor	-.02	-.03	-.03	.18**	.16**	.12*	.18**	.24**	.15**	.19**	.06	.13*	.16**	-			
Acceptance	-.14*	-.07	-.11	.49**	.51**	-.00	.15*	.37**	.40**	.21**	.36**	.48**	.58**	.12*	-		
Religion	-.08	.04	-.04	.36**	.44**	.09	-.13*	.37**	.34**	.17**	.27**	.40**	.43**	.14*	.47**	-	
Self-Blame	.13*	.29**	.18**	.38**	.23**	.20**	.10	.23**	.22**	.20**	.35**	.21**	.35**	.08	.33**	.30**	-
M	1.55	1.96	1.27	5.10	5.44	3.92	3.10	4.69	4.88	4.22	4.54	5.13	5.30	3.82	5.17	5.51	4.62
SD	.78	1.09	.50	1.63	1.68	1.68	1.63	1.70	1.76	1.64	1.51	1.78	1.66	1.55	1.75	1.89	1.78

Note: N=273, M=Mean, SD= Standard Deviation. * = P<0.05, ** = p<0.01.

Table 4
Predictors of Depression, Anxiety and Stress among the first to final year students of Shalamar Medical and Dental College

Variable	Depression	Anxiety	Stress
	Model B	Model B	Model B
Constant	1.07***	.43*	1.09***
Denial	.10***	.10**	-
Substance Use	.08**	.14**	.04*
Positive reframing	-.07**	-	-.04**
Self-blame	.05*	.14***	.05**
F	11.78***	20.22**	8.60***
R ²	.15	.18	.08

Note: N=273, *p<.05, **p<.01, ***p<.001

DISCUSSION

The findings of our study show that 37% of our students had elevated depressive symptoms, 50% of them had anxiety and 25% of them reported feeling stressed. Anxiety was more frequent and more severe than depressive symptoms or feelings of being stressed. Depression, stress and anxiety were all positively and significantly associated with each other. Some coping strategies, such as denial, self-blame and substance use, were positively and significantly correlated with all three negative emotional states. Behavioral disengagement was also significantly and positively correlated with depression. However, positive reframing negatively correlated with depression and stress, and this correlation was statistically significant. Acceptance was also significantly and negatively correlated with depression, meaning that those students who accepted their stressful circumstances were less likely to be depressed.

Regression analysis of the data also revealed significant predictive relationships between various coping methods and depression, anxiety, and stress. Denial, substance abuse and self-blame positively, and significantly predicted depression and anxiety. Self-blame and substance abuse positively predicted stress, while positive reframing predicted reduction in stress. Researches in Western countries^{25,26,27,28} show that adaptive coping methods, such as problem solving, positive reinterpretation and expression of emotion, predict adaptation and reduction in stress among medical students. A study conducted in Italy¹⁹ found that positive thinking predicted reduction not only stress, but depression as well. Research done in developing countries also identifies some coping methods as being associated with reduced distress, for example, Fares J et al²⁹, found physical activity and music to be associated with reduced stress and burnout among Saudi medical students. Extracurricular activities were also found a disadvantage, though as musical and social activities were found to be associated with lower academic performance.



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In a study done in Malaysia²⁰, Sami AbdoRadman et al found that students who felt stressed used denial, venting, self-blame and disengagement more often, while non-stressed, or better adjusted students used emotional support more often. The same study found that emotional support and acceptance predicted reduction in stress, whereas self-blame positively predicted distress. This finding agrees with our results in that self-blame positively predicted stress, but differed such that emotional support and acceptance were not found to significantly predict reduction in stress. This difference may be attributed to a genuine difference in the populations studied, or lack of statistical significance, thus the need for a larger sample size in our study. In Pakistan, we found several studies that have discussed stress, psychological morbidity and coping methods among medical students.^{21,22,30,31,32} Of these, most simply described or enlisted coping strategies, whereas two studies^{22,32} also measured the coping strategies using standardized scales and then subjected them to statistical analysis.

Our study finding relates with Nazish Imran et al²² study, which reported presence of psychological distress (caseness) to positively correlate with self-blame, denial and substance use, whereas students not suffering from psychological disturbance (non-caseness) used religion as a coping method. In our study data, the correlation between religion and non-caseness was not found at a statistically significant level. Various reasons can be conjectured for this, but possibly a study with a larger sample size would clarify the apparent difference. Bushra Akram et al³² conducted a very large multi-centre study, focusing purely on coping methods and suicidal ideation. They found that self-distraction, active coping, emotional support, instrumental support, positive reframing, planning, humor, acceptance and religion to predict lesser rates of suicidal ideation, whereas denial, substance use, venting and self-blame were positively predictive of suicidal ideation. This was higher powered, thus showed a larger number of statistically significant relationships. Effect sizes were also larger than in our study. These discrepant findings may also be related to the fact that only one particular severe symptom of emotional distress, i.e. suicidal ideation, was being assessed. This question needs to be clarified in the future with much larger studies but focusing on stress, anxiety and depressive symptoms.

Overall, the comparison of our study with other works yields a general agreement, but with caveats that need to be clarified with larger and more rigorous studies, possibly of longitudinal design, to assess the evolution of coping mechanisms with changing stresses and to establish temporal relationships between negative emotional states/stress and coping methods. Our study emphasizes the magnitude of the problem of stress and psychological morbidity among medical students, and that some of them are insufficiently equipped from the point of view of their coping habits to deal with this. It is important to psycho-educate our students about the importance of adaptive coping styles, and about avoiding those responses which lead to bad outcomes.

CONCLUSION

We assessed that stress, anxiety and depressive symptoms are quite prevalent among our student body, and they resort to a variety of coping methods, some of which predict good outcomes, whereas others predict worsening of distress. Ample opportunities for extra-curricular and recreational activities, as well as availability of counseling services, should be ensured. Medical students need to be educated about the concept of coping strategies and their efficacy in handling distress.

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Undertaking

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4	Dr. Saad Bashir Malik	Professor Department of Psychiatry and Behavioural and Dental College, Lahore	Planned and supervised overall study	
5	Dr. Iftikhar Ahmed Minhas	Medical Officer Department of Psychiatry and Behavioural Sciences, Shalamar Medical and Dental College, Lahore	Data collection	