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Original Research Article

BEYOND THE WHITE COAT: NAVIGATING STRESS AND COPING STRATEGIES IN A MEDICAL COLLEGE OF KARACHI

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Abstract: *An analytical correlational study was conducted at a university in Karachi from June 2021 to December 2021 to evaluate stress levels and types of specific coping strategies medical students adopt. All first- and third-year MBBS program students were included in the study. Depression, Anxiety, and Stress Scale – 21 (DASS 21) was used to measure psychological variables. Coping strategies were evaluated through the Brief Cope Scale. The total number of students who filled out both questionnaires was 96 in the first year and 89 in the third year, with a response rate of 64%, and 59.3% respectively. The percentage of students whose stress level ranges from mild to extremely severe was 50% in the first year and 34.83% in the third Year. The three most common coping strategies used by first-year students were religion, acceptance, and self-blame, while those used by third-year students were religion, acceptance, and active coping. It can be concluded that medical students have high-stress levels and use varying coping strategies to adapt and settle.*

Keywords: Stress, Coping Behavior, Anxiety, Medical Students, Depression

Introduction

Most of the individuals in the medical profession are stressed due to the extensive curriculum, competitive environment, clinical workload, and poor work-life balance. Increased stress and anxiety levels may lead to poor academic performance (Ali et al., 2019). Stress is the wear and tear our bodies experience as we adjust to our continually changing environment. A friendly learning environment, teaching coping strategies, and providing psychological counseling may lessen stress in medical students (O'Byrne et al., 2021). Coping has two major functions: regulating emotions (emotion-focused coping) and managing the problem (problem-focused coping). It has two forms: active forms (positive re-evaluation and focus on problem-solving) lead to better performance, and passive forms (negative self-focusing) lead to lower performance (Ragab et al., 2021). Thus, it is critical to guide students about healthy coping strategies. A qualitative study from Germany showed that academic stress also affects non-academic life, and social interaction may help reduce stress (Bergmann et al., 2019). A study from the Netherlands showed that major causes of stress in premedical students were related to academic and group activities (Lyzwinski et al., 2019). The first year of MBBS was reported to be the most stressful (Kebede et al., 2019). It could be due to the change of learning environment, high family expectations, and lack of emotional and social support. The study divided coping strategies into emotion-focused, problem-focused, and avoidant strategies. Considering the high importance of the topic, the present study aims to evaluate the level of stress and the types of specific coping strategies adopted by medical college students.

Methodology

An analytical correlational study was conducted at a university in Karachi from June 2021 to December 2021. All first- and third-year MBBS program students were included in the study. There were 150 students in each year. The reason for choosing students from year-1 and year-3 MBBS programs was the change of academic environment from higher secondary to professional education and then from preclinical. Informed consent of the participants was taken. The ethical board of the university approved the study.

Depression, Anxiety, and Stress Scale – 21 (DASS 21) was used to measure psychological variables. There was a total of 21 items in the questionnaire. It was scored on 4 points Likert scale. Coping strategies were evaluated through the Brief Cope Scale. It consists of 14 scales, each having two items. There are 28 items in the questionnaire. It is scored on 4 points Likert scale. Coping strategies were grouped into three categories: avoidant, emotion-focused, and problem-focused strategies. Both the questionnaires included data about demographics and were administered online as Google Forms. At the time of data collection, both first and third-year students were free after taking their respective examinations; therefore, the factor of anxiety and stress related to assessments was excluded.

The SPSS version 24.0 was used for statistical analysis. Descriptive analysis of sociodemographic, DASS scores, and coping strategies was done by calculating mean, standard deviation, percentages, and frequencies. Inferential analysis used Spearman correlation, and a p-value of 0.05 was considered statistically significant.

Results

The total number of students who filled out both questionnaires was 96 in the first year and 89 in the third

year, with a response rate of 64% and 59.3%, respectively. The mean age of the first-year students was 19 years, with 33 men and 63 women. In the third year, the mean age was 22 years, and there were 36 men and 53 women. There were 11 students in the first year with a history of psychological illness compared to only 5 in the third Year. Most students in the third Year have a normal stress level (65.1%) compared to 50% in the first Year. The percentage of students whose stress level ranges from mild to extremely severe was 50% in the first year and 34.83% in the third Year. Women had higher stress levels than men in both years of study (Table I).

Table II shows the frequency of different coping skills in first- and third-year medical students, respectively. The three most common coping strategies used by first-year students were religion, acceptance, and self-blame, while those used by third-year students were religion, acceptance, and active coping.

Table III shows the mean and standard deviation of different coping strategies and their correlation with perceived stress in first-year students. It showed that acceptance, humor, planning, positive reframing, self-blame, self-distraction, venting, active coping, behavioral disengagement, and denial had a positive significant relation with perceived stress. Substance use, use of emotional and instrumental support, and religion had a positive non-significant relation.

Table IV shows the mean and standard deviation of coping strategies and their correlation with perceived stress in third-year students. It showed that humor, planning, self-blame, self-distraction, venting, active coping, behavioral disengagement, and denial had a positive significant relationship with perceived stress. In contrast, religion had a negative significant relation. Substance use, emotional and instrumental support, positive reframing, and acceptance had a positive non-significant relation.

Table I Descriptive analysis of DASS scores

Subscale		**1st Year**			**3rd year**		
		Male n (%)	**Female n(%)**	**Mean ± SD**	**Male n(%)**	**Female n(%)**	**Mean ± SD**
	Total	33 (34.4%)	63 (65.66%)	15.90 ± 11.709	36 (40.44%)	53(59.55%)	13.51 ± 10.960
Depression	Normal	10 (30.30%)	23 (36.50%)		16 (44.44%)	22 (41.50%)	
	Mild	6 (18.18%)	8 (12.69%)		4 (11.11%)	9 (16.98%)	
	Moderate	10 (30.30%)	11 (17.46%)		5 (13.88%)	13 (24.52%)	
	Severe	1 (3.03%)	8 (12.69%)		4 (11.11%)	3 (5.66%)	
	Extremely severe	6 (18.18%)	13 (20.63%)		7(19.44%)	6 (11.32%)	
Anxiety	Normal	14 (42.42%)	20 (31.74%)	12.08 ± 9.545	15 (41.66%)	23 (43.39%)	10.79 ± 9.228
	Mild	3 (9.09%)	4 (6.34%)		4 (11.11%)	4 (7.54%)	
	Moderate	6 (18.18%)	16 (25.39%)		7 (19.44%)	13 (24.52%)	
	Severe	4 (12.12%)	5 (7.93%)		1 (2.77%)	6 (11.32%)	
	Extremely severe	6 (18.18%)	18 (28.57%)		9 (25%)	7 (13.20%)	
Stress	Normal	18 (54.54%)	30 (47.61%)	15.46 ± 10.241	26(72.22%)	32 (60.37%)	13.08 ± 9.578
	Mild	6 (18.18%)	11 (17.46%)		4 (11.11%)	9 (16.98%)	
	Moderate	5 (15.15%)	10(15.87%)		2 (5.55%)	4 (7.54%)	
	Severe	2 (6.06%)	6 (9.52%)		4 (11.11%)	4 (7.54%)	
	Extremely severe	2 (6.06%)	6 (9.52%)		0 (0%)	4 (7.54%)	

Table II Coping skills adopted by the students

Coping Skills		**I haven't been doing this at all**		**A little bit**		**A medium amount**		**I've been doing this a lot.**	
		1st Year	3rd Year	1st Year	3rd Year	1st Year	3rd Year	1st Year	3rd year
1	Self-distraction-A	29	33	78	66	52	50	33	29
2	Active coping-PF	42	36	72	57	54	53	24	32
3	Denial-A	108	118	55	42	17	15	12	11
4	Substance use-A	184	158	3	15	3	5	2	-
5	Use of emotional support-EF	69	77	80	57	31	28	12	16
6	Use of instrumental support-PF	70	68	91	66	23	29	8	15
7	Behavioral disengagement-A	97	106	55	46	27	14	13	12
8	Venting-A	73	65	74	69	29	25	16	19
9	Positive reframing-EF	48	42	76	69	43	43	25	24
10	Planning-PF	35	39	73	57	59	51	25	31
11	Humor-EF	104	82	47	53	26	17	15	26
12	Acceptance-EF	37	32	59	64	54	43	42	39
13	Religion-EF	34	46	66	63	39	30	53	39
14	Self-blame-A	68	66	57	54	28	28	39	30

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(A= Avoidant, EF= Emotion-focused, PF= Problem focused)

Table III Mean of various components of coping and its correlation with perceived stress

Types of Coping Skills	Mean	SD	Spearman rho	*P-Value*
Self-distraction	4.93	1.489	0.302**	**0.003 (S)**
Active coping	4.63	1.598	0.256*	**0.012 (S)**
Denial	3.30	1.536	0.439**	**0.000 (S)**
Substance use	2.16	0.744	0.167	0.103 (NS)
Use of emotional support	3.85	1.549	0.182	0.067 (NS)
Use of instrumental support	3.68	1.455	0.064	0.535 (NS)
Behavioral disengagement	3.54	1.622	0.534**	**0.000 (S)**
Venting	3.88	1.496	0.549**	**0.000 (S)**
Positive reframing	4.47	1.765	0.298**	**0.003 (S)**
Planning	4.77	1.625	0.317**	**0.002 (S)**
Humor	3.50	1.771	0.348**	**0.001 (S)**
Acceptance	5.05	1.755	0.396**	**0.000 (S)**
Religion	5.16	1.921	0.014	0.890 (NS)
Self-blame	4.40	2.013	0.604**	**0.000 (S)**

(p value= ≤0.05 was considered significant. S=significant, NS= non-significant)

Table IV Mean of various components of coping and its correlation with perceived stress

Types of Coping Skills	Mean	SD	Spearman rho	*P-Value*
Self-distraction	4.84	1.514	0.368**	**0.000 (S)**
Active coping	4.91	1.881	0.270*	**0.011 (S)**
Denial	2.91	1.240	0.243**	**0.022 (S)**
Substance use	2.28	0.769	0.069	0.518 (NS)
Use of emotional support	3.81	1.839	0.197	0.064 (NS)
Use of instrumental support	3.90	1.765	0.206	0.053 (NS)
Behavioral disengagement	3.20	1.508	0.042**	**0.000 (S)**
Venting	3.98	1.692	0.404**	**0.000 (S)**
Positive reframing	4.55	1.699	0.081	0.449 (NS)
Planning	4.83	1.753	0.213*	**0.045 (S)**
Humor	3.85	2.009	0.271*	**0.010 (S)**
Acceptance	5.00	1.752	0.187	0.079 (NS)
Religion	4.67	2.044	-0.239*	**0.024 (S)**
Self-blame	4.25	1.990	0.511**	**0.000 (S)**

(p-value of ≤0.05 was considered significant. S=significant, NS= non-significant)

Discussion

In this study, we evaluated stress levels and types of specific coping strategies medical students adopt. The study showed that half of the first-year students (50%) who responded suffered from mild to extremely severe stress levels compared to 34.83% of third-year students. More than half of first-year students had depression (65.62%) and anxiety (64.58%) compared to depression and anxiety levels of 57.3% in third-year students.

In both academic years, women showed higher stress levels, 52.38%, and 39.62%, compared to their male counterparts, 45.45% and 27.77% respectively. Similar results were reported from a study using the same measuring scale (Iqbal et al., 2015). Women's high-stress levels could be because they feel more overall and academic stress than men(Graves et al., 2021).

The current study found that first-year students had high-stress levels and used emotion-focused and avoidant coping strategies (religion, acceptance, and self-blame) more commonly. Similar results were reported by a previous study where the causes of the high-stress levels in medical students were identified as course workload and lack of relaxation time(Melaku and Bulcha, 2021). A study also found a high-stress level among first year medical students due to high academic stress, conflict with other students and lack of time for family and friends (Nebhinani et al., 2021). Contrary results were seen in a study where 4th-year students had higher mean stress levels than first-year students. The reason given was an increased workload of clinical schedules (Dagistani et al., 2016).

The study found that third-year students used problem-focused and emotion-focused coping strategies compared to first-year students, who mostly used emotion-focused coping strategies. Research shows that problem-focused coping strategies are more adaptive than emotion-focused or avoidance strategies (Salam et al., 2019). This could be a reason for the difference in stress levels between the two groups. In addition, senior students may have adapted to the university environment better and received more counseling opportunities from seniors. A study showed that emotion-focused was the most common coping strategy used by first- and second-year medical students (Fitzgibbon and Murphy, 2023), similar to the findings of our study. A study reported that selecting coping strategies depends on individuals' perception of stressors and specific situations (Freire et al., 2020). Therefore, it is essential to guide and train students

in using effective contextual coping strategies to minimize their stress levels.

In the first year, a moderately significant positive relationship existed between perceived stress and avoidant coping strategies. In the third Year, there was a moderately significant positive relationship between the level of perceived stress and avoidant coping strategies and a negative significant relation with emotion-focused (religious) strategy. Similar results were reported from a study where participants with high stress levels used self-distraction methods, like watching television, to eliminate their stress. Students with low stress levels used adaptive and emotion-focused strategies. The most common coping strategies used by students of both years in our study were religion and acceptance. A scoping review of 24 articles from different locations revealed that the most common coping strategy used was social and emotional seeking, followed by active coping, acceptance, and avoidance (Sattar et al., 2022). The presence of a correlation between the level of stress and ways of coping indicates that by teaching effective coping strategies, students' stress levels can be minimized. The study was limited to one institute only; therefore, results could not be generalized. Further research can be done at the multi-institutional level.

Conclusion

Medical students have high-stress levels and use varying coping strategies to adapt and settle. There is a need for an institution-wide student support system to provide guidance and counseling as well as to conduct need-based workshops.

Declarations

Data Availability statement

All data generated or analyzed during the study are included in the manuscript.

Ethics approval and consent to participate.

Approved by the University (**Ref. code: 1461019AFDED**)

Consent for publication

Approved

Funding

Not applicable

Conflict of interest

The authors declared an absence of conflict of interest.

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