

Coping Styles and its Association with Sources of Stress in Undergraduate Medical Students

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ABSTRACT

Context: The two ubiquitous factors that have been identified in medical courses to underlie mental health are stress and different coping styles adopted to combat stress. **Aim:** To find the association between coping styles and stress in undergraduate medical students. **Settings and Design:** A medical college in Central Kerala. A cross-sectional study design was adopted. **Materials and Methods:** Source and Severity of Stress Scale, Medical Student Version, was used to assess the source and nature of stress. Brief Cope was used to find out the coping styles adopted. **Statistical Analysis:** The statistical analysis was done using Statistical Package for Social Sciences version 20 and SAS. Chi-square analysis was used to find the association between coping styles and stress domains and with the overall stress score. **Results:** There is a significant positive association between overall stress score and coping styles ($P=0.001$) of 'Negative cope', 'Blame', and 'Humor'. 'Positive cope' and 'Religion' has significant positive association with 'Academics' ($P=0.047$) and 'Self Expectations' ($P=0.009$). 'Blame' ($P<0.001$) has very high significant positive association with 'Academics', 'Self expectation', and 'Relationships'. Very high significant positive association is further found between 'Humor' ($P<0.001$) and 'Self expectations', 'Living conditions', and 'Health and Value conflict'. 'Substance Use' is positively associated in high significance to 'Health and Value conflict' ($P<0.001$). **Conclusions:** The outcome of the study emphasizes the need for stress management techniques in the medical school.


Key words: Coping styles, medical students, stress

INTRODUCTION

In India, getting into the medical school is considered to be very prestigious, but the accompanying challenges of being in medical school are largely overlooked. The stress of medical training stems from academic pressure, perfectionist standards, and demanding nature of medical

practice which involves the most personal or emotionally draining aspects of life (human suffering, death, sexuality, fear, and medico-legal issues).^[1] In the Indian scenario, too much content is delivered in a short span of time and the students are required to undertake too many examinations.^[2] Compounded to this is the prospect of being away from home and the need to develop a whole new set of social and interpersonal support.

Stress in the medical field can have detrimental effect on health, academic performance, memory and learning, problem solving abilities, medical decisions, and ultimately, patient care.^[3] The perception of stress and the ways in which it is managed is largely determined by the coping strategies adopted. Coping style employed also predicts psychological distress, poor adjustment,

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and coping to result in poor academic performance among students.^[4]

Though a few studies have been carried out in India on exploring the stressors and coping styles of Indian medical under graduates,^[2,5,6] there is a dearth of more extensive work. While some studies show that medical students who use active coping styles tend to have lower psychological distress,^[7] others opine that stress is more in students who use dominant coping strategies such as positive reappraisal and planned problem solving.^[8] In the face such conflicting conclusions, we aimed to find the nature of stress and the coping styles employed by the under graduate medical students in a medical college in Central Kerala. In carrying out this study, we also hope that the findings will give us a direction towards generalizing the results, since the institution has the representation of students from all parts of India.

MATERIALS AND METHODS

The study was conducted in a medical college in Central Kerala. Being a population based study, 640 subjects (100 × 4 batches of MBBS students and 60 × 4 batches of BDS students), were approached of which 534 subjects consented to take part in the study and returned the questionnaire. Thirty-four response sheets were incomplete and hence had to be omitted, and finally a total of 490 students (303 Medical students and 187 Dental students) comprising of all the batches from 2009 to 2012 participated in the study.

Institution Ethics Committee approval for the study was obtained, and an informed consent was taken from all the willing participants. Prior to the administration of the tools, each batch was met at the lecture halls and the study was explained to them. An opportunity to ask questions were provided and clarifications were made.

Participants were administered with an indigenously developed stress assessment tool, Sources and Severity of Stress Scale (S3S)-Medical Students' Version. The S3S was validated in a sample of 518 students. The scale assesses stress in the domains of academics, self expectations, relationships, living conditions, and health and value conflict. S3S quantifies stress levels experienced under each domain, and also gives an overall stress score. This tool was tested rigorously for its psychometric properties, which were found to be good.

In addition, the participants were also administered with Brief Cope^[9] to find out the coping styles adopted by this group to handle stress. Brief Cope is a brief situational format of COPE Inventory^[10] which had 60 items. Brief Cope consists of 28 items, and was subjected to factor analysis to create a new cluster of

coping styles from the scale, relevant to the sample at hand. Subjecting Brief Cope to factor analysis (Promax Rotation) resulted in the grouping of the items under seven dominant coping styles namely Positive Coping Style, Support Coping Style, Negative Coping Style, Blame, Humor, Religion, and Substance Use. The internal consistency of the factor analyzed items was computed using Cronbach's Alpha, and the overall internal consistency was 0.89. The range of internal consistency of the coping styles ranged from 0.63 to 0.833. The responses to the domains were classified as instances of 'no/mild' coping, 'moderate' coping, and 'high' coping.

The participants took about 20-25 minutes to complete the questionnaires.

RESULTS

The result of Table 1 showed that specific coping styles were significantly associated with the overall stress score. Students with Non cope/negative coping (49.8%), Blame (53%), and Humor (54.7%) were found to have higher stress levels.

In all the stress domains, it can be seen that higher the stress scores more frequent the usage of all coping styles [Tables 2-6].

Academic stress was one of the most stressful domains and higher the level of stress coping styles of Non cope/negative coping (39%), Blame (43.6%), and Humor (41%) were employed. The stress domain Self Expectation, which is also one of the highest stressor domain, exhibited the same trend of frequency in the usage of coping styles Non cope/negative coping, Blame, and Humor as in the stressor Academics. Here, however,

Table 1: Association of the coping styles to the overall stress

Coping styles	Overall stress				P value
	1 (%)	2 (%)	3 (%)	4 (%)	
Support	10 (8.2)	43 (35.2)	44 (36.1)	25 (20.5)	0.054
	11 (5.3)	54 (26)	96 (46.2)	47 (22.6)	
	8 (5)	35 (21.9)	88 (55)	29 (18.1)	
Non-cope	18 (8.6)	73 (34.8)	92 (43.8)	27 (12.9)	<0.001
	9 (4.1)	50 (22.6)	110 (49.8)	52 (23.5)	
	2 (3.4)	9 (15.3)	26 (44.1)	22 (37.3)	
Blame	14 (9.3)	55 (36.4)	68 (45)	14 (9.3)	<0.001
	13 (5.9)	59 (26.6)	98 (44)	52 (23.4)	
	2 (1.7)	18 (15.4)	62 (53)	35 (29.9)	
Humor	11 (6.3)	67 (38.1)	72 (40.9)	26 (14.8)	<0.001
	17 (8.6)	49 (24.9)	92 (46.7)	39 (19.8)	
	1 (0.9)	16 (13.7)	64 (54.7)	36 (30.8)	
Substance	27 (6.1)	124 (28.1)	208 (47.2)	82 (18.6)	0.032
	2 (5.9)	7 (20.6)	12 (35.3)	13 (38.2)	
	0 (0)	1 (6.7)	8 (53.3)	6 (40)	

Table 2: Association of the coping styles to academics

Coping styles	Academics					P value
	0 (%)	1 (%)	2 (%)	3 (%)	4 (%)	
Positive	2 (3.2)	13 (20.6)	35 (55.6)	12 (19)	1 (1.6)	0.047
	0 (0)	43 (16.3)	114 (43.2)	95 (36)	12 (4.5)	
	2 (1.2)	23 (14.1)	75 (46)	54 (33.1)	9 (5.5)	
Non-cope	3 (1.4)	45 (21.4)	99 (47.1)	58 (27.6)	5 (2.4)	0.01
	0 (0)	31 (14)	98 (44.3)	80 (36.2)	12 (5.4)	
	1 (1.7)	3 (5.1)	27 (45.8)	23 (39)	5 (8.5)	
Blame	2 (1.3)	39 (25.8)	79 (52.3)	29 (19.2)	2 (1.3)	<0.001
	2 (0.9)	32 (14.4)	98 (44.1)	81 (36.5)	9 (4.1)	
	0 (0)	8 (6.8)	47 (40.2)	51 (43.6)	11 (9.4)	
Humor	1 (0.6)	38 (21.6)	88 (50)	43 (24.4)	6 (3.4)	0.009
	3 (1.5)	30 (15.2)	87 (44.2)	70 (35.5)	7 (3.6)	
	0 (0)	11 (9.4)	49 (41.9)	48 (41)	9 (7.7)	

Table 3: Association of coping styles to self expectation

Coping styles	Self expectation					P value
	0 (%)	1 (%)	2 (%)	3 (%)	4 (%)	
Non-cope	9 (4.3)	74 (35.2)	95 (45.2)	26 (12.4)	6 (2.9)	<0.001
	3 (1.4)	65 (29.4)	84 (38)	50 (22.6)	19 (8.6)	
	0 (0)	10 (16.9)	25 (42.4)	18 (30.5)	6 (10.2)	
Blame	7 (4.6)	70 (46.4)	56 (37.1)	15 (9.9)	3 (2)	<0.001
	5 (2.3)	61 (27.5)	104 (46.8)	39 (17.6)	13 (5.9)	
	0 (0)	18 (15.4)	44 (37.6)	40 (34.2)	15 (12.8)	
Humor	9 (5.1)	67 (38.1)	73 (41.5)	20 (11.4)	7 (4)	<0.001
	2 (1)	59 (29.9)	88 (44.7)	36 (18.3)	12 (6.1)	
	1 (0.9)	23 (19.7)	43 (36.8)	38 (32.5)	12 (10.3)	
Religion	8 (7.5)	26 (24.3)	46 (43)	21 (19.6)	6 (5.6)	0.009
	1 (0.6)	56 (34.8)	68 (42.2)	30 (18.6)	6 (3.7)	
	3 (1.4)	67 (30.2)	90 (40.5)	43 (19.4)	19 (8.6)	

Table 4: Association of coping styles to relationship

Coping styles	Relationship					P value
	0 (%)	1 (%)	2 (%)	3 (%)	4 (%)	
Non-cope	23 (11)	145 (69)	35 (16.7)	7 (3.3)	0 (0)	0.001
	14 (6.3)	133 (60.2)	51 (23.1)	21 (9.5)	2 (0.9)	
	3 (5.1)	28 (47.5)	18 (30.5)	9 (15.3)	1 (1.7)	
Blame	20 (13.2)	110 (72.8)	17 (11.3)	4 (2.6)	0 (0)	<0.001
	18 (8.1)	134 (60.4)	55 (24.8)	14 (6.3)	1 (0.5)	
	2 (1.7)	62 (53)	32 (27.4)	19 (16.2)	2 (1.7)	
Humor	14 (8)	128 (72.7)	26 (14.8)	8 (4.5)	0 (0)	0.001
	21 (10.7)	109 (55.3)	48 (24.4)	19 (9.6)	0 (0)	
	5 (4.3)	69 (59)	30 (25.6)	10 (8.5)	3 (2.6)	

coping style Religion is also used often (19.4%). Coping in Relationship Domain also exhibited the same pattern as in that of Academics and Self Expectation Domains, with Non cope (15.3%), Blame (16.2%), and Humor (9.6%), predominant styles. Living conditions is found to be the most stressful for the population under study, and the students use all the three coping styles predominantly as in other domains, but in addition when faced with this type of stressor, the students resort to the coping style Substance use (60%). This trend continues with the next stress domain Health and Value Conflict, with Substance

use as a favored coping style used often (26.7%). Positive Coping Style is used significantly, but moderately only in the stress domain Academics (36%).

A gender wise comparison of the frequency in the usage of coping styles revealed that women use Positive coping and Support Cope (81% and 78%) more when compared with men students. Eighty-three percent of women students use Religion as a coping technique, while 84.7% resort to Non cope/negative coping in comparison with their male counterparts. However, 80% of men students used Substance use as a coping style compared with women.

DISCUSSION

The study setting being a residential medical school, among other stress domains, Living conditions were perceived to be most stressful. This stressor was dealt with by using largely maladaptive coping mechanisms like Non cope/negative coping, Blame, and Substance use. Non cope/negative coping comprises of behavioral disengagement, denial, and self distraction. This stressor is further coped with by Blaming self and resorting to Substance Use. Substance Use is also used significantly to cope with stress arising from Health issues and Value Conflicts.

Though coping behavior is largely understood as situation dependent, it should not be overlooked that there are personality and learning aspects to coping as well. The maladaptive coping adopted at a young age and later crystallized as a part of personality through continuous use can have far reaching effects. This concern as well as incidences of rising substance abuse in medical students has been brought out time and again by many studies conducted elsewhere in the world and in India.^[11-14] Employment of Substance use as a coping style is also determined by personality factors as well as peer pressure.

Stress in the realms of Academics Self expectations and Relationships are handled using largely Non cope/negative coping and Blame. The maladaptive coping patterns in Academics and Self Expectations emerge primarily because of feeling overwhelmed by the information load^[15] and of lack of time management coupled with workload and unrealistic expectation and/or confidence in one's own ability. Moreover, the academic atmosphere in medical colleges promotes competition among learners rather than co-operation,^[16] which adds to stress. This choice of coping strategies, when employed for a period of time, instead of mitigating stress, will tend to add it.

A young adult will naturally be in relationships both

Table 5: Association of coping styles to living conditions

Coping styles	Living conditions					P value
	0 (%)	1 (%)	2 (%)	3 (%)	4 (%)	
Non-cope	2 (1)	44 (21)	73 (34.8)	69 (32.9)	22 (10.5)	0.006
	0 (0)	34 (15.4)	66 (29.9)	85 (38.5)	36 (16.3)	
	0 (0)	8 (13.6)	10 (16.9)	24 (40.7)	17 (28.8)	
Blame	1 (0.7)	30 (19.9)	54 (35.8)	55 (36.4)	11 (7.3)	0.073
	1 (0.5)	39 (17.6)	64 (28.8)	75 (33.8)	43 (19.4)	
	0 (0)	17 (14.5)	31 (26.5)	48 (41)	21 (17.9)	
Humor	1 (0.6)	35 (19.9)	69 (39.2)	53 (30.1)	18 (10.2)	<0.001
	1 (0.5)	41 (20.8)	54 (27.4)	72 (36.5)	29 (14.7)	
	0 (0)	10 (8.5)	26 (22.2)	53 (45.3)	28 (23.9)	
Substance	2 (0.5)	81 (18.4)	139 (31.5)	161 (36.5)	58 (13.2)	0.003
	0 (0)	5 (14.7)	9 (26.5)	8 (23.5)	12 (35.3)	
	0 (0)	0 (0)	1 (6.7)	9 (60)	5 (33.3)	

Table 6: Association of coping styles to health and value conflict

Coping styles	Health and value conflict					P value
	0 (%)	1 (%)	2 (%)	3 (%)	4 (%)	
Non-cope	55 (26.2)	130 (61.9)	19 (9)	6 (2.9)	0 (0)	0.012
	38 (17.2)	151 (68.3)	27 (12.2)	4 (1.8)	1 (0.5)	
	5 (8.5)	39 (66.1)	10 (16.9)	4 (6.8)	1 (1.7)	
Blame	45 (29.8)	92 (60.9)	11 (7.3)	3 (2)	0 (0)	0.001
	43 (19.4)	149 (67.1)	25 (11.3)	4 (1.8)	1 (0.5)	
	10 (8.5)	79 (67.5)	20 (17.1)	7 (6)	1 (0.9)	
Humor	50 (28.4)	108 (61.4)	14 (8)	4 (2.3)	0 (0)	<0.001
	38 (19.3)	133 (67.5)	21 (10.7)	5 (2.5)	0 (0)	
	10 (8.5)	79 (67.5)	21 (17.9)	5 (4.3)	2 (1.7)	
Substance	93 (21.1)	293 (66.4)	46 (10.4)	8 (1.8)	1 (0.2)	<0.001
	4 (11.8)	22 (64.7)	6 (17.6)	2 (5.9)	0 (0)	
	1 (6.7)	5 (33.3)	4 (26.7)	4 (26.7)	1 (6.7)	

platonic and romantic where the opposite sex is concerned. With the same sexed group, the relationship would largely be defined by the individual's social skills, assertiveness skills, and confidence and self esteem. The relationships existing and newly forged are redefined and modified, which can be a cause of stress. However, Non cope/negative coping and Blame are not the sole coping styles employed to tackle stress. Stress in Academics Self Expectations and Relationships is handled using Humor too, which is a positive coping strategy. Humor may afford the opportunity for exploring cognitive alternatives in response to stressful situations and reducing the negative affective consequences of a real or perceived threat.^[17] This may actually enhance the efficacy of dealing with stress, generating alternatives for facing the stressors Academics and Self Expectations.

Apart from using the coping style Humor, stress at Academic front is handled through Positive Coping, which consists of appropriate appraisals and adequate planning. Different studies around the world have shown different ways of coping adopted by medical students when faced with academic stress.^[18-22] While

a recent study^[23] showed that in Korean students novelty-seeking and avoidant coping strategies are associated with academic stress, our study showed that in the face of academic stressor along with Non cope/negative Coping and Blame, students use Positive Cope and Humor too. This finding emphasizes cultural differences in coping styles and stress perception.

Where the stressor Self Expectations is concerned, Religion is also found to be used extensively as a coping strategy. It is not so surprising that to deal with setbacks in a domain that is very personal; the students use a coping strategy which is highly personal too. The relationship between this coping style and the stressor is not entirely state dependent but influenced by personal variables,^[24] and this explains why religion is used as a way to cope stress in a highly personal domain.

Gender-wise comparison throws up the alarming finding that Substance Use is used significantly by male students, while female students resort to Religion, Support Cope, and Positive Cope. It is also seen that female students use maladaptive coping style Non cope/negative coping more than male students. The usage of positive and negative coping styles more by females have been reported by studies. Women tend to seek more support, engage in problem solving, and still use negative coping styles like avoidant coping.^[25] Drinking to cope is very common among college students and is seen more in male students than in female students.^[26]

CONCLUSIONS

As brought forth time and again by different studies, the outcome of this study too emphasizes the need for stress management techniques in the medical school. There should be a psychologist exclusively for this group who could foster healthy interpersonal relationships with the student, and, thereby, be in a position to nurture their potentials, as well as see them through the stressful periods. There should also be frequent workshops on enhancing coping techniques. Since all the behavior and responses pass through the filter of personality, there should also be programs which help the student identify strengths and weakness in his/her personality, and make changes accordingly.

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