Research Article

Strategies used to combat stress among dental college students: an Indian outlook

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ABSTRACT

Background: Coping strategies when used effectively buffer the unwanted impacts of stressful situation on physical, emotional and mental wellbeing. The purpose of the present study was to address various stress coping strategies utilized by Indian dental school students.

Methods: A questionnaire based cross-sectional study was conducted among third and fourth year students of a dental school. Modified version of brief COPE Scale was used to assess various coping methods used by the students. A four point Likert scale was used to record the responses from the subjects. A total of 174 subjects participated in the study. Statistical analysis was conducted using chi-square test and multiple regression analysis.

Results: Of the participants, 39% (68) were males and 61% (106) were females. TV/music/internet/hobby was used by 98% of students to combat stress. Being optimistic in spite of what has happened was indicated by 99% of students as a measure for relieving. Males, older students and students who chose dentistry as their first career preference utilized more coping strategies ($p < 0.05$).

Conclusion: Majority of the students adopted positive coping strategies like planning, active coping, positive reframing, use of TV/music/internet/hobby, emotional and instrumental support etc. There is an urgent need for structured stress intervention programs in a country like India.

Keywords: Stress, Dental students, Coping mechanism, India, Institution

INTRODUCTION

Stress is defined as the pattern of specific and nonspecific responses an organism makes to stimulus events that disturb its equilibrium and tax or exceed its ability to cope.¹ Too much stress may prove to be harmful for general health and well-being. Students are also exposed to considerable anxiety and stress while attending educational institutions like schools and colleges.² Pressure of studies and other curricular activities makes

students vulnerable to undergo a lot of stress which may affect students' social, physical and mental health.³ As a result, this could negatively affect the learning ability and academic performance as well as goal achievement. Dental education has been proved to be one of the complex and stressful learning environment.⁴

Dental students need to acquire diverse proficiencies like theoretical knowledge, clinical competencies and interpersonal skills which are associated with high levels

of stress.^{5,6} The academic demands, manual dexterity and clinical management skill requirement expose dental students towards stresses which are quite dissimilar as compared to students in other academic fields. The outcome of this can be depression, anxiety, absenteeism, diminished work efficiency and burnout in the students.⁷ Scientific evidence shows the multifactorial nature of stress among students.⁸

Data from our previous study conducted on dental students revealed that academic performance, managing clinic/patient, fear of failing, lack of time between tests/clinics, criticism at work, lack of time for relaxation etc were the major stress causing factors.⁹ Coping strategies are specific efforts that individuals employ to manage stress.¹⁰ Coping plays a central role in adaptation to stressful life events. These are the specific efforts, both behavioral and psychological, that individuals employ to master, tolerate, reduce, or minimize stressful events.

Majority of the studies have been conducted on exploring the stressors among medical and dental under graduates but there is a dearth of literature regarding various coping strategies employed by dental students to combat stress and that too among Indian dental students. Hence, the present study was aimed to determine various strategies used by dental students to deal with stress and is an extension of our previous study.⁹

Such type of data may prove to be useful for designing programs that would enhance student psycho-social well-being and overall academic performance.

METHODS

The present cross sectional study was conducted among dental students after obtaining ethical clearance from the institutional ethics committee. The study subjects were completely informed about the purpose of the study and informed consent was obtained from every subject prior to the start of the study.

Study population consisted of 3rd and 4th (final) clinical year undergraduate students of a dental college in Punjab. A total of 200 students were initially enrolled in the study and the participation was voluntary. The response rate was 87%, therefore the final sample comprised of 174 subjects. A pilot survey was conducted on 10% of the study population to assess the feasibility of the study.

For the measurement a self-administered paper questionnaire was distributed to the students in their classes prior to lectures. An opportunity to ask questions were provided and clarifications were made. Brief COPE Scale (Coping Orientation to Problems Experienced), was used to find out the coping styles adopted by dental students to cope stress. Brief COPE is an abbreviated version of the original COPE inventory which has 60 items.¹¹

The brief COPE is used to assess a broad range of coping behaviors and consists of 30 items. Each item is rated on a 4-point Likert scale ranging from i have not been doing this at all (score 1) to i have been doing this a lot (score 4). The higher score indicates greater coping by the respondents. The items were scored to produce 15 dimensions, each reflecting the use of a coping strategy: active coping, planning, acceptance, denial, self-distraction, mental disengagement, use of substance, use of emotional support, use of instrumental support, behavioral disengagement, venting, positive reframing, humor, religion, and self-blame. Besides this, students were also asked to fill the Institutional stress-reducing factors questionnaire, which included 10 items, and the response to each was sought on Likert's 4- point scale ranked as 1 (not helpful) to 4 (very helpful).

The students made their choices according to the coping strategy most frequently used to manage the stressful situations experienced by them in dental institute. The questionnaire was pre-tested on 30 participants from the survey sample for content validation before it was administered.

Based on the opinions expressed by a panel of academicians, mean content validity ratio was calculated as 0.82. The reliability of the questionnaire was good (0.84). The students were given 30 minutes to complete the questionnaires. They were not allowed to discuss it amongst themselves during this time.

Statistical analysis

All the variables were entered into a computer and analyzed statistically. Results were statistically analyzed using SPSS package version 16.0 (SPSS, Chicago, IL, USA). The present study conducted descriptive statistical analysis. Number and percentages were used to compute results on categorical measurements. Multivariate analysis was performed using logistic regression to evaluate other variables that are independently associated with utilization of coping strategies. Statistical significance was set at $p < 0.05$.

RESULTS

A total of 174 subjects participated in the present study. The mean age of students was 20.49 years (SD=2.4). Out of 174 students, 39% (68) were males and 61% (106) were females. Female students outnumbered the male students in both the years (Figure 1). Majority of the students 62% (108) designated medicine as their career choice of over dentistry.

Table 2 depicts the various stress coping strategies utilized by students (3rd and 4th year) using a Brief COPE Scale. TV/music/internet/hobby was used by 98% of students to combat stress and out of this 41% utilized these a lot (Score 4 on Brief COPE Scale).

Nearly 90% of the students tried to get emotional support from their families/friends to reduce stress. Being optimistic inspite of what has happened was indicated by 99% of students as a measure for relieving. Changing

their outlook towards the problem and accepting the reality of what has happened was cited by 97% of the students as a strategy to reduce stress.

Table 1: Distribution of various strategies used by dental students to combat stress.

Coping Items	Brief COPE Scale (%)					
	1	2	3	4	Don't do	Usually do
I use TV/music/internet/hobby to relax and unwind	2	12	45	41	2	98
I engage in physical exercise/dancing	19	45	26	10	19	81
I go out for shopping	22	53	18	7	22	78
I sleep more than I usually do	18	44	24	14	18	82
I confront my source of stress and try to change it	7	29	43	21	7	93
I deal with problem step by step to make situation better	0	33	45	22	0	100
I ignore problem or try to forget problem	37	36	20	7	37	63
I refuse to believe that problem happened	62	24	9	5	62	38
I try to get emotional support from friends/family	12	37	33	18	12	88
I try to get comfort and understanding from someone	9	25	42	24	9	91
I admit that I can't deal with problem and quit trying	64	30	4	2	64	36
I give up attempt to achieve what I want	66	24	3	7	66	34
I get irritable and take it out on those around me	24	41	23	12	24	76
I let my emotions show	19	40	29	12	19	81
I talk about problem with someone to find solution	9	23	38	30	9	91
I try to get help and advice from people	5	43	31	21	5	95
I change my outlook about problem and put it in better perspective	3	30	45	21	4	97
I try to be optimistic inspite of what happened	1	26	46	27	1	99
I criticize myself for situation	20	46	24	10	20	80
I have been blaming myself for things that happened	24	48	18	10	24	76
I think of strategy to deal with problem	6	18	47	29	6	94
I think hard about steps to deal with problem	2	12	49	37	2	98
I joke with my friends about situation	28	35	22	15	28	72
I use humour to take edge off the problem	10	30	37	23	10	90
I accept the reality that problem happened	3	16	33	48	3	97
I try to focus on things that I can control to disengage from current situation	8	33	32	27	8	92
I meditate to enhance my spiritual life	38	37	10	15	38	62
I go to religious place for problems to be solved	7	34	31	28	7	93
I smoke/consume alcohol to relax and relieve stress	100	0	0	0	100	0
I take medicine to help me relax/sleep better	93	6	1	0	93	7

1 = I usually don't do this at all, 2 = I usually do this a little bit, 3 = I usually do this moderately, 4 = I usually do this a lot.

Taking edge off the problem by utilizing humour was done by 90% of subjects. Surprisingly, 38% of students were not engaging in any type of meditation to relive stress and enhance spiritual life (Score 1 on Brief Cope Scale). More than 90% of the students used to visit religious places to relieve stress. Almost all the students reported of not consuming alcohol or smoking in order to relax and relieve stress.

Table 2 depicts various institutional factors which were helpful in relieving stress among dental students. Vacations/ holidays and teacher's encouragement/ support/ care were reported by 99% of students which were helpful in managing stress. Moreover, almost 100% of students were of the opinions that help from senior colleagues and psychological reconditioning/counseling by teachers proved to be helpful in reducing stress.

Table 2: Institutional factors responsible for coping with stress.

Institutional Factors	Brief COPE Scale (%)					
	1 (%)	2 (%)	3 (%)	4 (%)	Not helpful (%)	Helpful
Vacations/holidays	1	15	37	47	1	99
Teacher's encouragement/support/care	1	5	35	59	1	99
Interaction with friends	0	6	58	36	0	100
Recreational activities/sports	3	30	50	17	3	97
Help of senior colleagues	0	29	52	19	0	100
Extracurricular programs in college	2	32	47	19	2	98
College outings	2	15	51	32	2	98
Relaxation at college canteen	17	52	25	6	17	83
Campus and ambience	10	47	37	6	10	90
Psychological reconditioning/counseling by teachers	0	18	47	35	0	100

1 = Not helpful; 2 = Average; 3 = Helpful; 4 = Most helpful.

Table 3: Mean stress coping scores and association with demographic variables.

Variable	Odds ratio (OR)	95% CI	P value
Age			
Less than 20	1	0.86-4.89	0.032*
More than 20	3.65		
Gender			
Male	2.54	0.70-28.31	0.004*
Female	1		
Year of study			
3 rd year	1	0.32-11.20	0.079
4 th year	4.56		
First preference of career			
Dentistry	3.23	0.19-5.07	0.018*
Medicine	1		

*p<0.05, statistically significant, Chi-square test

Figure 1: Distribution of subjects on the basis of gender and year of study.

Multiple regression analysis was performed to assess the effect of various independent variables on the utilization of coping strategies. Odds ratios were also generated (Table 3). The odds of utilizing strategies were 3.65 times greater in subjects who were more than 20 years of age as compared to those who were younger. Chances of

strategy utilization were 2.54 times more in males as compared to females. Also, odds of strategy utilization were 3.23 times greater for subjects who chose dentistry as their first career preference than those who chose medicine.

DISCUSSION

Dental education has shown to be very stressful for students as reported by large number of studies. The findings are consistent across different countries, universities and curriculums.^{12,13} There are various stress coping factors which add to overall stress of students like clinical learning procedures, completion of specified number of patient procedures coupled with attending lectures and studying for examinations.

Various modalities to reduce perceived stress among dental students have been reported in previous literature. They include student-centered academic policies, non-quantitative evaluation of training, feedback and advisory systems for students and overall improving the learning environment.¹⁴ Coping moderates the impact of stress,

rather than directly reducing stress levels. Therefore coping mechanisms are vital for individuals who perceive stress.

In the present study, multiple coping strategies were adopted by the students of both the years to handle stressful situations. Most of them were positive coping strategies and included watching TV, listening to music, pursuing hobbies etc. Music and TV are forms of entertainment which are believed to nourish and soothe the mind, thus enabling the students to relax. According to a study, listening to relaxing music helped to reduce the heart rate and anxiety score.¹⁵

Besides this, other active stress coping strategies adopted by students were being positive reframing (making the best of situation by growing from it or seeing it in a more positive light), active coping (taking action to remove the stressor) and acceptance (accepting the fact that stressful event has occurred and is real). Similar type of strategies have also been advised by some other authors.¹⁶

It has been reported that individuals who use more social support from others like, friends, parents etc. perceive less stress.¹⁷ Nearly 90% of the students were utilizing social support to reduce stress in the present study. Few students also reported using instrumental, emotional support and humor as stress coping techniques. Emotional support and humor are cited as preferred strategies to combat stress situations in another study.¹⁸ Going to religious places to relieve stress was also a popular stress coping strategy adopted by students in the study. This result is in congruence with the study findings of Ahmad MS et al. who reported praying or spiritual activities as a popular stress reduction technique.¹⁹

It was encouraging to know that negative coping strategies like, alcohol, smoking and medicines were the least commonly used strategies. These findings are similar to an earlier study.²⁰ This may be related to students' religious and cultural beliefs which consider these things culturally unacceptable behavior. Although under reporting cannot be ruled out in spite of assurance of anonymity, and confidentiality of the responses by the investigators, few students were reported to use negative coping strategies like denial and behavioral disengagement.

The study found that the major institutional stress relieving factors as perceived by the students were interaction with friends, recreational activities, sports and teacher encouragement/support and counseling. Similar findings of social and psychological support, used as preferred mode of alleviating stress is reported by another study.²¹ Moreover, the importance of stress management programs for example recruiting a clinical psychologist for dental students has been emphasized in another study.²²

The findings of the study revealed that older students had more chances of utilization of coping strategies as compared to younger ones ($p < 0.05$). This could be due to the reason that as people mature, they are better able to adopt a range of behavioral, cognitive and emotional strategies to cope with stressful life events.²³ Moreover, chances for using a strategy to cope stress were more in male students. This is contrary to some other study reports.¹⁰ Students who chose dentistry as their first career preference were more inclined towards using a stress coping strategy as compared to students who chose medicine. This finding emphasizes the need for vocational orientation programs aimed at motivating students to choose dentistry which can be extended to help develop motivation for their career among dental students both before and after their admission.

The present study had few limitations as well. The cross-sectional design of the study and use of convenient sampling may limit non-biased representation of study findings. Moreover, the present study was conducted in a specific college in India and that too among third and final year students, therefore the generalizability is open to question. Although there was assurance of confidentiality, students may have exaggerated or underreported coping strategies because of fear of being singled out. Considering all these limitations, the results of the study should be interpreted with caution.

CONCLUSION

Majority of the students adopted positive coping strategies like planning, active coping, positive reframing, use of TV/ music/ internet/ hobby, emotional and instrumental support. Only handful students reported negative strategies like taking medicines to sleep better, smoking and alcohol consumption as strategies to relieve stress. Older and male students had more chances of utilizing stress coping strategies as compared to younger and female students respectively. Future studies should focus on building empirical evidence for effectiveness of structured stress intervention programs in Indian settings as there are no Indian studies in this direction.

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