Original Article

ASSESSING STRESS COPING METHODS AMONG MEDICAL STUDENTS IN DISTRICT PESHAWAR PAKISTAN

Naveeda Sarwar[1], Saima Abid[2], Ghulam Sarwar Khan[3], Bilquis Hassan[4], Baber Awan[5], Adnan Sarwar[6]

[1]Medical Social Worker, Psychologist, Community Medicine Dept., Pak International Medical College, Peshawar.
[2]Associate Professor, Dept. Community Medicine, Pak International Medical College, Peshawar.
[3]Professor, Dept. Community Medicine, Pak International Medical College, Peshawar.
[4]Senior Lecturer, Dept. Community Medicine, Pak International Medical College, Peshawar.
[5]Demonstrator, Dept. Community Medicine, Pak International Medical College, Peshawar.
[6]Demonstrator, Dept. Pathology, Pak International Medical College, Peshawar.
Correspondence: Naveeda Sarwar, Contact # 0333 9173592,
Email: naveedasarwar6@gmail.com

Abstract

Background: Stress coping methods are used by the individuals to overcome daily stresses. It is important to maintain stress within limits for normal functioning and productivity of a human being. Medical students come across many stress factors during their medical training. Stress coping is divided into Adaptive and Non-adaptive coping, students using adaptive coping strategies (ACS) are considered to have positive coping methods and results in long term constructive outcomes i.e. improved self-esteem, stronger social bonds and wisdom, while students using non-adaptive coping strategies are at risk of mental health issues. Our objective was to evaluate stress coping methods among medical students of public and private medical colleges of district Peshawar.
Methods: This study was a descriptive cross-sectional study. Data was collected using convenient sampling technique from 200 medical students of both Public and private sector of district Peshawar. Equal numbers of boys and girls were selected from age groups of 18-25 years. Demographic variable along with methods to cope stress were collected using validated pre-tested questionnaire called "Brief cope scale (BCS) of Urdu version by Akhtar (2005)". Standard cut off value of 56 was used to differentiate between students having adaptive or mal-adaptive coping styles. Data collected was analyzed using SPSS.
Results: Students of public medical college scored M=71.78 with SD=8.955 while students of private medical colleges scored M=69.20 with SD 10.07.
Conclusion: The findings of the study suggest that undergraduate students in medical collages have non-adaptive coping methods rather than adaptive ones. Female students used more adaptive coping skills than male students. Students in public sector had better coping skills than students of private medical colleges.
Keywords: Public, private, cross sectional study, coping, medical students

Introduction

Stress occurs when an individual is confronted with a situation that is perceived as overwhelming and with which they cannot cope (1). Stress coping methods are the mental and behavioral components which are utilized by the individual to overcome daily strains and difficulties. Coping is divided into Adaptive and Non-adaptive stress management strategies (2). Stress if controlled by Adaptive coping methods results in long term high-quality outcomes like that of improved self-awareness, self-esteem, more potent social bonds and development of the Wisdom. Medical students suffer from various levels of pressures (excessive homework, unclear assignments (3) (4), time management, uncomfortable classrooms, weekly tests and assignments, pressure to get good scores (4) social and financial issues) (3). In Pakistan, high parental expectations, sleep problems and future uncertainties (5) (6); (7) (8) were additional factors which can affect their health and academic performance (9). Ethnicity, culture and socio-economic values affect the coping methods. Students who use Adaptive coping methods have better coping skills, while those who use Non-adaptive coping methods, are at risk of mental health problems (10). Adaptive coping are reactions which targets the stress factor itself, while Non-adaptive coping strategies includes activities or mental states that keep one away from solving stressful problem (2) adoptive coping includes (11) taking "action" to manage the stress; "planning", to confront the stress; "acceptance", and "positive reframing", by growing from it or seeing it in a more positive light. non-adoptive or Avoidant strategies include "denial"; "disengagement" or giving up the attempt to attain the goals; "venting", an enhanced consciousness of one's stressful condition and tendency to express those feelings; and "humor", making jokes about the stress factor (11). Based on the analysis of the coping methods used by the students prediction can be made about future success. Students who take action and deal directly with a problem would most probably resist future burnout (12).

Studies about coping among medical students were not found in the literature except few in the recent past (13) (14). Purpose of the study was to find out the various coping methods and their association with demographic factors i.e. age, gender, and socio-economic status, among medical students of Peshawar. Local evidence generated can be used to identify and target non- adoptive methods.

Methodology

This cross-sectional study was conducted from June to September 2017. Sample was taken from four (two public sector and two private) medical colleges from district Peshawar after approval from the ethical committee. 200 medical students (100 male and 100 female) were selected from medical colleges through purposive convenient sampling technique. From each college 50 respondents with age range between18-25 year were selected. The Carvers brief cope scale modified by Akhtar (2005) was used for data collection. The scale comprised of 28 items with four point Likert scale (1= I have not been doing this at all , 2= I have been doing this a little bit, 3= I have been doing this most often and, 4= I have been doing this all the time). The cut off value for the coping scale was 56. Score greater than 56 were taken as adoptive coping while below as non -adoptive. These 28 items encompasses 14 subscales (active coping, planning, acceptance, denial, self-distraction, use of substance, use of emotional support, use of instrumental support, behavioral disengagement, venting, positive reframing, humor, religion, and self-blame). These subscales were further summed up into two broader categories i.e. Adaptive and non-adoptive. Demographic information including age, gender, father's income and colleges was also collected. Data collected was analyzed by (SPSS.V.22). Written informed consent was obtained from the participants. Students having exams or absent were excluded from the study.

Results

A total 200 students participated in the study, demographic features are discussed above in (Tab: 1). 57.4% Male and 40.7% female were included in the survey. 14.2% students were in age range of 16-20 years, 83.3% were in age group of 21-25 while 0.5% students were in age range of 26-30. 51% students from Public medical colleges while 47% students from Private medical colleges participated in the study. Out of the total, 27.5% belong to socio-economic status ? 50000, 27.5% belong to the income group between 51000-75000 while 45% belong to income group >75000

Table 1: Demographic profile (N=200)

Demographic Variables	**Categories**	*N*	*%*
Gender	Male	117	57.4%
	Female	83	40.7%
Age	16-20	29	14.2%
	21-25	170	83.3%
	26-30	1	0.5%
Colleges	Total students from Public medical colleges	104	51%
	Total students from Private medical colleges	96	47%
Father income	..	55	27.5%
	51000-75000	55	27.5%
	>75000	90	45%

Gender-wise scores of Brief Cope Scale is given in table 2. Mean score of male was 70.06±11.0 while mean score of female was 71.22 ± 6.9.

Table 2: Gender-wise scores of BCS (N=200)

Gender	**N**	**Mean %**	**SD**
Male	117	70.06	11.0
Female	83	71.22	6.9
Total	200	70.55	9.5

On the basis of medical colleges scores of Brief Cope scale is given in fig 1. 71.78% was scored by Public Medical College while 69.2% was scored by the Private Medical College.

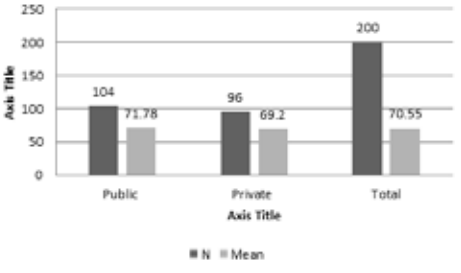

Figure 1: Scores of BCS on the basis of type of medical colleges (N=200)

Mean scores of the main categories of Cope are given in tab 3. Adaptive coping was seen in 3.8% of the students while 4.1% Non-adaptive coping was observed among the students.

Table 3: Mean (Percentage) Scores Of The Main Categories Of Cope

S. No	**Category**	**Type of Coping methods**	**Mean (%)**
1	Adaptive coping	Problem-focused coping (Active coping, Emotional support, Instrumental support, Planning)	16.3 (3.8%)
		Positive coping (Emotional support, Positive reframing, Humor, Acceptance)	17.2 (3.2%)
2	Non-Adaptive coping	Active avoidance coping (Self-distraction, Substance use, Behavioral disengagement, Venting, Self-blame)	27.7 (4.1%)
		Religious/Denial coping (Denial, Religious)	9.1(2.2%)

Self-Distraction: Out of the total 90(45.0%) students used a little bit, 38(19.0%) used moderate and 21(10.5%) used a lot, cumulative of 149 (74.5%) used to turn to work or other activities to take their mind off the stress factor. 79(39.5%) utilized a little bit, 57 (28.5%) utilized medium, 34 (17.0%) utilized something such as going to the movies, watching TV, reading, daydreaming, sleeping, shopping etc. to cope with their stress.

Active Coping: 63(31.5%) used a little bit, 20 (10.0%) used moderate while 45 (22.5%) used a lot to concentrate their efforts on doing something about the situation they are in. 61(30.5%) tried a little bit, 63 (31.5%) tried moderately, while 24(12.0%) tried a lot to take action to make the situation better.

Denial: Out of the total, 76(38.0%) used denial a little bit, 56 (28.0%)

used it moderately while 35(17.5%) used it a lot, that they have been saying to themselves that "this isn't real".
75(37.5%) used this technique a little bit, 52(26.0%) moderately while 47(23.5%) a lot that they have been refusing to believe that it had happened.
Substance Use 16(8.0%) utilized Substance Use i.e. Alcohol or other drugs to made themselves feel better a little bit, 13(6.5%) moderately, while 150 (75.0%) utilized this a lot. 19(9.5%) used this technique a little bit 24(12.0%) used it moderately, while 141 (70.5%) used a lot that they used Alcohol or other drugs to help get through it.
Behavioral disengagement 38(19.0%) used Behavioral disengagement a little bit 72(36.0%) moderately while 66(33.0%) used it a lot that they gave up trying to deal with it.
33(16.5%) used this technique a little bit, 81(40.5%) used it moderately, while 63(31.5%) used it a lot that they had given up the attempt to cope.
Emotional support: 51(25.5%) students sometimes, 80(40.0%) moderately while 47(23.5%) a lot have been getting emotional support from others. 92(46.0%) students sometimes, 35(17.5%) moderately while 23(11.5%) a lot had been getting comfort and understanding from someone.
Venting: 44(22.0%) a little bit, 89(44.5%) moderately while 23(11.5%) a lot, had been saying things to let their unpleasant feelings escape. 96(48.0%) a little bit 40(20.0%) moderately, 35(17.5) a lot had been expressing their negative feelings.
Positive reframing: 51(25.5) a little bit, 77(38.5%) moderately, 30(15.0%) a lot had been trying to see it in a different light to make it seem more positive. 95(47.5%) a little bit 37(18.5%) moderately while 33(16.5%) a lot had been looking for something good in what is happening.
Self-blame: 41(20.5%) a little bit, 90(45.0%) moderately while 32(16.0%) a lot cope by criticizing themselves. (16.5%) a little bit, 63(31.5%) moderately while 74(37.0%) a lot cope by blaming themselves for things that happened.
Planning: 97(48.5%) a little bit, 37(18.5%) moderately while 19(9.5%) a lot cope by trying to come up with the strategy about what to do. 96(48.5%) students a little bit 46(23.0%) moderately while 16(18.0%) a lot had been thinking hard about what steps to take.
Acceptance: 57(28.5%) a little bit, 33(16.5%) moderately while 17(8.5%) a lot said that they had been learning to live with It. 54(27.0%) a little bit, 88(44.0) moderately while 25(12.5%) a lot of coping by accepting the reality of the fact that it had happened.
Instrumental support: 52(26.0%) a little bit, 82(41.0%) moderately while 32(16.0%) a lot had been getting help and advice from other people. 95(47.5%) a little bit, 38(19.0%) moderately while 27(13.5%) a lot had been trying to get advice or help from other people about what to do.
Humor: A few , 29(14.5%) a little bit, 69(34.5%) moderately while 80(40.0%) a lot made fun of the situation. 70(35.0%) a little bit 50(25.0%) medium 56 (28.0%) a lot had been making jokes about it.
Religion: It was 86(43.0%) a little bit, 28(14.0%) moderately, while 21(10.5%) a lot had been praying and meditating. 90(45.0%) a little bit, 36(18.0%) moderately while 21(10.5%) a lot had tried to find relief in religion or spiritual beliefs.

Discussion

The current research was aimed to evaluate stress coping methods among medical students of district Peshawar in public and private medical colleges. The current study showed coping methods among medical students with the mean scores of Public medical college M 71.78 (8.95) and Private medical colleges M=69.2 (10.07). Both genders used moderate coping behaviors. On the whole, female M=71.22 ±6.916 had slightly better coping than male M=70.06±11.086, while past studies documented that stress coping declines with decreasing social status (9) and females used non-adaptive coping strategies than males (9). Overall students of public medical colleges have slightly better coping methods (M=71.78 & SD=8.955) compared to private medical colleges (M=69.20 & SD 10.07).
In current study, Mean (SD) of various methods of coping stress in descending order were, "Self-blame 5.55(1.64), Substance use 5.21(1.34), Self-distraction 4.62 (1.50), Behavioral disengagement 4.39(1.26), Humor 4.39(1.24), Emotional support 3.86(1.14), instrumental support 3.69(1.15), venting 3.67(1.04), denial 3.76(1.17), Positive reframing 3.65(1.16), active coping 3.33(1.43), planning 3.23(1.09), Acceptance 3.19(1.18) and Religion 3.10 (1.19)". Surprisingly non-adoptive coping methods were used mostly by medical students to cope with stress while adaptive coping marks the less utilized techniques. A major drift was seen in the current study when compared with a study conducted in Pakistan in 2004 (15) sports, music, hanging out with friends, sleeping, or going into isolation were used for coping. In another study conducted in 2015, medical students sample was collected from all over Pakistan (16) Praying 52.6%, sleeping 43.8% and listening to music 39.1% were found to be three most common methods to relieve stress. Similarly, in a study conducted in Kashmir India (17) during August 2018, adaptive coping methods were used by the medical students in the order of the frequency as Acceptance 74.4, Emotional support from family/friends 74.4, Watching a movie 58.5, Listening to music/dancing 62.5, Positive reframing 54.0, Traveling 48.3, Going to place of worship 46.0, Playing sports/games/physical exercises 45.5, Professional Support 40.9, Meditation 34.7, Tobacco/alcohol consumption 4.0. In a similar study conducted in Malaysian medical students (9), unlike our study, the students used active coping strategies such as religious coping most, with score (SD) of 6.2 (1.6); active coping, 6.2 (1.3); positive reframing, 6.1 (1.4); and acceptance, 6.0 (1.3); more than avoidant strategies such as denial, 4.3 (1.5); self-blame, 4.6 (1.6); and alcohol or substance use, 2.7 (1.4).
Surprisingly in our study students used Religious coping 3.10 (1.19) very low as compared to Malaysian 6.2 (1.6); Chinese 5.2 (1.6); Indian 5.6 (1.7) and those of other religious persuasions 5.2 (1.7).
Similar to our study medical students used alcohol, tobacco, and drugs as common coping strategies in the United Kingdom (18) (19).
Students in Nepal (20) adopted active coping strategies (positive reframing, planning, acceptance, and active coping) rather than avoidant strategies (denial, alcohol/drug use, and behavioral disengagement).
Association between coping methods and independent variable was calculated, considering Problem-focused coping, Positive coping as adoptive coping and Active avoidance coping, Religious and Denial coping as non-adaptive, through correlation. Problem-focused coping (Active coping, Emotional support, Instrumental support, Planning) was found significant (P<.05) with Age, Father's Income and type of medical college. Positive coping (Emotional support, Positive reframing, Humor, Acceptance) was found significant with the father's income and type of medical college but was not significant with Age. Active avoidance coping (Self-distraction, Substance use, Behavioral disengagement, Venting, Self-blame) was found significant with the Father's Income and type of medical college (P<0.01) while was not found significant with age (P>0.01). Religious and Denial coping was found significant with the Father's Income while was not significant with Age and Type of Medical Colleges.
Our study was purely quantitative, it would have been more useful if other possible coping strategies were explored qualitatively. Furthermore, in the current study cumulative frequencies were calculated overall from each medical college, could have been more extensive if frequencies were calculated per year of the medical college.

Conclusion

The findings of the study suggest that undergraduate students in medical collages are utilizing non-adaptive coping methods i.e. self-blame, substance use etc. more rather than adaptive ones. Female students use more coping methods than male students. Similarly students in public sector had advance coping methods than students of Private medical colleges.

References

1. Agolla JE OH. An assessment of academic stress among undergraduate students: The case of University of Botswana.]. Educ Res. Rev. 2009;: p. ;4(2):63-70. [Ref list.
2. HW. K. Vigilance and cognitive avoidance as concepts in coping research. In: Krohne HW, editor. Attention and avoidance: Strategies in coping with aversiveness.. Seattle (WA): Hogrefe & Huber Publishers;. 1993. ;: p. pp. 19-50.
3. Kohn JP FG. An academic stress scale: Identification and rated importance of academic stressors.. Psychol Rep.. 1986;: p. 59(2):415-426.
4. Misra R MM. College students' academic stress and its relation to their anxiety, time management, and leisure satisfaction.. Am J Health Stud.. 2000;: p. 16(1):41-51.

5. Shah M HSMSSC. Perceived stress, sources and severity of stress among medical undergraduates in a Pakistani medical school... BMC Med Educ.. 2010;: p. 10:2.
6. Henning M KCHSZYDI. The quality of life of medical students studying in New Zealand: a comparison with nonmedical students and a general population reference group.. Teach Learn Med.. 2012;: p. ;24(4):334-40.
7. Moffat KJ MARSMJ. First year medical student stress and coping in a problem-based learning medical curriculum. Med Educ. 2004;: p. 38(5):482-91.
8. Ripp J FRBMRDRLKD. Prevalence of resident burnout at the start of training.. Teach Learn Med.. 2010;: p. ;22(3):172-5.
9. Sami Abdo Radman Al-Dubai 1RAANMAAaKGR. Stress and Coping Strategies of Students in a Medical Faculty in Malaysia. Malays J Med Sci.. 2011 Jul-Sep; ;: p. 18(3): 57-64.
10. Stewart SM BCLTMILPWC. Predicting stress in first year medical students: a longitudinal study. Med Educ. 1997;: p. 31(3):163-8..
11. CS. a. You want to measure coping but your protocol's too long: Consider the brief COPE.. Int J Behav Med. 1997;: p. 4(1):92-100.
12. Ma?gorzata Tartas MWWBMMWaAZR. The coping strategies during medical education predict style of success in medical career: a 10-year longitudinal study. BMC Med Educ. 2016; ;: p. 16: 186.
13. Vaz RF MEAS. A preliminary study of stress levels among first year medical students at the University of Zimbabwe.. Centr Afr J Med.. 1998;: p. 44(9):214-219.
14. Xiang H WZSLYSGHYP. Cigarette smoking among medical college students in Wuhan, People's Republic of China.. Prev Med.. 2000;: p. 29(3):210-215.
15. Shaikh BT KAKMKHNKKNKS. Students, stress and coping strategies: a case of Pakistani medical school. Educ Health (Abingdon). 2004 Nov; 17(3)(346-53).
16. Haider Ghazanfar SH. Stressors and coping strategies for stress among Pakistani medical students. Rawal Med J. 2015 June ; 40(2)(228-32.).
17. Rifat Jan ARMR. STRESS AND COPING STRATEGIES AMONG MEDICAL UNDERGRADUATES OF KASHMIR VALLEY, INDIA. INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH. 2018 January ; Vol 7 (No 8).
18. Guthrie EA BDSCHJCFTB. Embarking upon a medical career: psychological morbidity in first year medical students. Med Educ. 1995 Sep; 29(5)(337-41).
19. Ashton CH KF. Personality, lifestyles, alcohol and drug consumption in a sample of British medical students. Med Educ. 1995 May; 29(3)(187-92).
20. Sreeramareddy CT SPBVMCRBMR. Psychological morbidity, sources of stress and coping strategies among undergraduate medical students of Nepal. BMC Med Educ. 2007 Aug; 2(7():26).