

LEARNING/TEACHING

Students, Stress and Coping Strategies: A Case of Pakistani Medical School

BABAR T. SHAIKH, ARSALAN KAHLOON, MUHAMMAD KAZMI,
HAMZA KHALID, KIRAN NAWAZ, NADIA A. KHAN &
SAADIYA KHAN

*Community Health Sciences Department, Aga Khan University (AKU),
Karachi, Pakistan*

ABSTRACT Objective: *Assess the perception of stress amongst medical students and their coping strategies.*

Methodology/Study design: *A cross sectional study using a semi-structured self administered questionnaire was carried out over four weeks, using a small sample of students of all categories and classes of a medical college.*

Results: *A total of 264 students out of 300 (88%) filled in the questionnaire. Inability to cope, helplessness, increased psychological pressure, mental tension and too much workload are 'stress factors' for students. A considerable majority (> 90%) think that they have been stressed at one time or another. Ninety-four per cent of males have experienced stress. The senior students of the fourth and final year feel more stressed (95% and 98% respectively). Low moods, inability to concentrate, loss of temper are most common symptoms. Females report more symptoms. Academics and exams are the most powerful stressors. Sports, music, hanging out with friends, sleeping or going into isolation are various coping mechanisms. Stress can affect the academic performance. If needed, students prefer to talk to a peer. They demand more recreational activities on campus, revised schedule of academics and exams, better counselling facilities and improvement in student-teacher relationship.*

Conclusion: *The prevalence of perceived stress seems to be high among medical students, which tends to affect not only their academic performances but also all aspects of health. Review of academics and exam schedules, more leisure time activities, better interaction with the faculty and proper guidance, advisory services and peer counselling at the campus could do a lot to reduce the stress.*

KEYWORDS *Stress, students, medical college, coping strategies.*

Author for correspondence: Dr. Babar T. Shaikh, Senior Instructor, Health Systems Division, Department of Community Health Sciences, Aga Khan University, Stadium Road, PO Box 3500, Karachi, Pakistan. Tel: + 92 21 4930051 Ext: 4899, 4811; Direct: +92 21 48594899. Fax: +92 21 4934294 4932095. E-mail: babar.shaikh@aku.edu

Introduction

Medical education is inherently stressful and demanding. Overwhelming burden of information leaves a minimal opportunity to relax and recreate and sometimes leads to serious sleep deprivation (Lee & Graham, 2001; Firth-Cozens, 2001). It constitutes various stressors which may cause impaired judgment, reduced concentration, loss of self-esteem, increased anxiety and depression (Gisele, 2002). Forces from the outside world impinging on the individual could be counted as 'stress'. Stress can be defined as "a state of mental or emotional strain or suspense" and also as "a number of normal reactions of the body (mental, emotional, and physiological) designed for self-preservation" (Princeton University, 2001). Despite its diffuse perception, most of the well-known definitions emphasize stress as "any factor that threatens the health of an individual or has an adverse effect on the functioning of the body" (Oxford Medical Publications, 1985). As such, stress is a normal, desirable, and beneficial part of our lives that can help one learn and grow. Most people are more active, invigorated, creative, and productive because of stress. Conversely, stress can cause significant problems. Prolonged, uninterrupted, unexpected and unmanageable stress is damaging. Coping with the help of drugs, analgesics, alcohol, smoking and eating actually are counterproductive and may worsen the stress. Stress can be best managed by regular exercise, meditation or other relaxation techniques, structured time outs and learning new coping strategies to create predictability in our lives (Carter *et al.*, 2003). The management of stress depends mainly on the willingness of a person to make the changes necessary for a healthy lifestyle.

A student's life is subjected to different kinds of stressors, such as the pressure of academics with an obligation of success, uncertain future and difficulties envisaged for integration into the system. These students face social, emotional and physical and family problems which may affect their learning ability and academic performance (Fish & Nies, 1996; Chew-Graham, Rogers & Yassin, 2003). Some of them find it hard to cope with the stress and lag behind, while others see the pressure as challenge to work harder. Medical students particularly perceive themselves more likely to become ill than others (Raj, Simpson, Hopman & Singer, 2000). Stress can lead to disruptions in both physical and mental health. Stress reduction and adopting a healthier life style have been major concerns of the students (Mundt, 1996). Students revert to different coping strategies, harmful as well as constructive. There have been very few studies done so far to assess the perceptions of stress among students, and still fewer are those done on medical student population (Vaz *et al.*, 1998; Stewart *et al.*, 1999; Xiang, 2000). However, this study not only explores the different perceptions of 'stress' amongst the medical students community but also looks into the coping strategies adopted to deal with the problem.

Methodology and Subjects

A cross sectional study was conducted on the undergraduate medical students of all five years in a medical college in Karachi to get a snapshot view of the prevalence of stress in medical students, and to assess the different perceptions, reasons and coping methods of stress. A total of 264 students participated in the study. The study sample was stratified according to sex, residence (day-scholar/hostellites), year of study and status of financial assistance from the college. After an in-depth literature review, a semi-structured questionnaire was designed as a tool for data collection. This was pilot tested with a sample of 20 students, modified and finally administered by the researchers for final survey. Confidentiality and anonymity were ensured. Data collection took one week.

Data was entered and analyzed with SPSS 10 and Epi Calc 2000. As most of the questions were of multiple choice type, chi square and *p* values have only been quoted where applicable. Qualitative data was analyzed separately.

Results

The response rate was 88% (264 out of 300), out of which 138 (52.3%) were males, and 126 (47.7%) were females. Mean age of respondents was 21 years with a range of 17–25 years. There were 136 day scholars (51.5%), while 128 (48.5%) were hostellites. Those on college's financial assistance were 41.3%.

A large majority of students perceive stress as mental tension, external pressure affecting work, psychological burden, helplessness, inability to cope, increased workload and high expectations. For some, it is a break in the normal routine, lack of concentration, hopelessness, reaction to unpleasant environment, loss of interest, inferiority complex, depression etc. Few express it as an excess of functioning of one's physical, mental or spiritual being leading to partial or complete exhaustion of that individual. More than 90% of the students maintained that they have had episodes of stress while in college at one time or more. This includes 94.1% males and 91.1% females ($\chi^2=0.85$, $p=0.36$, CI=95%). Among the day scholars, 93.2% feel stressed while 92.1% of the hostellites are stressed in a way ($\chi^2=0.14$, $p=0.71$, CI=95%). Those on financial assistance (90.7%) have felt stressed as compared to 93.8% of students who are not on financial assistance ($\chi^2=0.65$, $p=0.42$, CI=95%).

Females felt more fatigue, headaches and short-temper than males. Day-scholars are more fatigued (60%) than hostellites (40%) ($\chi^2=11.03$, $p < 0.001$, CI=95%). Those on financial assistance reported more frequent headache (63%) as compared to non-assisted students (37%) ($\chi^2=17.68$, $p < 0.001$, CI=95%). The residence does not show any remarkable difference in citation of symptoms of stress (Table 1).

The most common reasons quoted are listed in Table 2. Financial problems and travelling between campus and home are other reasons quoted. Students

Table 1. Symptoms of stress and % of respondents ($n=264$)

Symptoms	% of students
Low moods	82
Inability to concentrate	71
Short temper	66
Change in sleep pattern	61
Loneliness	58
Fatigue	55
Difficulty in making decisions	50
Difficulty in communicating with people	49

Table 2. Various reasons for stress quoted by male and female respondents (%)

Reasons for stress	Males ($n=138$)	Females ($n=126$)	Mean
Exams	71.0	84.0	77.5
Academics	59.0	67.0	63.0
Relationship problems	22.0	31.0	26.5
Family problems	21.0	31.0	26.0
Homesickness	22.0	26.0	24.0

who did not know the reason for their stress comprise 6.8%. For 41.4% of the hostellites, homesickness was a reason for stress ($\chi^2 = 8.69$, $p = 0.003$, $CI = 95\%$).

Various coping strategies practised by the medical students are listed in Tables 3 and 4. Offering prayers, meditation, visiting relatives, changing eating habits, watching movies and online chatting were also mentioned.

Amongst the total sample population, 76% were satisfied with their coping strategies. Males were more content (78%) with their coping mechanisms as compared to females (73%). Day-scholars were more satisfied with their coping mechanisms (78%) as compared to the hostellites (73%) ($\chi^2 = 0.99$, $p = 0.32$, $CI = 95\%$).

Although 80.7% of the students preferred solitude at times (males 82% and females 80%; $\chi^2 = 0.13$, $p = 0.72$, $CI = 95\%$) but in a stressed situation, 71.6% would like to talk to somebody (male: 68%, female: 76%; $\chi^2 = 2.13$, $p = 0.144$, $CI = 95\%$). The 1st and 2nd year students (80%) showed eagerness to talk to somebody and but in the 4th and final year only 67% showed the desire. Talking to a peer would be the approach for a majority (46.2%), where males have greater tendency to do so (70%) as compared to females (57%) ($\chi^2 = 4.94$, $p = 0.03$, $CI = 95\%$). Hostellites have a higher preference for a friend to consult (67%) as compared to those residing with the families (60%) ($\chi^2 = 1.35$, $p = 0.24$, $CI = 95\%$). For 22.7% who will consult a family member, girls show more

Table 3. Coping strategies and % of males and females respondents

Coping strategies	Males %	Females %	Mean
Spending time with friends	66.7	64.3	65.5
Sleep	58.0	68.3	63.15
Music	60.9	55.6	58.25
Sports	55.8	36.5	46.15
Isolation	47.8	38.1	42.95
Study	29.7	45.2	37.45

Table 4. Coping strategies and % of hostellites and day-scholars

Coping mechanism	Day scholars	Hostellites
Spend time with friends	66.9	64.8
Isolation	36.0	50.0
Sports	50.7	42.2
Smoking	4.4	8.6

inclination to do so (39%) as compared to boys (21%) ($\chi^2 = 10.11$, $p = 0.001$, CI = 95%). Hostellites consult their family less (25%) as compared to those living at their homes (35%) ($\chi^2 = 3.13$, $p = 0.07$, CI = 95%). Those who don't know whom to talk to comprise 27.3% and less than 1% would consult a psychiatrist or the students' advisor.

Discussion

The young student population has always been vulnerable to stressful life conditions especially in pursuit of higher professional education in a highly competitive environment (World Health Organization, 1994; Saipanis, 2003). A large majority perceives itself stressed in the college at one time or another, but boys show more inclination towards stress. Residence or the factor of financial assistance do not have any major effect, although it was hypothesized that these factors might contribute towards the level of stress.

The frequency of stress seems considerable with little difference between males and females. It was interesting to note that day scholars appear more stressed than the hostellites. This has been attributed primarily to the commuting between college and their residences. A feeling of inadequacy in fulfilling family commitments can also be attributed to the higher stress levels in day scholars. A third factor could be lack of control over management of their own expenses.

The symptoms of the bouts of stress, low moods, inability to concentrate, short temper, changed sleep patterns and loneliness were more frequently cited as compared to others such as fatigue, headaches and stomachaches. While cross tabulations of the results in different categories of students considering sex, year of study and lieu of residence, no considerable variation in the results was observed. The most common reasons highlighted were exams and academics, followed by relationship problems in the college or family and homesickness. Like other studies have shown (Steenberger *et al.*, 1993; Ronald, 1993), girls have reported exams, family and relationship problems more frequently as the reason for their stress than their male colleagues.

By and large, 75% of the medical students were satisfied with their individual coping mechanisms. The most frequently reported were spending time with friends, followed by sleep, music, sports and isolation. It was observed that females preferred to study and sleep while their male counterparts were inclined to hang out with their friends, play sports or isolate themselves. Both day scholars and hostellites preferred spending time with friends and playing sports. A striking difference was seen in smoking being used as a coping mechanism in hostellites, double the frequency of day scholars. The development of such an unhealthy habit was attributed to the peer pressure and being away from the families.

As for recommendations, a majority asks for a more encouraging, interactive and friendly relationship between faculty and students. The need for more effective student advisors was clearly highlighted. They want more entertainment activities such as movie shows, reading clubs, dramatics and debates, musical and cultural events, sports, free Internet facilities and more college-sponsored excursion tours. Hostellites recommended better hostel facilities, especially a cafeteria exclusively for the medical students, and lowering the hostel rent. Day scholars would like commuting facilities provided by the college. Quite a few have accepted the way things are and recommended coping strategies rather than changing the present system. Going out of campus, change of one's environment, tea, coffee and smoking seem to be popular solutions to cope with the stress amongst this group.

Conclusion

Student life is exciting but it can also be very pressured and stressful as it is a transitional period. It also involves many challenges at a practical level. A high stress level may affect not only academic performances but also all aspects of student health. The psychological make up of medical students developed during five years of medical schooling is likely to continue in their professional lives too (Firth-Cozens, 2001). Medical students should be offered more opportunities for recreational and leisure time activities, such as weekly movie shows, event celebrations, excursion tours and musical concerts (Aktekin,

2001). Physical activities, sports and socialization are indispensable for individual growth and to foster personal development (Azariah & Reichenback, 2001; Durkin *et al.*, 2003). Sports, music and arts could be made a part of the optional curriculum.

Besides more approachable and functional student advisors, peer education and counselling would be an ideal solution for this problem. This approach in pedagogy has been found successful for centuries (Baudier *et al.*, 1997). The teaching faculty can also be of help, just being more interactive and convivial. Faculty can help students in improving studying habits, managing time wisely, learning positive self-talk and learning how to relax.

Different stress management techniques such as meditation, support groups, games etc., help in better adoption of coping skills, improved knowledge of stress and enhanced ability to resolve conflicts (Shapiro *et al.*, 2000). 'Stress management' and 'Time management' taught along with first and second year curricula may assist students in dealing with stress due to study loads (Lee & Graham, 2001). Health education programs, mentorship and extracurricular activities can be important strategies to enable undergraduates cope better with the demands of this tertiary level of education.

Medical students are one important segment of our young population which constitutes almost 40% of our total population today (Government of Pakistan, 2000). It is heartening to know that health problems of the young population are underlined and addressed to some extent in the government's policy for youth (Government of Pakistan, 2001). There is a definite need for regular surveys to be undertaken to monitor the levels of health among youth, especially the students, whose well-being guarantees the future.

References

- AKTEKIN, M., *et al.* (2001). Anxiety, depression and stressful life events among medical students: A prospective study in Antalya, Turkey. *Medical Education*, 35, 12–17.
- AZARIAH, S. & REICHENBACK, L. (2001). *Youth development in Pakistan*. Technical report No. 21. Islamabad: Population Council.
- BAUDIER, F., BONNIN, F. & MICHAUD, C. (1997). *Les groupes de pairs et la promotion de la santé*. La santé des adolescents: Approche, soins, prévention. Lausanne: Payot, Paris: Doin, Montréal: Press de l'Universitaire, pp 94–99.
- CARTER, A.O., ELZUBEIR, M., ABDULRAZZAQ, Y.M., REVEL, A.D. & TOWNSEND A. (2003). Health and lifestyle needs assessment of medical students in the United Arab Emirates. *Medical Teacher*, 25, 492–496.
- CHEW-GRAHAM, C.A., ROGERS, A. & YASSIN, N. (2003). 'I wouldn't want it on my CV or their records': Medical students' experiences of help-seeking for mental health problems. *Medical Education*, 37, 873–880.
- DURKIN, S.R., BASCOMB, A., TURNBULL, D. & MARLEY, J. (2003). Rural origin medical students: How do they cope with the medical school environment? *Australian Journal of Rural Health*, 11, 89–95.

- FIRTH-COZENS, J. (2001). Medical students stress. *Medical Education*, 35, 6–7.
- FISH, C. & NIES, M.A. (1996). Health promotion needs of students in a college environment. *Public Health Nursing*, 13, 104–111.
- GISELE, M. (2002). Stress in graduate medical degree. *Medical Journal of Australia*, 17, 10–11.
- GOVERNMENT OF PAKISTAN (2000). *1998 National Census Report*. Islamabad: Population Census Organization, Statistics Division.
- GOVERNMENT OF PAKISTAN (2001). *National Youth Policy: A perspective and a review*. Islamabad: Ministry of Sports, Culture, Tourism and Youth.
- LEE, J. & GRAHAM, A.V. (2001). Students' perception of medical school stress and their evaluation of wellness elective. *Medical Education*, 35, 652–659.
- MUNDT, M.H. (1996). Peer interviewing: A student health survey on an urban campus. *Journal of American College Health*, 44, 187–192.
- OXFORD MEDICAL PUBLICATIONS (1985). *Concise Medical Dictionary*, 2nd edn. Oxford: Oxford University Press.
- PRINCETON UNIVERSITY (2001). *Word Net Dictionary*. USA.
- RAJ, R.S., SIMPSON, C.S., HOPMAN, W.M. & SINGER, M.A. (2000). Health related quality of life among final year medical students. *Canadian Medical Association Journal*, 162, 509–510.
- RONALD, B.W. (1993). A survey of university health centers in Western Canada. *Journal of American College Health*, 42, 71–76.
- SAIPANIS, H.R. (2003). Stress among medical students in a Thai medical school. *Medical Teacher*, 25, 502–506.
- SHAPIRO, S.L., *et al.* (2000). Stress management in medical education. *Academic Medicine*, 75, 748–759.
- STEENBERGER, B.N., ALLAN, J. & RALPH, A. (1993). Research in college health: Analyzing & communicating results. *Journal of American College Health*, 42, 99–104.
- STEWART, S.M., LAM, T.H., BETSON, C.L., WONG, C.M. & WANG, A.M. (1999). *Prospective analysis of stress and academic performance in the first and second year of medical school*. Department of community medicine and personal development and counseling center. University of Hong Kong Medicine Education, pp 243–250.
- VAZ, R.F., MBAJIORGU, E.P., AUDA, S.W. (1998). Study of stress levels amongst first year medical students at the University of Zimbabwe. *Central African Journal of Medicine*, 44, 214–219.
- WORLD HEALTH ORGANIZATION (1994). *The health of young people: A challenge and a promise*. Geneva: WHO.
- XIANG, H. *et al.* (2000). Cigarette smoking amongst medical students in the Republic of China. *Preview of Medicine*, 29, 210–215.