ORIGINAL ARTICLE

PREVALENCE OF STUDY RELATED ANXIETY AMONG FEMALE MEDICAL STUDENTS

Sundas Ishtiaq[1], Maleeha Khan[1], Anum Shaheen[1], Saira Mansoor[2]

ABSTRACT

OBJECTIVE: To see the prevalence of study related anxiety, its severity & frequency of different symptoms related to anxiety among female medical students.
STUDY DESIGN: A cross- sectional analytic study
PLACE AND DURATION: At Women Medical College, Abbottabad in August 2012.
METHODOLOGY: A self-administered anonymous questionnaire was given to MBBS female students from all classes. Informed consent was taken from the students who were present at the time of handing over of the questionnaire. Data was collected and analysed at the end of study.
RESULTS: A total of 93 students participated in the study and all were female. Study related anxiety was found in 72.26% of students. Anxiety was more common amongst final year students (83.10%), followed by 1st /2nd year students (75%). Majority of the students were having mild to moderate severity of anxiety i.e. 41.07% and 37.51% respectively. Prevalence of anxiety was less among 4th year students which was 63.23%.
CONCLUSION: Our study suggests the current educational process may have a negative effect on students' mental health, with a high frequency of anxiety among medical students.

KEY WORDS: Medical Students, Anxiety, Study Related

INTRODUCTION

Anxiety is a general state of uneasiness that cause nervousness, fear, apprehension, and worrying .it is a bodily response to a perceived danger or threat that could be real or imagined and triggered by an individuals thoughts beliefs and feelings. These disorders affect how we feel and behave, and they can manifest real physical symptoms [1].

People often experience a general state of worry or fear in their routine life before confronting something challenging such as an examination, competition, social encounter or interview etc. These feelings are easily justified and considered normal. Anxiety is considered a problem when symptoms interfere with a person's ability to sleep or otherwise function. Generally speaking, anxiety occurs when a reaction is out of proportion with what might be normally expected in a situation. Mild anxiety is vague and unsettling, while severe anxiety can be debilitating, having a serious impact on daily life Depression and anxiety are common conditions with prevalence ranging between ten to twenty percent in the general population for any twelve-month period[2]. Depression in the working age population is estimated to cost $12 billion annually in medical care and approximately $44 billion annually in lost productivity [3]. Mental health affects physical health, job performance and healthcare utilization. Stress, depression and anxiety disorders can contribute to absenteeism and lack of confidence among the people[4].

Anxiety has been associated to medical education because it can contribute to the development of anxiety and depression in medical students which may have possible negative academic and professional consequences on them. Among medical students, academic stressors include the extensive course load, long duration of course, academic performance and evaluation ie examination and continuous assessment[5]. Hence the long duration of medical education with its challenging and excessive course and continuous evaluation process makes the exam of nerves more rather than knowledge. Exam anxiety is a set of responses that includes excessive worry, depression, nervousness and irrelevant thinking to a class of stimuli from an individual's experience and assessment/test and outcome[6]. Moreover, the transition from pre-clinical to clinical training has also been identified as a crucial stage of medical school contributing in student's stress[7]. Previous studies in Pakistan have shown a higher prevalence of anxiety and depression among medical students [5,8-10].

Despite knowledge about anxiety, stress and other health hazards, the health professionals are often not aware of the factors that contribute to their own general and mental health. Several factors have been identified that contribute to burnout and lack of job satisfaction in the field of medicine. This study was conducted to see the prevalence of study related anxiety in our set up and the commonest symptoms which these students come across in their daily life due to this anxiety.

1 Students, 4th Year MBBS
Women Medical College, Abbottabad
2 Assistant Professor, Community Medicine
Women Medical College, Abbottabad

Correspondence to:
Miss Sundas Ishtiaq
4th year MBBS
Women Medical College, Abbottabad
E-mail: sundas_ishtiaq@yahoo.com

METHODOLOGY

This cross sectional analytic study was conducted on 1st Professional Level (1st /2nd year to Final Professional level (5th year) MBBS students of Women Medical College Abbottabad in August 2012. The objectives of this study were to see the prevalence of study related anxiety, its severity and frequency of different symptoms related to study induced anxiety. About 500 female students are attending classes from 1st year to final year at Women Medical College Abbottabad. Students from all classes were selected randomly and those students who have completely filled the performa were included in the study.

A self designed questionnaire was given to students, who were willing to participate in this study without disclosing their identity. A total number of ten questions relating to different symptoms regarding their studies and anxiety levels were asked from the students in this questioner. The students have to grade their level of anxiety from zero to gradel four in ascending order. Grade zero represent no anxiety, grade - I represent mild, grade - II, for moderate and grade - III shows severe anxiety. The grade - IV represents the depression. The survey was done during the mid session when the students did not have any major examination scheduled.

To ensure anonymity, the respondents were asked not to put their names or other identifying notation on the questionnaire. A group of students from 4th year MBBS class has conducted this survey under the supervision of their senior teacher from the Department of Preventive Medicine, Women Medical College Abbottabad. All data was recorded carefully and analyzed statistically. Data entry and analysis was done on Epi info version 6.0.

RESULTS

A total of 93 students from 1st year to final year MBBS class has completed the questioner and were included in the study. All participants were female because this study was conducted in Women Medical College, where all students are female. Study related anxiety was found in 72.26% (n=67) students, whereas about 22.58% (n=21) have no study related anxiety or depression and only 5.16% (n=5) shows study related depression (Figure - I).

Graph – I, shows that 75% having study related anxiety during 1st Professional level (1st /2nd year) which dropped to 68.43% and 63.23% during 3rd year and 4th year respectively, but again this rise sharply up to about 83.10% amongst final year students. Similarly about 2.85% students have depression during 1st /2nd year which shows fluctuation during subsequent years and about 5.86% students were found depressed in final year MBBS. About 22.16% students have no study related anxiety or depression which remain almost stable (22.63%) up to 3rd year class and students feel more relaxed (33.54%) during 4th year, but this number dropped and only 11.04% having no effect of studies on their personality in final year MBBS.

Graph - II, shows distribution of intensity of anxiety i.e. mild, moderate, or severe among the students who gave history of anxiety from 1st professional level to final professional level. Among these anxiety suffering students, in 1st/2nd year majority of students suffered from mild or moderate degree of anxiety i.e. 37.15% and 34.28% respectively and this frequency remains almost same during 3rd year but in 4th year majority of students (53.06%) have mild degree of anxiety and only 15.31% gave history of severe anxiety. In final year majority (41.49%) of students again develop moderate severity of anxiety followed by mild severity of anxiety amongst 34.85% students. Overall in all classes majority of student (41.07%) having mild anxiety followed by moderate degree in 37.51% and only 20.42% student suffer from severe anxiety. Prevalence of anxiety is higher in Final year students which are about 35.86%.

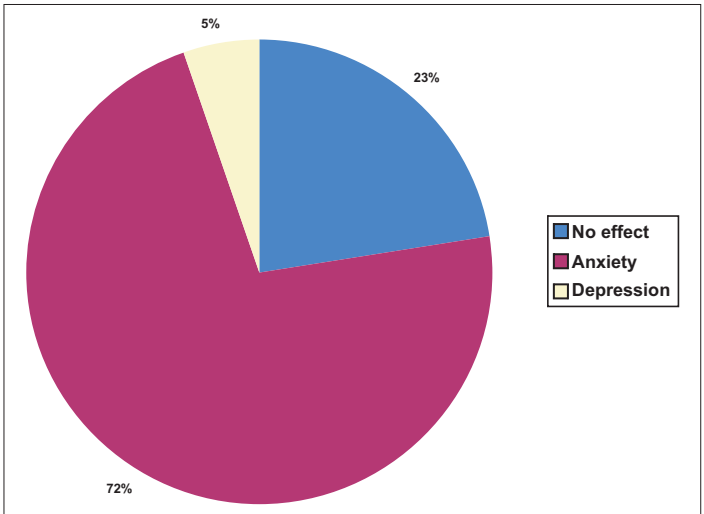
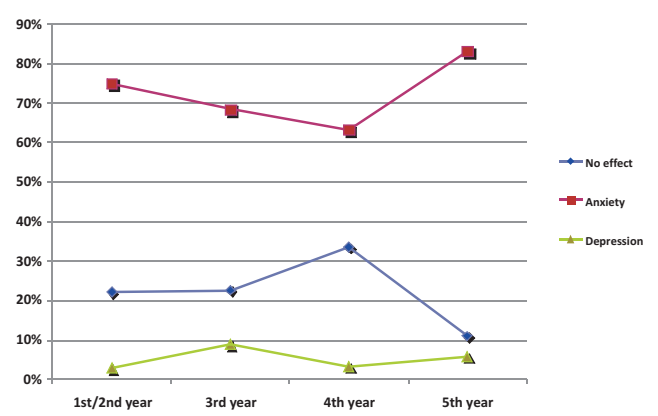


Figure – I: Overall prevalence of anxiety and depression among medial students

Regarding different symptoms of anxiety asked in questioner (Table – I), most of the students have moderate (n=34, 36.55%) to mild (n=27, 29.03%) severity of recurrent fearful thoughts about studies. About 40.86% (n=38) students have moderate severity of constant tension about their studies. Similarly, about half of the students have mild (n=23, 24.73%) to moderate (n=24, 25.80%) severity of panic feelings about their examination. Similarly, more than half of the students (n=28, 30.10%, & n=25 26.88% respectively) have moderate to mild severity of butterfly feeling in stomach. Whereas, about 34.40% (n=32) have mild and 27.95% (n=26) were having moderate fear of being fail in examinations. Only 18.27% (n=17) and 21.50% (n=20) students do not think that they are constantly at war or wasting their time in socializing with their colleagues respectively. Rest of the students (average about 80%) having mild to severe degree of these feelings which leads to anxiety.

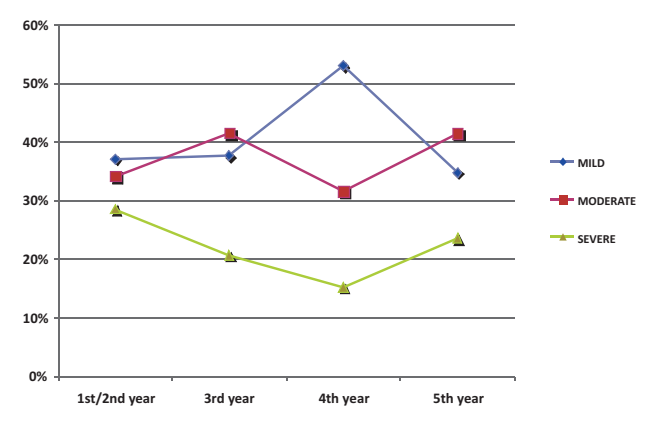
DISCUSSION

Tertiary education has always been regarded as highly stressful and this stressful environment can exert a negative effect on the physical and psychological development and well being of the undergraduate



Graph – I: shows the prevalence of anxiety and depression among students from 1st year to 5th year

students. This stress eventually leads to poor academic performance and possibly different types of adverse psychological attitudes and behaviors among the students in their later life. Medical students represent a highly educated population and they encounter multiple stresses and emotional challenges during their transformation from a student to young knowledgeable physician[7]. So there is a need to quantify the anxiety, depression and its associated factors among medical students so that the affected students should be counseled and rehabilitated and if untreated, can leads to mental distress and have a negative impact on their cognitive functioning and learning[8]. It has also been reported that the medical students are reluctant to seek appropriate help for their mental health problems and view it as a weakness. This



Graph – II: Shows the prevalence of intensity of anxiety among students from 1st year to 5th year.

issue needs to be addressed and students should be encouraged to seek help along with provision of adequate counseling facilities[11]. Various studies have come forth to document the levels of anxiety that medical students experience and recommended various coping methods which can reduce stress and anxiety. It is recommended that the factors leading to the subsequent development of anxiety and depression must be identified before intervention methods can be utilized.

Anxiety and depression is not uncommon all over the world. In developing countries 10–44% population suffers from depression and anxiety disorders and among them only less than 35% receive medical care and according to an estimate about 50.8 million people suffer from major depression all over the world[12]. A study over general population of rural area shows that 34% to 43.1% of people suffer from anxiety and depression[13]. It is estimated that by the year 2020, anxiety and depression will be the second most common cause of disability worldwide[3,14].

Academic pursuits take a heavy toll on the mental capacities of all students and medical students are more prone to anxiety and depression than their non-medical peers[15]. Anxiety is experienced not by all but a good score of medical students as an emotional reaction. The fear is not irrational but excessive fear interferes with performance. Patti et al reported that 37% of medical professional have the symptoms of depression or anxiety[16]. Dyrbye and his colleagues reviewed 40 papers on medical student psychological distress of US and Canada and concluded a high prevalence of depression and anxiety among medical students, with levels of overall psychological distress consistently higher than in the general population and age-matched peers by the later years of training[3]. Study from Malaysia medical university shows a total of 41.9%[17], Singapore 57%[18] and University of Mississippi School of Medicine USA 23% of the medical students were found to have anxiety and emotional disorders[19]. Similarly in our country, Rizvi and colleagues reported that more than half the medical students suffered anxiety symptoms like anorexia, insomnia, fatigue and nausea due to long working hours and tension of completing piled up course[9]. Khan[8] and Inam[5] also reported that about 70% and 60% of medical students suffer from anxiety and depression in their studies. These findings are consistent with our study in which the prevalence of anxiety is about 72.26%. Moreover, different studies show that the prevalence of anxiety or emotional disturbances among medical students is more as compared to other university students [18,20-22].

Females are more vulnerable to stress, anxiety and depression as compared to their male as reported in literature[13,23,24]. In a study among medical students in Shiraz, Islamic Republic of Iran, concludes that the women are more anxious, phobic and depressed as compared to their male colleagues[25]. Similarly, the Dyrbye and his colleagues observed in their review study that the psychological distress is higher amongst female students [3]. Several other studies

Table – I: Prevalence of different anxiety symptoms among students. N=93

Questions	Grade	Total n=93
Q.1. Do you have recurrent fearful thoughts about studies which you want to avoid but cannot do so?	0 (No Effect)	15 (16.12%)
	1(Mild Anxiety)	27 (29.03%)
	2 (Moderate Anxiety)	34 (36.55%)
	3 (Severe Anxiety)	16 (17.20%)
	4 (Depression)	1 (1.07%)
Q.2. Are you constantly tensed, worried or on the edge about your studies?	0 (No Effect)	10 (10.75%)
	1(Mild Anxiety)	29 (31.18%)
	2 (Moderate Anxiety)	38 (40.86%)
	3 (Severe Anxiety)	13 (13.97%)
	4 (Depression)	3 (3.22%)
Q.3. Do you have fear of losing control or going crazy when you can't understand something written in your books?	0 (No Effect)	34 (36.55%)
	1(Mild Anxiety)	25 (26.88%)
	2 (Moderate Anxiety)	20 (21.50%)
	3 (Severe Anxiety)	12 (12.90%)
	4 (Depression)	2 (2.15%)
Q.4. Have you started having difficulties in keeping up with your social relations at college since you do not find time away from books?	0 (No Effect)	35 (37.63%)
	1(Mild Anxiety)	31 (33.33%)
	2 (Moderate Anxiety)	17 (18.27%)
	3 (Severe Anxiety)	9 (9.67%)
	4 (Depression)	1 (1.07%)
Q.5. Do you feel like danger and catastrophe are around every corner during exams?	0 (No Effect)	23 (24.73%)
	1(Mild Anxiety)	28 (30.10%)
	2 (Moderate Anxiety)	19 (20.43%)
	3 (Severe Anxiety)	14 (15.05%)
	4 (Depression)	9 (9.67%)
Q.6. Do you experience sudden, unexpected attacks of heart-pounding panic when you think about tests and exams?	0 (No Effect)	23 (24.73%)
	1(Mild Anxiety)	23 (24.73%)
	2 (Moderate Anxiety)	24 (25.80%)
	3 (Severe Anxiety)	19 (20.43%)
	4 (Depression)	4 (4.30%)
Q.7. Do you get sort of frightened feeling like 'butterflies' in the stomach whenever a test is announced?	0 (No Effect)	26 (27.95%)
	1(Mild Anxiety)	25 (26.88%)
	2 (Moderate Anxiety)	28 (30.10%)
	3 (Severe Anxiety)	11 (11.82%)
	4 (Depression)	3 (3.22%)
Q.8. Do worrying thoughts go through your mind all the time that you would fail?	0 (No Effect)	7 (7.52%)
	1(Mild Anxiety)	32 (34.40%)
	2 (Moderate Anxiety)	26 (27.95%)
	3 (Severe Anxiety)	17 (18.27%)
	4 (Depression)	11 (11.82%)
Q.9. Do you think you are continuously at war with yourself after entering medical college?	0 (No Effect)	17 (18.27%)
	1(Mild Anxiety)	22 (23.62%)
	2 (Moderate Anxiety)	23 (24.73%)
	3 (Severe Anxiety)	24 (25.80%)
	4 (Depression)	7 (7.52%)
Q.10. Do you feel that you are wasting time when you are doing normal activities and that you should be rather studying?	0 (No Effect)	20 (21.50%)
	1(Mild Anxiety)	34 (36.55%)
	2 (Moderate Anxiety)	23 (24.73%)
	3 (Severe Anxiety)	9 (9.67%)
	4 (Depression)	7 (7.52%)

from Pakistan and other parts of the world have also found that emotional disorders are more common among females than male medical students[1,6,8,9,11,19,26,27]. Interestingly, other then medical students, about 34% of Pakistani female physicians were also found stressed and among them about 32% were house officers[28]. In our study, all subjects were female and among them about 72.26% were having symptoms mild to severe anxiety and about 5.16% have study related depression.

Singh and colleagues, from India reported depressive symptoms are significantly higher in 1st year (59.3%) and 2nd year (65.6%), as compared to 3rd (34.4%) and 4th year (37.2%) students[29]. Similarly Aktekin and colleagues from Turkey observed that the depression and anxiety rose significantly in medical students between the first and second years[30]. Inam and Mamdou in their studies reported that the prevalence of anxiety and depression is high among newly entered students (1st and 2nd year) as compared to students who have cleared the first professional examination i.e. 3rd and 4th year students. That could be due to stress of new study environment [5,14]. In contrary, our study shows that the 4th year students have less prevalence of study related anxiety and 5th year and first professional level (i.e. 1st /2nd year) students have highest prevalence of anxiety among all students. This could be due to more study pressure during first professional because students are encountering completely different subjects, curriculum, teaching methodologies and institutional atmosphere. In final year the most probable reason of increase in anxiety prevalence is the lengthy course, clinical attachments, busy schedules and fear of forthcoming challenges in practical life. Students from 3rd Professional level (4th year) were found more relaxed among all classes as observed in our study.

Limited data were available regarding the causes of student anxiety and distress and its impact on academic performance, dropout rates, and professional development[3]. Studies show that the students living in university dormitories were significantly more depressed and anxious than those living at home. Those having a history of negative life events in the recent past were more likely to be depressed. Students in their first two years of medical school were more stressed, and those who had more friends were less anxious and depressed[14].

A study from Karachi over medical students concludes that the commonest psychological symptoms of anxiety were encountered are IBS[27]. Different studies shows that the commonest anxiety symptoms among medical student are sleep disturbances, anorexia, panic attacks, tachycardia, palpitations, emotional disturbances and social problems[3,7,17,30,31]. In our study we observed that the majority of our students suffer from recurrent fearful thoughts, constant worry and tension about study. Majority of them have symptoms of heart pounding panics, frightened feeling like butterflies in stomach and feeling of catastrophe all around them especially before or during examination days. More then half of students also feel difficulty in keeping up social relations with colleagues due to study pressure. Liu et al showed that poor health status, test pressure, conflict with classmates and the personality trait of introversion, were independently associated with the presence of anxiety[32]. Al Nagar reports that the majority of the students reported having anxiety have phobias like speaking in front of crowd, difficulty in eating, phobia from snake etc[21]. A study suggests that after beginning medical school, mental health of medical students worsens and remains poor throughout the training[8]. Some have suggested that depression and anxiety among students may adversely influence their academic performance contribute to academic dishonesty and may lead to increase incidence of smoking, use of medicines like sedatives, tranquilizers, substance abuse and other negative effects on their personality[22,33].

Medical school curricula are designed to ensure every graduate knowledgeable, skillful, and professional. Based on these characteristics, one may anticipate medical school would be a time of personal growth, fulfillment, and well-being despite its challenges. But unfortunately, studies from different parts of the world and from our country conclude that the prevalence of anxiety, stress and depression is quite high among medical students.

CONCLUSION

Our study suggests the current educational process may have a negative effect on students' mental health, with a high frequency of anxiety among medical students. So there is a need for large, prospective, multi center studies to identify personal, study and training-related features that cause anxiety or depression among students and explore relationships between distress and competency.

REFERENCES

1. L. Mundia. The Prevalence of Depression, Anxiety and Stress in Brunei Preservice Student Teachers. The Internet Journal of Mental Health. 2010;2:231-7
2. Center C, Davis M, Detre T, Ford D. Confronting depression and suicide in physicians: A consensus statement. JAMA. 2003;289:3161-6.
3. Dyrbye LN, Thomas MR, Shanafelt TD. Systematic review of depression, anxiety, and other indicators of psychological distress among U.S. and Canadian medical students. Acad Med. 2006 ;81(4):354-73.
4. Williams S, Dale J, Glucksman E, Wellesley A. Senior house officers' work related stressors, psychological distress, and confidence in performing clinical tasks in accident and emergency: a questionnaire study. BMJ.1997;713:718.
5. Inam SNB, Saqib A, Alam E. Prevalence of anxiety and depression among medical students of private

university. J Pak Med Assoc 2003; 53: 44-7.
6. Hashmat S, Hashmat M, Amanullah F, Aziz S. Factors causing exam anxiety in medical students. Source Medical Unit III, Civil Hospital, Dow University of Health Sciences, Karachi. J Pak Med Assoc. 2008;58(4):167-70.
7. Ahmed I, Banu H, Al-Fageer R, Al-Suwaidi R. Cognitive emotions: depression and anxiety in medical students and staff. J Crit Care. 2009;24(3):1-7
8. Khan MS, Mahmood S, Badshah A, Ali SU, Jamal Y. Prevalence of Depression, Anxiety and their associated factors among medical students in Karachi, Pakistan. J Pak Med Assoc 2006; 56: 583-6.
9. Rizvi AH, Awaiz M, Ghanghro Z, Jafferi MA, Aziz S. Pre-examination stress in second year medical students in a government college. J Ayub Med Coll Abbottabad 2010;22(2): 152-5.
10. Shaikh BT, Kahloon A, Kazmi M, Khalid H, Nawaz K, Khan N, et al. Students, stress and coping strategies: a case of Pakistani medical school. Educ Health (Abingdon) 2004;17:346-53.
11. Pahwa B, Goyal S, Srivastava K, Saldanha D, Bhattacharya D. A study of exam related anxiety amongst medical students. Ind Psychiatry J 2008;17:46-8
12. Gadit MAA, Mugford G. Prevalence of Depression among Households in Three Capital Cities of Pakistan: Need to Revise the Mental Health Policy. PLoS ONE 2007;14;2: 209.
13. Luni FK, Ansari B, Jawad A, Dawson A, Baig SM. Prevalence of depression and anxiety in a village in sindh J Ayub Med Coll Abbottabad 2009;21(2):68-72.
14. Mamdou RR, Nasir S. Rates of depression and anxiety among female medical students in Pakistan. La Revue de Santé de la Méditerranée orientale. 2008 ;14(1):126.
15. Rosenthal JM, Okie S. White coat, mood indigo—depression in medical school. New England journal of medicine. 2005;353(11):1085–8.
16. Patti E, Acosta J, Chavda A, Verma D, Marker M, Anzisi L. Prevalence of Anxiety and Depression Among Emergency Department Staff. New York Medical Journal 2007;21(3):321-7.
17. Sidik SM, Rampal L, Kaneson N. Prevalence of emotional disorders among medical students in a Malaysian university Asia Pacific Family Medicine 2003;2: 213–17.
18. Ko SM, Kua EH, Fones CSL. Stress and the undergraduates. Singapore Med. J. 1999; 40: 627–30.
19. Mosley TH Jr., Perrin SG, Neral SM, Dubbert PM, Grothues CA, Pinto BM. Stress, coping and well-being among third year medical students. Acad. Med. 1994; 69: 765–7.
20. Dunn LB, Iglewicz A, Moutier C. A Conceptual Model of Medical Student Well-Being: Promoting Resilience and Preventing Burnout Academic Psychiatry 2008;32:44-53.
21. Al-Naggar RA. Prevalence And Associated Factors Of Phobia And Social Anxiety Among University Students ASEAN Journal of Psychiatry, 2012;13 (2):263-6.
22. Amir M, El Gillany AH. Self-reported depression and anxiety by students at an Egyptian Medical School. J of Pak Psyc Asso 2010;7(2):71.
23. Mirza I, Jenkins R. Risk factors, prevalence, and treatment of anxiety and depressive disorders in Pakistan: systemic review BMJ 2004;328:794.
24. Husain N, Chaudhry IB, Afridi MA, Tomenson B, Creed F. Life stress and depression in a tribal area of Pakistan. Br J Psychiatry 2007;190:36–41.
25. Ahmadi J, Benrazavi L, Ghanizadeh A. Substance abuse among contemporary Iranian medical students and medical patients. Journal of Nervous and Mental disease.2001; 189(12):860–1.
26. Boardman AP. The General Health Questionnaire and the detection of emotional disorder by General Practitioner. Br. J. Psychiatry 1987; 151: 373–81.
27. Naeem SS, Siddiqui EU, Kazi AN, Memon AA, Khan ST, Ahmed B. Prevalence and factors associated with irritable bowel syndrome among medical students of Karachi, Pakistan: A cross-sectional study. BMC Research Notes 2012, 5:255.
28. Niaz U, Hassan S, Ali S. Stress in women physicians in Pakistan. Pakistan journal of Medical Sciences. 2003;19(2):89–94.
29. Singh A, Lal A, Singh S. Prevalence of Depression Among Medical Students of a Private Medical College in India. Online Journal of Health and Allied Sciences 2011;12(2):342-6.
30. Aktekin M, Karaman T, Senol YY, Erdem S, Erengin H, Akaydin M. Anxiety, depression and stressful life events among medical students: a prospective study in Antalya, Turkey. Med Educ. 2001 ;35(1):12-7.
31. Roh MS, Jeon HJ, Kim H, Han SK, Hahm BJ. The Prevalence and Impact of Depression Among Medical Students: A Nationwide Cross-Sectional Study in South Korea. Acad Med. 2010;34:345-8.
32. Liu XC, Oda S, Peng X, Asai K. Life events and anxiety in Chinese medical students. Soc Psychiatry Psychiatr Epidemiol 1997;32:63-7.
33. Niemi PM, Vainiomaki PT. Medical students distress quality, continuity and gender differences during a six year medical programme. Med Tec 2006;28:136-41.