

Medical students' anxiety on beginning clinical studies

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Abstract: *Background:* The switch to the hospital-based course represents a significant stressful change in medical students' experience. *Objective:* To investigate the anxiety levels in students in various clinical situations. *Method:* A 40-item questionnaire based study was conducted to assess students' anxieties about potential anxiety provoking clinical situations and respondent ratings were requested for each of the 40 items on the list. *Results:* 'Getting diagnoses wrong' was the biggest worry overall and of male students whereas female students were most anxious about 'talking with dying patients'. The overall mean anxiety scores for males and females were not different. Females compared to males had statistically higher anxiety scores in only 2/40 situations. *Conclusions:* Pre-clinical students should have early introduction to clinical and community settings.

Keywords: Anxiety; clinical.

Introduction

Medical profession is traditionally considered stressful as it concerns matters of human life and death. People expect medical professionals to deliver under all circumstances which make this career a demanding one [1]. Medical education is regarded as challenging and sometimes taxing as future doctors also share the concerns of their professional colleagues [2-3]. Medical students experience substantial anxiety at different periods of their educational program due to their ominous need to acquire sound academic knowledge and clinical skills. Stress among medical students has also been attributed to apprehensions about examinations and the extensive work load [4-6]. The changeover from the pre-clinical years of the course to the more clinically orientated hospital-based course also represents a potentially significant stressful change in medical students' experience [7]. Such anxieties may result in decreased life satisfaction among students and subsequent problems in professional life compromising patient care [8]. Studies have reported high rates of psychological morbidity amongst medical students for example, reduced examination performance, increased alcohol consumption and attempted suicide [9-11]. The occurrence of anxiety and depression in Pakistani medical students has also been shown in some locally conducted studies [12-13]. It has been

observed that the stresses experienced by male and female students during training are considerably different, somewhat because of different experience of medical training [14]. It has been shown that women are more likely than men to report events as stressful [15]. In comparison with men, women more commonly report difficulties in personal interactions with senior staff (generally male) [16].

Medical curriculum in Pakistan is designed in a way that students have to undergo a five-year MBBS course of study. The first two years, sometimes called the 'pre-clinical' years, mainly involve teaching of basic medical sciences which is accomplished by imparting knowledge in lecture theatres and through laboratory-based work. The last three years largely comprise of hospital-based clinical experiences. The transition into clinical medicine at the beginning of third year has been described as a 'rite of passage' and this shift is associated with psychological stress [7]. Retrieving knowledge about psychological patterns in medical students is crucial as it can help in implementing preventive mental health programs in medical education. Very few studies in Pakistan have addressed this issue [12-13,17] and, according to our knowledge, there is no study available

locally which assesses the prevalence of anxiety in medical students related to commencement of clinical studies. The effect of gender on students' anxiety levels is another key aspect which has not been elaborated by local data. The majority of medical schools in the western world have introduced early clinical contact but this is not in practice at most medical colleges of Pakistan. The present study was, therefore, carried out to determine the prevalence of anxiety among third year medical students of Central Park Medical College (CPMC), Lahore who were about to take their first step into the clinical arena. The study was intended to yield information about prevalence of psychological issues pertaining to initiation of clinical studies at a premier private medical institution with enrolment from all over the province of Punjab. Influence of gender on anxiety among the cohort of students entering the third year in the session 2010-2011 was also investigated in the current study.

Material and Methods

This cross-sectional study was carried out on students of CPMC Lahore. In October 2010, 89 medical students who were about to begin their third year studies, were asked to complete a questionnaire which listed clinical situations they would encounter and to rate how anxious they were about each of them [7]. The questionnaire was slightly modified having 40 questions and it was handed out to students who were present at the time of distribution. The students were instructed to return the completed questionnaire. Prior approval was obtained from the head of the institution. Verbal consent was taken from students before distributing questionnaires and confidentiality was ensured. Data was collected via a self-administered questionnaire which was distributed among students after explaining the purpose of study and the following statement introduced the questionnaire: Being a clinical student will involve you doing many things which you have not done as a pre-clinical student. Some of these new activities you will be looking forward to; others, however, you may be approaching with some anxiety or trepidation. We would like to get some idea of how you feel about a range of clinical activities that you will be taking part in during the next few years, and to know how anxious you feel about undertaking them.

Modifications to the questionnaire were carried out as it was being applied to Pakistani medical students belonging to a society which is relatively conservative and the students were asked about situations which were more likely to provoke anxiety in their own set-up. Questions were also modified to enable students in either context to respond. Students rated the clinical situations they would encounter on a four-point scale (1=not anxious, 2=slightly anxious, 3=fairly anxious, 4=very anxious). Mean scores for each question were computed and questions were then ranked according to their scores. In addition, ranking of situations by gender was also done. Gender differences were compared by performing two-sample t-tests for all situations.

Results

The questionnaire was completed by 87 students (31 males, 56 females), a response rate of 97.75 %. The age range was 19 to 22 years with a mean age of 20.25 years. For any individual student, the possible maximum score was 160 (scoring 4, very anxious, for every question) while the possible minimum total score was 40 (scoring 1, not anxious, for every question). Mean total anxiety scores for males and females were 78.61 and 78.73 respectively, a mean score of 1.96 per question for both. A comparison of the total anxiety scores for all situations between males (mean 78.61) and females (mean 78.73) revealed no significant difference between the two groups (p-value 0.900) (Table 1, Figure 1.). The range of scores among males was 45 – 117 while the range among females was 42 – 112. The mean score per question for the male student with the highest overall anxiety score was 2.92, and 1.12 for the male student with the lowest score. The mean score per question for the female student with the highest total score was 2.80, and it was 1.05 for the female student with the lowest total.

Table-1: Comparison of 'Total anxiety scores' by gender		
Mean 'Total anxiety score'		p-value
Males n=31	Females n=56	
78.61	78.73	0.900
*Difference is significant at the 0.05 level		

Figure-1: Comparison of mean total anxiety scores in male and female students

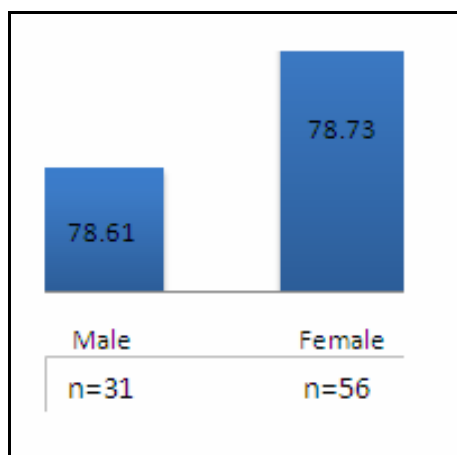


Table 2 shows the overall ranking of each clinical situation and the ranking by gender for CPMC students in 2010. According to our results, ‘getting diagnoses wrong’ was the biggest worry

overall and of male students whereas female students were most anxious about ‘talking with dying patients’ which was also ranked second overall. ‘Helping with a cardiac arrest’ was second in the male students’ list of anxiety provoking situations while ‘getting diagnoses wrong’ was the second worst fear of female students. ‘Inadvertently hurting patients’ was ranked third overall and for males as well but the third rank amongst females went to ‘breaking the news of a patient’s death to relatives’. In the top five ranked clinical situations overall, four are also in the males first five and three are ranked the same. Females share three of their top five ranks with the top five overall but none of them is ranked the same as in the overall standings. ‘Interacting with the nursing staff’ was last in the overall as well as the male rankings whereas females listed ‘taking blood pressures’ at number 40.

No.	Statement	Overall Rank	Male Rank	Female Rank
1	Presenting cases on ward rounds	20	25	14
2	Getting diagnoses wrong	1	1	2
3	Helping with a cardiac arrest	5	2	7
4	Inadvertently hurting patients	3	3	5
5	Telling consultants that you do not know something	4	4	6
6	Dealing with aggressive/abusive patients	17	19	16
7	Making diagnoses	13	9	17
8	Carrying out rectal examinations	14	18	13
9	Carrying out vaginal examinations	10	6	15
10	Suturing patients in casualty	16	16	18
11	Taking blood from patients	28	20	33
12	Giving injections	24	27	23
13	Dealing with psychiatric patients	21	14	22
14	Delivering babies	7	5	8
15	Being asked difficult questions by patients	23	23	24
16	Getting infected by patients	9	7	11
17	Talking with dying patients	2	8	1
18	Examining patients	27	24	30
19	Talking to seriously ill patients	18	15	19
20	Taking histories in out-patients	31	28	28
21	Being left alone with a sick patient	32	29	32
22	Telling patients that you do not know something	15	30	9

No.	Statement	Overall Rank	Male Rank	Female Rank
23	Explaining to a patient that a diagnosis is not known	11	11	10
24	Dealing with sick children	26	31	25
25	Being up all night	25	17	31
26	Going to operating theatre	12	12	12
27	Finding your way around hospital	33	39	27
28	Undressing patients of the opposite sex	19	13	20
29	Undressing elderly patients	22	26	21
30	Going to post mortems	8	21	4
31	Talking to relatives of patients	35	33	34
32	Getting up early for ward rounds	29	22	36
33	Interacting with nursing staff	40	40	37
34	Filling in blood request form	38	36	39
35	Undressing patients of the same sex	30	34	26
36	Taking blood pressures	39	37	40
37	Dealing with elderly patients	34	35	29
38	Talking with patients	36	38	35
39	Breaking the news of a patients death to relatives	6	10	3
40	Taking a pulse	37	32	38

Table-3: Gender comparison of student's responses to individual situations

No.	Statement	Males n=31 Mean	Females n=56 Mean	p-value
1	Presenting cases on ward rounds	1.84	2.14	0.180
2	Getting diagnoses wrong	2.65	2.61	0.865
3	Helping with a cardiac arrest	2.52	2.34	0.498
4	Inadvertently hurting patients	2.52	2.43	0.738
5	Telling consultants that you do not know something	2.45	2.39	0.822
6	Dealing with aggressive/abusive patients	1.97	2.11	0.534
7	Making diagnoses	2.16	2.11	0.822
8	Carrying out rectal examinations	2.00	2.16	0.517
9	Carrying out vaginal examinations	2.29	2.13	0.507
10	Suturing patients in casualty	2.03	2.09	0.816
11	Taking blood from patients	1.97	1.61	0.122
12	Giving injections	1.74	1.84	0.679
13	Dealing with psychiatric patients	2.10	1.95	0.478
14	Delivering babies	2.35	2.30	0.842
15	Being asked difficult questions by patients	1.90	1.80	0.619
16	Getting infected by patients	2.29	2.20	0.707
17	Talking with dying patients	2.26	2.63	0.190
18	Examining patients	1.90	1.66	0.333

No.	Statement	Males n=31 Mean	Females n=56 Mean	p-value
19	Talking to seriously ill patients	2.06	2.05	0.959
20	Taking histories in out-patients	1.74	1.68	0.777
21	Being left alone with a sick patient	1.74	1.64	0.634
22	Telling patients that you do not know something	1.74	2.27	0.032*
23	Explaining to a patient that a diagnosis is not known	2.13	2.21	0.740
24	Dealing with sick children	1.71	1.79	0.752
25	Being up all night	2.03	1.66	0.110
26	Going to operating theatre	2.13	2.18	0.854
27	Finding your way around hospital	1.55	1.71	0.481
28	Undressing patients of the opposite sex	2.13	2.00	0.619
29	Undressing elderly patients	1.81	1.96	0.506
30	Going to post mortems	1.94	2.48	0.041*
31	Talking to relatives of patients	1.68	1.61	0.714
32	Getting up early for ward rounds	1.94	1.59	0.127
33	Interacting with nursing staff	1.45	1.48	0.903
34	Filling in blood request form	1.58	1.46	0.529
35	Undressing patients of the same sex	1.68	1.73	0.806
36	Taking blood pressures	1.58	1.43	0.484
37	Dealing with elderly patients	1.61	1.68	0.768
38	Talking with patients	1.58	1.61	0.909
39	Breaking the news of a patient's death to relatives	2.16	2.54	0.108
40	Taking a pulse	1.71	1.48	0.332
*Difference is significant at the 0.05 level.				

A comparison of student's responses to each situation by gender showed no significant difference in 38 out of the total 40 situations. (Table 3) Females had significantly higher mean scores than males in two situations i.e. 'Telling patients that you do not know something' and 'Going to post mortems'.

Discussion

Medical students experience considerable anxiety at various stages of their education and several factors have been linked to this anxiety [4-6]. The transition to the hospital-based course represents a significant stressful change in medical students' experience [7]. This study highlights the differences in self-reported anxieties of medical students on entering the clinical phase of their studies. New clinical students are worried about

some situations they expect to face and such anxieties can only contribute to the high levels of stress which medical students experience [10,14-15]. It has been contested that stress may be beneficial in improving performance but a lack of correlation between examination performance and stress levels suggests that such stress is unlikely to be of educational benefit [10,18-19]. Detailed analysis of our data shows that students perceive interactions with senior medical staff particularly anxiety inducing e.g. getting diagnosis wrong and admitting ignorance to consultants.

Additional anxieties concerned situations requiring students to deal with dying patients, handling cardiac emergencies or breaking the news of patient's death to relatives. Delivering babies, going to post mortems and the fear of

getting infected by patients also rated high on the list of students. These findings are consistent with those reported by other authors previously [20]. As professional doctors, we tend to underestimate the anxiety associated with such familiar and often trivial situations but the inexperienced students perceive them as threatening and demanding. Students are anxious in interacting with their consultants primarily due to the fear of being embarrassed and made self-conscious in front of their colleagues. The results of the present study were quite similar when compared by gender and females were more anxious than males only in telling patients that they did not know something and going to post mortems. The overall anxiety levels of males and females were not different either. This is in contrast to the popular belief that females show much higher anxiety levels than males. This interesting observation is a reflection of the growing reputation of female students as being equal to or better than male students in a traditionally male dominated society. Studies conducted in the western world have reported women to be more anxious than men, both overall and for most individual situations [21] but our results do not reflect this gender difference. This may possibly be due to different sociopolitical situation of the areas and sociodemographic background of participants.

In light of these results, we need to restructure our courses to ameliorate additional stresses on

already pressured students. We also need to ensure that pre-clinical students have sufficient early contact with clinical teachers to allay the anxieties they are experiencing about contact with consultants and to counteract the anecdote handed down from more senior students. Medical teachers need to be briefed, trained and aware of the needs of students. The earlier community-based clinical experience scheme has already been introduced internationally which has helped reduce some of these nonproductive anxieties. We recommend similar initiatives to be instituted at the national level. Preventive programming efforts should begin early in medical education and address a wide variety of concerns from academic to interpersonal relationships. In a larger mental health perspective, there is a dire need for greater attention to the psychological well being of medical students. Students should be encouraged to engage in healthy social, recreational and extra-curricular activities.

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