

Apprehension among medical students while dealing with patients: A cross-sectional study in a private sector medical college and teaching hospital

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A B S T R A C T

Introduction: Beginning to deal with patients can be a testing experience for medical students. Many schools have endeavored to understand students' perceptions and acclimatize them to the stresses of clinical work with success.

Objective: This study aimed to identify undergraduate students' apprehensions when dealing with patients, explore the underlying causes of these apprehensions, examine gender differences in apprehension levels, and investigate any effect of patient encounters on career choices.

Methodology: This cross-sectional study was conducted on third, fourth and fifth-year medical students of Shifa College of Medicine, selected by simple random sampling. Data was collected using a self-administered questionnaire. Statistical analysis was done using Statistical Package for the Social Sciences (SPSS).

Results: Results showed that 22.5% of the students felt significant apprehension when dealing with contagious patients, 11.2% with psychiatric patients, and 13.0% with terminal patients. Male students exhibited more apprehension than female students when interacting with female patients of similar age ($p=0.0001$) and middle age ($p=0.020$). Greater apprehension was felt in the Emergency Room (mean 2.66) as compared to in-patient (2.07) and community clinic (1.82). The highest level of apprehension was in the presence of a consultant (51.5% answered either 4 or 5). 128 students (75.7%) believed they would be less apprehensive if they saw more patients.

Conclusion: Specific apprehensions among medical students were identified when interacting with different types of patients. Gender differences, clinical settings, and the presence of consultants influenced apprehension levels. Increasing patient exposure was seen as one solution to reduce apprehension.

Keywords: Apprehension, Medical students, Patients, Interaction

Introduction

Exposure to the clinical setting as an undergraduate medical student is a vital part of medical education, bringing the aspiring doctor in contact with patients, the ultimate object of their studies. In this transition from books to patients, various methodologies are employed to deliver knowledge, including actual history taking, physical examination, morning reports, and "classroom" activities (lectures, workshops and simulations). With this "human element" in their lives, students now face unique burdens

in addition to their ongoing theoretical learning. Burdens such as the fear of making mistakes, coping with responsibility and facing with inexactness of medicine were highlighted in a study.¹ Different students cope with them in different ways, and with their learning and mental health intimately tied to how well they manage to adjust to this change, it is essential to identify any significant apprehensions regarding dealing with patients.

This point is better elaborated in research, which showed that high social anxiety scores among medical undergraduates correlated with negative communication skills and attitudes.² Exploring such perceptions may uncover specific modifiable sources of tension, possibly helping improve student-patient interaction, which will benefit student learning and confidence and the community, which currently needs skillful and critically empathizing "human" doctors.

Methodology

Study Design

It was a cross-sectional study. Our sample population were students of Shifa College of Medicine, located in Islamabad, who were in their 3rd, 4th or 5th year of studies and had completed at least one clinical rotation. 1st and 2nd-year students, those who had not completed at least one clinical rotation and those who did not consent were excluded.

Sample Size

Using Open EPI (proportion mode), a sample size of 169 was calculated. Participants were selected via simple random sampling.

Questionnaire

A self-administered questionnaire was employed, which used most close-ended questions with some open-ended questions regarding personal bio-data and a single open-ended question that called for an explanation if applicable. The close-ended questions involved the Likert Scale that was arranged into five levels, from no apprehension to intense apprehension, and the option of having never interacted with the kind of patient asked in that question. The questionnaire was distributed both online and in printed form.

Statistical Tests and Variables

Various questions were asked, so sections arranged them according to bio-data, participants' confidence in their basic sciences knowledge, the effect of type of patient on apprehension, apprehension in different clinical encounters, and the effects of dealing with patients on various aspects of participants' attitudes. The variables in this study are nominal, ordinal and dichotomous. The following listed are the variables:

1. Gender
2. Age
3. Year of study
4. Apprehension in different clinical settings
5. Effects of patient interaction on various aspects of student life, including career choice

A combination of the chi-square test, t-test, and one-way ANOVA were used as appropriate. All data were entered into the IBM Statistical Package for the Social Sciences (SPSS) Software and analyzed accordingly.

Ethical considerations

Institutional Review Board (IRB) approval was obtained before conducting this study. Consent was taken at the beginning of the questionnaire, and all information provided by the participants was kept confidential.

Results

A total of 169 MBBS students of 3rd, 4th and 5th year completed the questionnaire. Basic profile of the study participants is listed in Table 1.

Table 1: Basic profile of participants

Gender	Male	N=75
	Female	N=94
Median age (range)	22 years (range = 7; 20 to 27)	
Number of students in each year	3rd year	N=55
	4th year	N=55
	5th year	N=59
Percentage of students residing in a hostel	26.0% (N=44)	
Percentage of students with a doctor in their close family	52.7% (N=89)	

Participant's feelings in the hospital environment:

Participants were asked about feeling overwhelmed, anxious, fearful, nervous or sorrowful in the hospital. 36 students (21.3%) felt overwhelmed, while the most common feeling was nervousness (68), followed by anxiety (44), sorrow (39) and fear (14). 64.5% of participants believed their knowledge of the basic sciences was

adequate for their clerkship activities (109 out of 169 answered "yes").

Effect of type of patient on apprehension:

The respondents were asked to score apprehension on a scale of 0 to 5 while dealing with the following types of patients:

- Those with a contagious disease
- Those with a psychiatric illness
- The terminally ill

Their scores were grouped into three categories:

1. Not applicable, or NA (if they chose 0: Never interacted, or 3: Unsure)
2. Insignificant apprehension (if they chose 1: No apprehension or 2: Some apprehension)
3. Significant apprehension (if they chose 4: Strong apprehension or 5: Very strong apprehension)

The results are summarized in Figure 1.

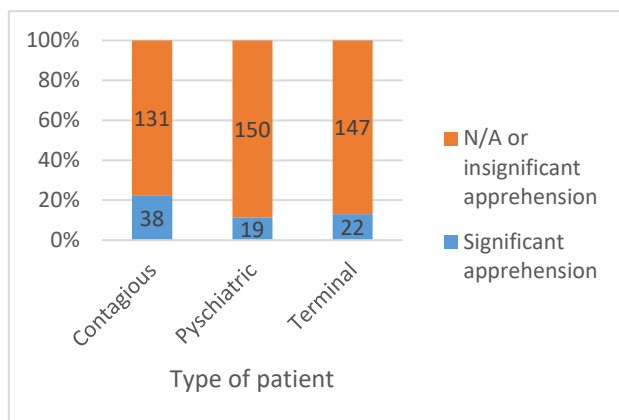


Figure 1: Percentage of participants with Significant Apprehension for each type of patient.

Apprehension in different clinical encounters:

They were asked to score their apprehension on a scale of 1 to 5 while dealing with male and female patients separately for three different age groups (similar age, young, middle-aged/elderly). To test the association between the gender of the patient and apprehension, a Chi-square test was applied. It was significant for $p < 0.05$ when applied to the "similar age, female patient" category ($p = 0.0001$), as well as the "very young, female" category ($p = 0.0001$). It was insignificant for the "similar age, male

patient" category ($p = 0.257$). It was also not significant for all the other age groups.

A t-test was performed to compare the mean apprehension score of male students with female students in each age category. It was significant only in two categories, with male students having a higher mean apprehension score in each: the "similar age, female patient" group (mean score for males = 2.28 vs females = 1.39; $p = 0.0001$) and the "middle-aged/elderly female patient" group (mean for males = 2.04 vs females = 1.67; $p = 0.020$). It implies that male students are more apprehensive while dealing with patients of the opposite gender, while female students are unaffected by the gender of the patient. The mean scores are illustrated in Table 2.

Table 2: Comparison of mean apprehension scores for male and female students for different ages and genders of patients; p values in bold are significant.

Age and gender of the patient	Score Male students Mean (SD)	Score Female students Mean (SD)	P-value
Similar age, male	1.59 (0.946)	1.87 (1.050)	0.068
Similar age, female	2.28 (1.097)	1.39 (0.858)	<0.0001
Very young male	1.83 (1.107)	1.55 (0.838)	0.069
Very young female	2.11 (1.158)	1.48 (0.839)	<0.0001
Middle-aged/elderly male	1.81 (0.926)	2.01 (1.000)	0.190
Middle-aged/elderly female	2.04 (1.071)	1.67 (0.977)	0.020

They were asked to score their apprehension while working in the following three settings:

- Community clinic (Falahi OPD)
- Shifa International Hospital (SIH)/In-patient
- Emergency (ER)

The one-way ANOVA test compared the participants' mean scores in these settings. The test was significant ($p < 0.00001$), with ER having the highest mean score (2.66), followed by SIH/In-patient (2.07) and then Falahi OPD (1.82). Apprehension was scored in each of the following six clerkships:

- Surgery

- Gynecology/Obstetrics
- Medicine
- Ear, nose and throat (ENT)
- Ophthalmology
- Paediatrics

To compare the mean scores of 3rd, 4th and 5th-year students in each clerkship, the one-way ANOVA test was performed, which was significant, for $p < 0.05$, for all clerkships except surgery as in Table 3.

Table 3: Mean score and post hoc analysis for each year and clerkships

Clerkship	Mean score for 3 rd year (standard deviation)	Mean score for 4 th year (standard deviation)	Mean score for 5 th year (standard deviation)	p-value (One-way ANOVA)	Multiple comparisons (Post-hoc Tukey's test)
Surgery	2.53 (1.168)	2.13 (1.139)	2.10 (1.322)	0.120	Not applicable
Gynecology/Obstetrics	2.53 (1.289)	2.84 (1.330)	2.12 (1.205)	0.012	4 th year higher than 5 th year (p=0.010)
Medicine	2.16 (1.151)	2.00 (1.089)	1.51 (0.728)	0.002	3 rd higher than 5 th (p=0.002) and 4 th higher than 5 th year (p=0.018)
ENT	1.87 (1.055)	1.76 (0.981)	1.41 (0.746)	0.022	3 rd year higher than 5 th year (p=0.024)
Ophthalmology	1.76 (1.138)	1.62 (0.733)	1.32 (0.730)	0.026	3 rd year higher than 5 th year (p=0.048)
Paediatrics	1.96 (1.018)	2.16 (1.198)	1.58 (0.855)	0.009	4 th year higher than 5 th year (p=0.010)

Further, a Chi-square test was performed to determine any association between the gender of the student and apprehension score in each clerkship. It was found to be significant for two clerkships: Gynecology/Obstetrics ($p = 0.0001$) and Pediatrics ($p = 0.002$). The independent samples t-test was also significant, with males having a higher mean apprehension score in each group: $p = 0.0001$ for Gynecology/Obstetrics (mean for males = 3.07 vs females = 2.02) and $p = 0.001$ for Pediatrics (males = 2.24 vs females = 1.62). The apprehension score in the presence of a consultant had the highest mode of all the scenarios (mode = 4). 87 students answered either 4 or 5, the highest percentage (51.5%) for all the questions in this setting; there was no significant difference between male and female students based on the t-test ($p = 0.154$).

Effects of dealing with patients on various aspects of participants' attitudes:

Participants were asked to score a positive or negative impact of dealing with patients on the following aspects:

- Their learning
- Their empathy for patients
- Their self-esteem
- Their confidence

The overall response was positive. For effect on their learning, 85.3% (144) of participants chose either "4: Some positive effect" or "5: Strongly positive effect". For empathy, self-esteem and confidence, the percentages are 82.2% (139), 67.5% (114) and 78.1% (132), respectively. When asked whether patient exposure will make them better doctors, 84.1% agreed (142). They were also asked about the effect of patient exposure on their career choice if they had decided before 3rd year. 64 participants had not made

a career choice. For the remaining 105 students, Figure 2 illustrates the results.

They were asked if seeing more patients or fewer patients would decrease their apprehension; 75.7% (128) of students believed seeing more patients would make them less apprehensive, 6.5% (11) believed seeing fewer patients would reduce apprehension and 17.8% (30) believed several patients would not affect their apprehension. When asked if they thought patient exposure before 3rd year would decrease apprehension, 56.2% agreed (95). Finally, 58.6% (99) believed workshops would help reduce their apprehension.

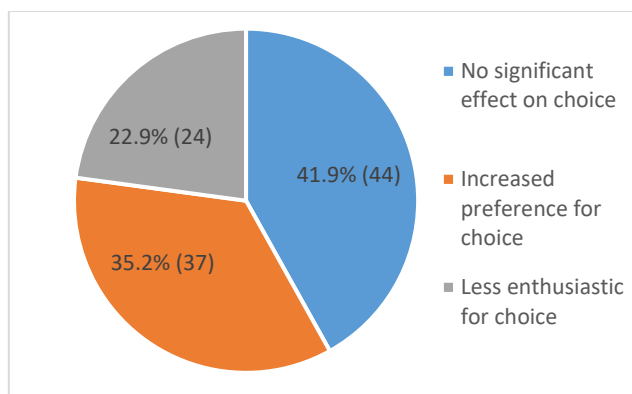


Figure 2: Number and percentage of each response.

Discussion

The most significant statistical finding so far is that male students are more apprehensive than female students while dealing with similar-aged and middle-aged/elderly patients of the opposite gender. It is similar to the results of a study performed in the UK, which showed that the genders of the patient and student interacted powerfully and that female students were more patient-centered than male students.³ Another study on medical students in the US found that female students have more positive attitudes towards communication skills training than male students.⁴ It may provide context to the results of our study that perhaps male students are more apprehensive due to a perceived disregard for the significance of communication skills.

This interaction of doctor-patient gender also affects patients, as a study at a hospital in Toronto, Canada, showed that having a male doctor was the most

commonly perceived hindrance to effective communication.⁵ This implies that gender issues should be targeted, preferably starting in student life, to benefit health professionals and patients. For all the different clerkships, except for surgery, students of other years had significantly different apprehension levels.

It includes gynecology/obstetrics, in which male students showed greater apprehension than female students. It appears to correlate with the results of another study which showed that the only factor that significantly affected the perception of gynecology/obstetrics was gender.⁶ Perhaps apprehension is one factor influencing preference for gynecology/obstetrics as a career. Apprehension in the ER was significantly higher compared to clinic and in-patient settings. Whether this affects students' preference for emergency medicine as a career should be explored because various studies show that students who pursue emergency medicine have different influences and attitudes, including apprehension.^{7, 8}

The majority of our students believed that the effect of interacting with patients was positive. They also believed that more exposure to patients in the pre-clinical years (1st and 2nd years) would decrease apprehension. Therefore, we may recommend that students be involved more in patient care as early as the first year, as advised by a study on medical students' perceptions of their learning regarding interacting with patients in Brazil.⁹ It is unlikely to adversely affect the quality of healthcare services.¹⁰ Our study was limited by the intrinsic limitations of the Likert scale and the inclusion of only a single college.

Conclusion

Specific apprehensions among medical students were identified when interacting with different types of patients. Gender differences, clinical settings, and the presence of consultants influenced apprehension levels. Increasing patient exposure was seen as one solution to reduce apprehension. These findings may guide institutions in designing effective interventions and support systems to address and alleviate the apprehensions faced by students during clinical training.

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