

Gender bias and 'doctor brides'. A social dilemma of medical students in Pakistan

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Abstract

Objective: To assess gender bias, discrimination and bullying at medical schools, and to explore the phenomenon of 'doctor brides'.

Method: The multicentre survey was conducted at 14 medical education institutions across Pakistan from September 2020 to April 2021, and comprised medical students of either gender at both public-sector and private-sector institutions. The survey questions explored beliefs, experiences and knowledge related to common stereotypes and social issues in medical education, including female role models, work-life balance, gender roles, lack of support from family and faculty, and bullying. Association between gender with survey variables was explored. Data was analysed using SPSS 26. Thematic analysis was used to exploring knowledge around 'doctor-brides'.

Results: Of the 377 subjects, 245(65%) were females. The overall mean age was 21.4±1.8 years. There were 211(53.8%) subjects aged 21-23 years, and 368(97.6%) were Muslims. Significantly more women than men were of the opinion that men are encouraged and are more likely to assume leadership roles ($p=0.002$). More women than males agreed that household chores and work had an impact on speciality choice ($p<0.001$). Most sexual assault victims were women ($p<0.0001$), but men generally faced more bullying and hostile behaviour ($p=0.014$). With regard to women being forced to quit medicine after marriage/childbirth by their in-laws/husbands or change their careers from clinical medicine to preclinical teaching, 99(26.25%) subjects knew first-hand of such cases, while 238(63.12%) had no such experience to share.

Conclusion: Gender bias, discriminatory behaviour and bullying were found to be widely prevalent in medical schools across Pakistan. The general perception of 'doctor brides' needs to be revisited.

Key Words: Gender bias, Bullying, Doctor brides, Medical students, Pakistan.

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Introduction

Pakistan is a country with specific socio-cultural norms. It has traditionally been and largely remains a male-dominated society despite improving gender equality, inclusivity of women in the workforce, and improving literacy rates¹. Traditional cultural norms are rapidly changing, especially to women's benefit. Still, this change is arguably confined to large cities where education and progressive media has been the catalyst for women

empowerment.^{1,2} However, the majority of national population still holds traditionalist views.^{1,3,4} Half of all women nationally lack basic education, and literacy rates are as low as 9% in tribal areas for both men and women, with actively violent opposition against women leaving the household and getting education.^{5,6}

While national literacy rates are still poor in Pakistan, women constitute approximately 70% of medical students nationally, but half of all women medical graduates are not retained in the workforce.⁷ In addition, there is a widely prevalent perception by the general population and media that women enter medical schools to enhance their chances of an arranged marriage proposal and, once betrothed, drop out.⁷⁻⁹ However, contrary to the media portrayal, strong socio-cultural forces contribute to gender bias and disadvantage towards women in terms of practising medicine.^{10,11} The poor national retention of women in the workforce, along with stereotypes, has further put them at a disadvantage due to the perceived wastage of national resources as

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public medical school tuition is heavily subsidised in the country which has a grave chronic physician shortage for a population worth over 220 million. Nearly 15,000 medical graduates pass out per annum, but there are only 0.83 physicians per 1,000 population in the country.^{7,11-13}

Students' time in medical school is arguably the most important in shaping their character and giving them the traits required for a lifelong career as a doctor. As medical schools are institutions of higher learning, they can be expected to be a sanctuary away from social and cultural tyrannies faced in real-world social environment. Unfortunately, medical students are at the bottom of an extremely hierarchical profession, and, therefore, they are the most vulnerable to discrimination and bullying.¹⁴ Current literature evaluating gender bias and discrimination in the national setup is sparse. It deals with challenges medical graduates face, including those at the top of the hierarchy, such as senior academics/clinicians and department heads.^{11,15} However, in medical school, which is the foundation of this profession's hierarchy, only one insightful study evaluates gender bias and discrimination in Pakistan.¹⁶ Its results are not nationally generalisable as it is limited to a single military medical college which may be different in its culture and governance from the rest of medical colleges in Pakistan. Similarly, there is sparse literature on bullying in medical schools, with only one well-conducted multicentre study done in 2008.¹⁷

Bullying is a common problem faced by medical professionals, including students, and gender bias and discrimination have also been reported in international literature.¹⁸⁻²³ There is paucity of studies investigating these issues in medical schools within Pakistan. The current study was planned to fill the gap by investigating issues of gender bias, discrimination and bullying faced by medical students in Pakistan.

Subjects and Methods

The multicentre survey-based study was conducted at 14 medical education institutions across Pakistan from September 2020 to April 2021. After approval from the institutional ethics review board of Allama Iqbal Medical College, Jinnah Hospital Lahore (Ref: 62ERB); the sample size was calculated using SurveyMonkey software,²⁴ with 95% confidence interval and 5% margin of error, taking the population size to be 15,000,²⁵ which roughly over-represents the total number of medical students in Pakistan in any given year.

Individual medical colleges and universities were selected randomly by using social media to reach out to students at different institutions across the country. Individuals

who expressed interest were made study leads for their respective institutions, and subsequently, the institutions were recruited using a snowball sampling technique whereby medical students reached out to their colleagues at different sites to secure study leads who distributed the questionnaire. Eventually, 14 medical colleges were recruited based on the willingness of study leads from the participating institutions. To comply with ethics and to protect anonymity, the names of the participating institutions have not been mentioned.

The predesigned survey was vetted internally by senior medical educationists. The questionnaire was disseminated by study leads who used social media groups, individual chats, group chats, and university emails.

The survey questions explored issues demonstrated in previous literature on gender discrimination in Western medical schools and limited Pakistani literature focussing on gender discrimination, bullying and social and cultural factors impacting Pakistani medical students and doctors.^{10,11,14-19,21,26}

The survey consisted of 6 sections/themes: Demographics; Beliefs and experience regarding medical education; Female role models; Perceptions of work-life balance and gender roles; lack of support and hindrances from family and faculty; problems faced during medical school (bullying).

Parts 2-5 were scored on a standard 5-point Likert scale, ranging from 5 = Strongly Agree and 1 = Strongly Disagree. Part 6 consisted of questions adapted from a 2002 survey by the British Medical Association (BMA), which assessed workplace bullying amongst junior doctors in the United Kingdom²⁶.

Besides, the respondents were also asked to provide any anecdotal evidence of women forced to quit medicine after marriage or parenthood. The responses were subsequently subjected to thematic analysis to explore knowledge about the phenomenon of 'doctor-brides'.

Data was analysed using SPSS 26. Descriptive statistics were expressed as frequencies and percentages for categorical variables, and as means and standard deviations (SDs) for continuous variables. The 5-point Likert scale was dichotomised by collapsing 'Strongly Disagree', 'Disagree' and 'Neither Agree nor Disagree' into 'Disagree', and 'Strongly Agree' and 'Agree' into 'Agree'. Chi-Square test was used to find association of gender with survey questions. $P < 0.05$ was considered statistically significant.

Results

Of the 377 subjects, 245(65%) were females and 132(35%). The overall mean age was 21.4±1.8 years. There were 211(53.8%) subjects aged 21-23 years, 368(97.6%) were Muslims, 183(48.5) were in private-sector institutions and 107(28.4%) were in the second year of their 5-year course (Table 1).

Table-1: Demographic characteristics (n=377)

Parameters	Sub-Parameters	Frequencies (n, %)
Gender	Male	132 (35)
	Female	245 (65)
Age (years) Mean: 21.4±1.810	18 to 20	125 (33.2)
	21 to 23	211 (53.8)
	24-26	47 (12.5)
	27+	2 (0.6)
Religion	Islam	368 (97.6)
	Hinduism	2 (0.5)
	Jainism	3 (0.8)
	Ahmadi	2 (0.5)
Type of Medical College	Public Sector	194 (51.5)
	Private Sector	183 (48.5)
Current Year of Enrolment	Year 1	71 (18.8)
	Year 2	107 (28.4)
	Year 3	46 (12.2)
	Year 4	48 (12.7)
	Year 5	105 (27.9)

Table-2: Survey responses (n=377).

Question	Gender				P-value	
	Female (n=245)	Male (n=132)	Total			
Section 1: BELIEFS AND EXPERIENCES IN MEDICAL EDUCATION						
Gender-biased behaviours exists within medical education	Agree	Count	157	96	253	0.112
		% within Gender	64.1	72.7	67.1	
	Disagree	Count	88	36	124	
		% within Gender	35.9	27.3	32.9	
Gender-biased attitudes exits within medical education	Agree	Count	172	101	273	0.235
		% within Gender	70.2	76.5	72.4	
	Disagree	Count	73	31	104	
		% within Gender	29.8	23.5	27.6	
Medical students are encouraged to choose certain specialities based on their gender.	Agree	Count	179	92	271	0.567
		% within Gender	73.1	69.7	71.9	
	Disagree	Count	66	40	106	
		% within Gender	26.9	30.3	28.1	
Section 2: FEMALE ROLE MODELS AND MENTORS						
There are limited female role models and mentors in medical sciences	Agree	Count	128	58	186	0.153
		% within Gender	52.2	43.9	49.3	

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Overall, 253(67.1%) participants agreed that gender-biased behaviours existed, 273(72.4%) said gender-biased existed in medical education, 271(71.9%) said medical students were encouraged to choose certain specialities based on their gender ($p>0.05$). Significantly more women than men were of the opinion that men are encouraged and are more likely to assume leadership roles ($p=0.002$) (Table 2).

Of the 245(65%) females, 188(76.7%) believed that 'women would set more ambitious goals in the presence of female role models and mentors' compared to 86(65.2%) of 131(35%) males in the study ($p=0.022$).

Also, 161(65.7%) women agreed that they were responsible for most household work and chores compared to 72(54.5%) men. More among women 113(46.1%) than 27(20.5%) believed that household chores and work had an impact of speciality choice ($p<0.001$). More of the women 168(68.6%) than men 74(56.1%) agreed that women need to take into consideration work-life balance when choosing a speciality ($p=0.021$).

Significantly more women believed that their family 239(97.6%) and colleagues/faculty 226(92.2%) were supportive of their medical education compared to men 116(87.9%) and 108(81.8%), respectively ($p<0.001$). A significantly higher proportion of men 86(65.2%) than women 109(44.5%) believed marriage and/or parenthood

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Female role models and mentors play a critical role to guide women in clinical medicine	Disagree	Count	117	74	191	
		% within Gender	47.8	56.1	50.7	
	Agree	Count	184	97	281	0.826
		% within Gender	75.1	73.5	74.5	
Women will set more ambitious goals in the presence of female role models and mentors	Disagree	Count	61	35	96	
		% within Gender	24.9	26.5	25.5	
	Agree	Count	188	86	274	0.022*
		% within Gender	76.7	65.2	72.7	
Women are discouraged from assuming positions of leadership	Disagree	Count	57	46	103	
		% within Gender	23.3	34.8	27.3	
	Agree	Count	129	52	181	0.019*
		% within Gender	52.7	39.4	48.0	
Men are encouraged and are more likely to assume leadership and managerial roles (than women)	Disagree	Count	116	80	196	
		% within Gender	47.3	60.6	52.0	
	Agree	Count	173	71	244	0.002*
		% within Gender	70.6	53.8	64.7	
	Disagree	Count	72	61	133	
		% within Gender	29.4	46.2	35.3	

Bold Values* indicate statistically significant differences.

Table-3: Perception of work-life balance, gender roles, lack of support and gender-based hindrances (n=377).

Question			Gender			P-value
			Female (n=245)	Male (n=132)	Total	
Section 1: PERCEPTION OF WORK-LIFE BALANCE AND GENDER ROLES						
Women are responsible for the majority of household work and chores	Agree	Count	161	72	233	0.044*
		% within Gender	65.7	54.5	61.8	
	Disagree	Count	84	60	144	
		% within Gender	34.3	45.5	38.2	
Household chores and work impact by speciality choice	Agree	Count	113	27	140	< 0.001*
		% within Gender	46.1	20.5	37.1	
	Disagree	Count	132	105	237	
		% within Gender	53.9	79.5	62.9	
Women need to take into consideration work-life balance when choosing a speciality	Agree	Count	168	74	242	0.021*
		% within Gender	68.6	56.1	64.2	
	Disagree	Count	77	58	135	
		% within Gender	31.4	43.9	35.8	
A speciality with longer work hours is a hindrance for marriage and/or planning a family	Agree	Count	167	76	243	0.053
		% within Gender	68.2	57.6	64.5	
	Disagree	Count	78	56	134	
		% within Gender	31.8	42.4	35.5	
Section 2: LACK OF SUPPORT AND HINDRANCES AGAINST WOMEN						
My family is supportive of my medical education	Agree	Count	239	116	355	< 0.001*

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		% within Gender	97.6	87.9	94.2	
	Disagree	Count	6	16	22	
		% within Gender	2.4	12.1	5.8	
	Agree	Count	226	108	334	0.004*
		% within Gender	92.2	81.8	88.6	
	Disagree	Count	19	24	43	
		% within Gender	7.8	18.2	11.4	
My family, colleagues and or/faculty will not ask me to choose a specific speciality due to my gender	Agree	Count	131	74	205	0.709
		% within Gender	53.5	56.1	54.4	
	Disagree	Count	114	58	172	
		% within Gender	46.5	43.9	45.6	
Marriage and/or parenthood will not interrupt my career goals	Agree	Count	109	86	195	< 0.001*
		% within Gender	44.5	65.2	51.7	
	Disagree	Count	136	46	182	
		% within Gender	55.5	34.8	48.3	
Have you been discouraged to assume leadership or managerial roles?	No	Count	167	91	258	0.969
		% within Gender	68.2	68.9	68.4	
	Yes	Count	78	41	119	
		% within Gender	31.8	31.1	31.6	

Bold Values* indicate statistically significant differences.

would not interrupt their career goals ($p < 0.001$) (Table 3).

Further, 96(39.1%) of the women reported being likely to feel that their colleagues and/or faculty members expressed a lack of confidence based on their gender compared to 28(21.1%) men ($p = 0.0003$). However, more men 65(49.2%) than women 94(38.4%) said their opinions and views were ignored at their institutions ($p = 0.041$).

Table-4: Problems faced at medical school ($n = 377$).

Question		Total Frequencies (%)	Males ($n = 132$)	Females ($n = 245$)	P-Value (Chi-squared)
Have colleagues and or faculty members expressed lack of confidence based on your gender	Yes	124 (32.9)	Yes 28 (21.1%)	Yes 96 (39.1%)	0.000396*
	No	253 (67.1)	No 104 (78.8%)	No 149 (60.9%)	
Have your opinions and views been ignored at your college/university?	Yes	159 (42.2)	Yes 65 (49.2%)	Yes 94 (38.4%)	0.04139*
	No	218 (57.8)	No 67 (50.7%)	No 151 (61.6%)	
Have you ever been removed or replaced from key areas of responsibility to more menial tasks at your college/university?	Yes	79 (21)	Yes 35 (26.5%)	Yes 44 (18%)	0.051523
	No	298 (79)	No 97 (73.5%)	No 201 (82%)	
Have you faced hostility or been ignored in a professional setting at your college/university?	Yes	131 (34.7)	Yes 57 (43.2%)	Yes 75 (30.6%)	0.014664*
	No	245 (65)	No 75 (56.8%)	No 170 (69.4%)	
Have you head of gossip or rumours about yourself at your college/university?	Yes	210 (55.7)	Yes 96 (72.7%)	Yes 114 (46.5%)	<0.00001*
	No	167 (44.3)	No 36 (27.3%)	No 131 (53.5%)	
Have you been repeatedly reminded of your mistakes or persistently monitored in a professional setting at your college/university?	Yes	133 (35.3)	Yes 65 (49.2%)	Yes 68 (27.8%)	0.000031*
	No	244 (64.7)	No 67 (50.8%)	No 177 (72.2%)	

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Have you faced sexual assault at your workplace?	Yes	29 (7.7)	Yes	9 (6.7%)	Yes	20 (8.2%)	<0.00001*
	Prefer Not to Say	24 (6.4)	Prefer Not to Say	6 (4.6%)	Prefer Not to Say	18 (7.3%)	
	No	324 (85.9)	No	117 (88.7%)	No	207 (84.5%)	
Have you been intimidated at your college/university such as finger-pointing, invasion of personal space, being blocked, or shoved?	Yes	113 (30)	Yes	40 (30.3%)	Yes	73 (29.8%)	0.9281
	Prefer Not to Say	18 (4.8)	Prefer Not to Say	7 (5.3%)	Prefer Not to Say	11 (4.5%)	
	No	246 (65.3)	No	85 (64.4%)	No	161 (65.7%)	
Have you ever received hints or signals that you should quit clinical medicine?	Yes	59 (15.6)	Yes	35 (26.5%)	Yes	24 (9.8%)	0.00002*
		318 (84.4)	No	97 (73.3%)	No	221 (90.2%)	
	No						
Did you ever think of quitting medical sciences due to experiencing negative behaviours at your college/university?	Yes	82 (21.8)	Yes	54 (40.9%)	Yes	69 (28.2%)	0.01180*
	No	295 (78.2)	No	78 (59.1%)	No	176 (71.8%)	
Have you been subject to excessive sarcasm or taunts at your college/university?	Yes	123 (32.6)	Yes	41 (31.1%)	Yes	41 (16.7%)	0.001299*
	No	254 (67.4)	No	91 (68.9%)	No	204 (83.3%)	

Bold* values indicate statistically significant differences.

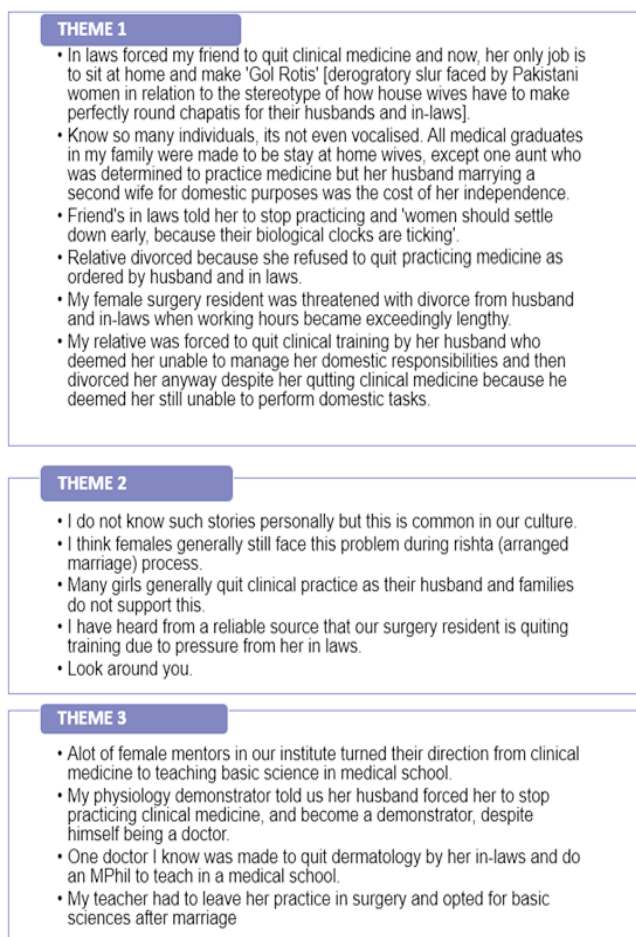


Figure: Thematic analyses grouping anecdotal evidence of women forced to quit medicine after marriage or parenthood (n=139; bullet points are examples provided by respondents).

observation of women who were dictated to change career paths by their in-laws/husbands to non-clinical/basic science specialties to take up teaching preclinical subjects at medical schools, while 238(63.12%) had no such experience to share at all (Figure).

Discussion

The field of medicine is influenced by strong socio-cultural forces globally. Gender bias and bullying are still widely prevalent, with female doctors disproportionately absent from leadership positions in clinical and academic hierarchies; power imbalances are well-documented along with workplace dynamics that support the existence of a patriarchal structure.^{27,28} The first step to solving any problem is to recognise that it exists. Unlike Pakistani socio-cultural setup, studies in Western countries on the topic of gender discrimination date back to the 20th century.²² Current literature has also highlighted this ongoing social dilemma. Gender discrimination and sexual harassment are widely prevalent in numerous medical schools sampled across Germany, Sweden, and the United States, with up to 83% of women reporting having experience gender discrimination and sexual harassment.^{18,19,21,23} In some countries, like Sweden, the gender gap has widened, and gender discrimination and sexual harassment have disproportionately increased over the last decade.¹⁹

The current results showed that most medical students believed gender-biased behaviours were widely prevalent in medical education. Both male and female participants (71.9%) agreed that students were encouraged to choose certain specialities depending on

their gender. This is similar to studies from the West, where women are overrepresented in specialities traditionally considered 'family-friendly' and allow flexible hours.^{20,29} Two-thirds of women and 55% of men in the current study believed women were responsible for most household work and chores. More women (46.1%) than men (20.5%) felt that household chores and work would impact their speciality choice, and, hence, they need to consider work-life balance when choosing a speciality. This reflects traditional gender roles dominating eastern cultures, like in Pakistan, even today, while such beliefs may be less prevalent in the West. Pakistani female doctors have generally been shown to pride their role as a mother, citing religious importance and a strong view that raising children should be primarily the responsibility of the woman in the household.¹¹

There is discordance between the genders, with far more females in the current study agreeing that women will set more ambitious goals in the presence of female role models and that men are more likely to assume leadership positions. The visibility and availability of female role models have been demonstrated to play a vital role in advancing women's careers towards the position of leadership; they can break a cycle where men are de facto assumed to take up leadership roles, especially in a country like Pakistan.³⁰

While the acceptability of women getting an education, in general, has increased slowly, the number of female medical students rose exponentially to an estimated national average of 70% per medical school cohort (as high as 80% in certain schools).^{8,10} Unfortunately, acceptability is somewhat rooted in the belief that a women's education is to be her 'backup' or 'social safety net' if a women's marriage fails.¹¹ Even in schools, teachers and parents of children, while allowing women to get an education, express the thinking that it should be for 'protection' and that girls should not work unless allowed by their husbands and family.³¹ Thus, while 97.6% of female medical students in the current study believed that their family supported their education, this support may not have completely translated into female medical graduates entering the workforce as practising doctors. As the traditional social norms and a women's own view of their primary domestic responsibility come in conflict with the demands of a career in medicine, it contributes to the attrition of female doctors.^{10,11}

Adult children predominately live with their families, and, culturally and religiously, marriage is considered a somewhat sacred responsibility. The woman has to move in with her in-laws and abide by their household rules, in instances leading to much abuse.³² It has been shown

that 76.3% of female final year medical students give importance to the opinions/wishes of their fiancé/husband/future husband on their professional career plans (important or very important).³³ In the current study, just under half of all female medical students disagreed with the statement that their family, colleagues, or faculty will not ask them to choose a specific speciality due to their gender. From the current survey, far more female medical students (55.5%) than male (34.8%) felt marriage and/or parenthood will interrupt their career goals. This may reflect the traditional socio-cultural norms that influence a woman's life after marriage where a bride moves in with her in-laws and takes up new responsibilities as a wife and daughter-in-law, and later on, as a mother, while her career is expected to become secondary. The expectation is rooted in the societal importance and expectations of a woman to get married supercede the woman's and society's expectation of her to practice medicine.^{10,11,34,35}

The thematic analysis in the current study of the evidence of women who were forced to quit medicine after marriage/childbirth also supported the above-mentioned theory and associated literature^{10,11}; 26.3% of respondents personally knew of women who were forced to quit medicine after getting married, 8.5% had heard of such stories, whilst 8 participants knew women who were dictated either by their husbands or in-laws to quit clinical training, such as surgical residencies, and teach in medical schools, which is considered more family-friendly. A common notion seen in the response was that if women do not adapt their careers to suit their domestic responsibilities, they could be threatened by their husbands or in-laws to be divorced. In such circumstances, their choice to work is consequently eliminated. Additionally, a reason for forcing women to quit was that their 'biological clocks were ticking', which refers to the belief in Pakistani society that a women should focus on bearing and upbringing children during the early years of fertility.^{10,11,34,35} This perception is not exclusive to Pakistan, and is part of the reason why some developing countries have high rates of women who have early arranged marriages.³⁶

While increasing uptake of women to study medicine appears to be a sign of progression and enlightenment in a society with archaic norms, unfortunately, a critical eye will reveal that this has troublesome reasons and far-reaching implications. Independent to true insight of the difficulties and realities of being a doctor, a career in medicine is considered prestigious and is highly encouraged in Pakistani culture. However, often parents wrongly force children into the profession in the name of

'family honour'.^{10,11} Reports have revealed that Pakistani high-school students, both males and females, who had openly admitted to having no desire to pursue a career in medicine, were pressurised by their parents who cited success and societal prestige as primary reasons.¹¹ Parents have scolded daughters with a liking for the arts to admitting such in front of relatives, and forced them to express an interest in becoming a doctor in front of house guests and relatives as this is deemed more respectable.¹¹

With half of the female students never making it to clinical practice, radical strategies have been attempted, including the regulatory body for doctors, which once recommended placing a quota to limit the number of women in medical college to 50% per cohort.^{7,37} This decision, however, was overturned by a high court after it was legally challenged. Such strategies are dangerous as they merely attempt to link the chronic physician shortage with female attrition. The underlying problem of social and cultural discrimination against women remains and continues to impact retention of female graduates.

Efforts must be channelled to retain women in the profession rather than villainising them. One strategy may be mandatory service after graduation for a limited number of years or introducing medical school interviews in Pakistan. The former is useful as we believe this may deter parents from unduly sending their daughters to medical school for reasons such as social prestige or a backup to a failed marriage. In addition, medical school interviews are not common practice in the vast majority of medical schools in Pakistan, and while the role of interviews in the admissions process has been widely debated,^{38,39} they may play a role in exposing those who have been influenced to pursue medicine for the wrong reasons. All women need to be given appropriate support from their academic institutions and legal bodies should they face abuse or threats by family or in-laws regarding their careers.

Mohsin et al.¹⁰ and Moazam et al.¹¹ discussed in detail the socio-cultural factors at play that hinder women from practising medicine after graduating, and provided a theoretical framework that supported the thematic analysis of stories of women who were forced to quit medicine following marriage or childbirth by their husbands or in-laws (Figure). Long-term cultural changes are required, and improving literacy rates is essential to this as progressive education can transform even the strongest of cultures in society⁴⁰. This may be especially true in tribal and conservative areas where such cultures predominate, and literacy rates are not only low, but modern education is actively opposed^{1,5}.

The prevalence of bullying in medical schools in Pakistan is estimated to be 52% of all students, with half of those being at the receiving end getting bullied at least once a month or more often¹⁷. As suggested previously in the literature, one confounder to such figures is that they are self-reported and can be over-representing²⁶. For example, considering upsetting situations which are a natural part of training (such as being told that one is under-performing) to be bullying⁴¹. Rather than asking students if they believed they had been discriminated against or bullied by a specific definition due to their gender, the current study sought to report specific examples of discrimination or bullying in medical schools (Table 4). While the high prevalence of such behaviour was unfortunate and alarming, it supported previous studies in Pakistan^{16,17}.

Male medical students were significantly more likely than females in the current study to experience bullying in medical school. Interestingly, literature shows that while consultants were the most likely perpetrators, female medical students were more likely to be bullied by nurses.¹⁷ From a 2008 multicentre study in Pakistan, 88% medical students stated that their institution lacks specific policies regarding bullying and harassment.¹⁷ With the current results 12 years later still showing high rates of such behaviours, it is obvious that strong institutional disciplinary policies against bullying and support for victims are lacking and are strongly needed. The current findings and local literature^{16,17} are in sharp contrast to Western studies where, predominantly, women are more likely to report bullying than men.^{14,23,42-45} This warrants further investigation as the disparity may well be because in traditional Islamic societies, religiously, women are to be offered greater protection and are to be treated with more compassion, unlike men who, in Asian cultures, are expected to have a 'thicker skin' and a higher tolerance for rude behaviour because that is considered macho.⁴⁶

Gender discrimination is more common in medical school than bullying is, with 78% of medical and dental students surveyed reporting to be victims of gender discrimination¹⁶. While a common perception by medical students in Pakistan is that female medical students are likely to be the victims of gender discrimination by male perpetrators, it has been shown that, unlike bullying, both males and females have equal reported rates of gender-based discrimination and that in the overwhelming majority of cases (70.8%) women happen to be the perpetrators¹⁶. One rationale suggested has been that the advancement of women into leadership positions may not reduce discrimination as individuals in positions of power can be abusive regardless of gender¹⁶. This does

not explain a disproportionate prevalence of female perpetrators, and warrants further investigations.

Finally, the current study shows that women were more likely to be victims of sexual assault than men, with 8.2% reporting sexual assault and a further 7.3% women in the current study preferring not to answer. In a study conducted in Pakistan to assess the extent of sexual harassment of female nurses, 21.1% reported having experienced verbal sexual harassment and 16.9% reported having experienced physical sexual harassment. Male physicians were identified as the major perpetrators, followed by patients and their relatives.⁴⁷ A similar trend has been reported from the developed world. A large study of German medical students showed 87.6% of sexual harassment victims were females and 8.5% of respondents in that study suffered forced sexual contact and rape.²¹ A 2021 study from Belgium, investigating sexual violence in medical students and trainees, reported the rate of sexual violence to be 48% of all respondents.⁴⁸ The reported prevalence of sexual harassment from a Swedish medical school study was 22%, but the reported rate of sexual assault was 9%, which, in line with the current study, again had women getting disproportionately affected.⁴³ It must be ensured that such women are supported and strict institutional policies are in place to investigate these claims, support the victims, and deliver legal justice.

Tomorrow's doctors are today's medical students. Thus, discrimination and bullying must be stopped at the grassroots level of medical school to ensure that the vicious cycle of abuse does not continue. Bullying and discrimination can prevent doctors from reaching their full potential and delivering safe care.^{49,50} Lack of accessibility to high-quality, safe healthcare by inequity from biases and discrimination prevents national development.⁵¹

The current study, to the best of our knowledge, is the first multicentre study in Pakistan to provide baseline evidence for the systemic issues being faced by medical students regarding gender bias and bullying. In addition, unlike previous studies, the number of responses from private-sector and public-sector medical institution is nearly equal. This representation is extremely important as the number of private medical institutions has greatly increased in recent years. Pakistan has extreme wealth inequality, with a median monthly income of US\$430.^{52,53} The government subsidises public medical education, costing less than US\$1,000 per year, with options for scholarships and financial help. Private medical institutions, on the other hand, are 10 to 80 times more expensive and, as such, can be argued to mainly represent

a socio-economically wealthy student body. By sampling public and private medical institutions, the study included responses from students from very different backgrounds.

Limitations regarding data collection are that the institutions from which data was collected had predetermined individuals from each institution who disseminated the questionnaire through university emails, social media group chats, and individual messaging to classmates to meet a predetermined sample size. The study could have no track of the response rate, and while many avenues were utilised, it is a possibility that certain students did not receive the study survey, and/or those affected by the topic may be more likely to respond by over-estimating reported rates. Additionally, while the study demonstrated gross issues broadly, each identified issue needs to be explored in further detail more objectively to gain further understanding. This requires mixed-methods approaches, including validated survey tools to better assess a specific topic, such as sexual harassment and assault. Any future surveys inspired by the current data should be standardised to improve the quality of data being obtained. Finally, interviews of students need to be conducted to understand gender bias and discriminatory behaviour, and interviews of medical school faculty need to be carried out to understand better the variation in the policies against abuse, bullying, harassment and support provided by individual institutions. In addition, social frameworks should be employed to understand behaviours better to make amendments where necessary

Conclusion

In the socio-cultural context of Pakistani society, gender bias, discriminatory behaviour and bullying were reportedly common in medical schools. Men were more likely than women to suffer from various acts of bullying. Some female medical graduates have even been forced to either quit practising medicine or change career paths to more 'family-friendly' specialities by their husbands and in-laws. Strong socio-cultural factors influence such issues, and deserve further exploration. Awareness among medical schools' managements and policy-makers of such issues is essential so that these may be addressed systemically.

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