

# GENDER BIAS DURING ASSESSMENTS IN UNDERGRADUATE MEDICAL EDUCATION: A QUALITATIVE STUDY

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## ABSTRACT

**Objective:** To explore the perceptions of students and faculty about gender bias during assessments in undergraduate medical education.

**Material and Methods:** The study was conducted at a Public and Private Medical College in Peshawar, Khyber Pakhtunkhwa Pakistan, from June 2020 to October 2020. It was a qualitative study with a phenomenological approach in which, 4 focal group interviews with undergraduate medical students and 10 individual interviews with faculty members were undertaken by using a validated semi-structured interview guide. The interviews were recorded and transcribed verbatim. The thematic analysis of the data was done where codes were developed and arranged in different categories giving rise to discrete themes. Data triangulation from students and faculty results was done for convergence and correspondence to increase the credibility and authenticity of the study.

**Results:** Out of 24 students and 10 faculty members, half of the participants were females who shared their perceptions about gender bias in medical education. The analysis revealed 30 codes that were labeled and collated into 9 categories. The themes deducted from these categories were Lack of awareness, discriminatory attitude, the societal projection of the phenomenon, and the gendered climate in medical education.

**Conclusion:** Most of the students are not aware of the concept of gender bias. The study emphasizes that bias is a natural phenomenon but society and culture multiply the effect of this phenomenon. Most of the participants do believe that the assessment environment is made more comfortable and positive for female students. The study also revealed that gendered cultures of learning and assessment still exist in Gynaecology/Obstetrics and General Surgery departments.

**Keywords:** Gender bias, Assessment, Undergraduate Medical Education.

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## INTRODUCTION

The general perception of medical institutions is that these are prodigious places where students get high-level academic knowledge, skills, and behaviors focusing on justice, respect, and equality.<sup>1</sup> The teaching environment plays an important role in learning and developing a positive professional identity. These learning perspectives significantly influence the graduates' beliefs and attitudes in their future professional and personal life.<sup>2</sup>

Any educational system needs to evaluate each student's performance objectively and without bias. Any

discriminatory action may have a long-term impact on the personal and professional development of the future generation.<sup>3</sup> In educational research, a broad range of variables have been established that affect the teachers' judgment of student evaluation, including age, race, gender, ethnicity, financial status, and physical attractiveness. But society also holds stereotypic assumptions regarding boys' and girls' academic strengths and weaknesses.<sup>4</sup>

A significant change has been observed in the gender composition of medical institutes in the last few decades. It is becoming increasingly important as the number of women enrolled in medical Schools rises every year. Female representation accounts for more than half of the applicants in American and Canadian Medical schools, since 2002.<sup>5</sup> Similarly, in Pakistan, female representation is nearly sixty-five percent of registered medical college students, with the numbers increasing every year.<sup>6</sup>

Undergraduate medical students are very much exposed to discrimination, bias, and harassment as being at the bottom of the hierarchy of the medical profession.<sup>4</sup>

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So, the establishment of a secure, unbiased environment should be a primary objective for all medical institutions.<sup>5</sup> Medical educators must realize the existing gender disparities in medical institutions to improve the curriculum, assessment, and training that can produce the top potential medical professionals.<sup>7</sup> Medicine is gender blind, and so should medical education.<sup>8</sup> The concept of gender bias within medical education has gained significant attention, though valid and reliable trials are needed to observe and report this phenomenon.<sup>9</sup> There has been inadequate data on gender discrimination in humanities generally and particularly in medicine. Previously, research has been conducted on the different subjects of gender discrimination as bullying, harassment, low career, and research opportunities for female medical students, including in Pakistan, but very few studies have been carried out to assess the prevalence of gender bias in undergraduate medical students' assessment.<sup>4</sup>

**MATERIALS AND METHODS**

The study was conducted at a Public and Private Medical College in Peshawar, Pakistan, from June 2020 to October 2020. A qualitative research design with a phenomenological approach was employed. This study included year 5 MBBS students and faculty with more than 2 years of teaching experience. Participants were purposively selected through the maximum variation sampling technique. Data was collected through four focused group Interviews with year 5 medical students and ten individual interviews with faculty as there was no Assistant Professor available in the Surgery and Gynaecology/Obstetrics departments of the Private Medical College see Fig 1. A semi-structured interview guide was developed and validated by subject experts and a pilot study was carried out. Consent from the participants was obtained and anonymity and confidentiality were ensured. The interviews were recorded (via cell phone) and transcribed verbatim. The thematic analysis of the data was done by Braun & Clarke method.<sup>10</sup>

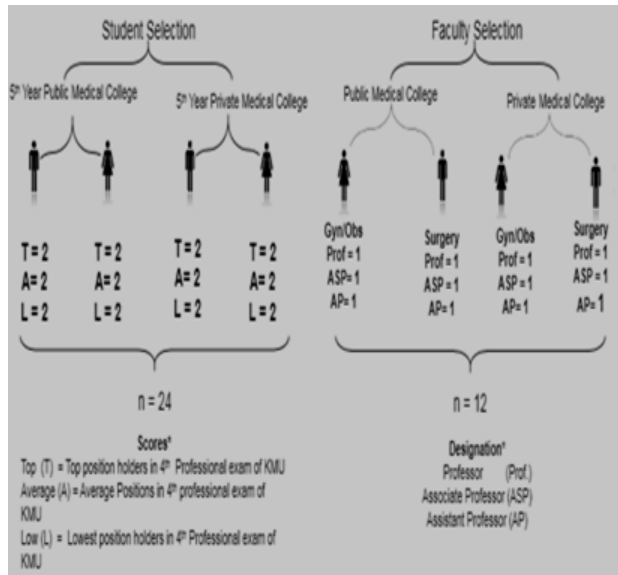


Fig 1: Sampling Method

**RESULTS**

Out of 24 students and 10 faculty members, half of the participants were females who shared their perceptions about gender bias in medical education. The analysis revealed 30 codes that were labeled and collated into 9 categories. The themes deduced from these categories were Lack of awareness, discriminatory attitude, the societal projection of the phenomenon, and the gendered climate in medical education as shown in fig 2.

**DISCUSSION**

The primary focus of this qualitative research was to highlight the gender issues in assessing undergraduate medical students. Gender is a sociocultural construct and is a much-discussed psychological issue. This social con-

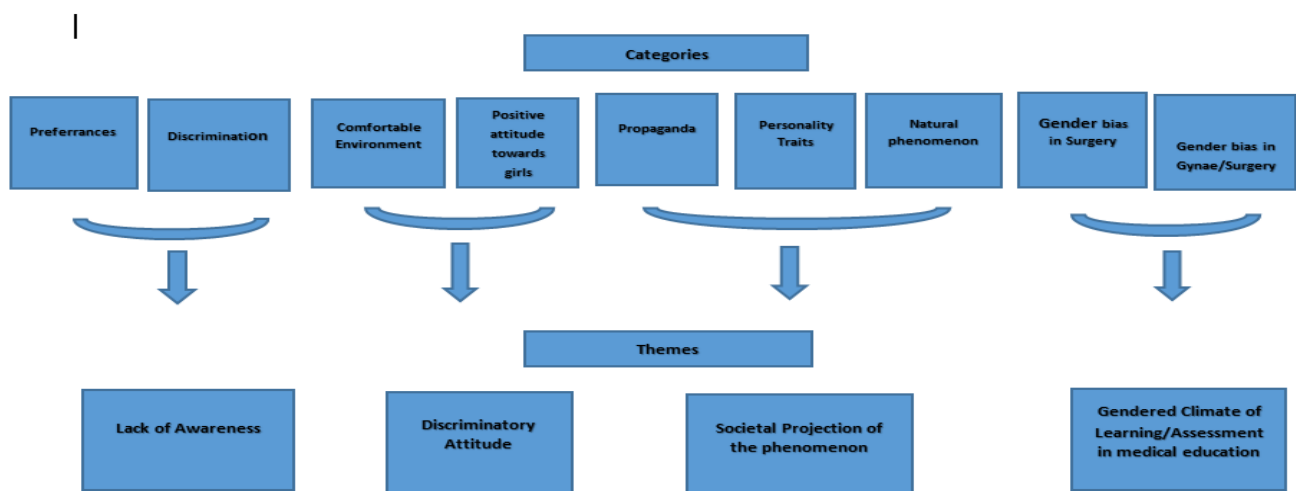


Fig 2: Thematic Analysis of the Data

struct changes continuously over time and varies across different cultures.<sup>11, 12</sup> We live in a sociocultural context, so prevailing social stereotypes influence our perceptions and opinions. It is not easy to isolate yourself from the influence of society as people generally don't readily accept challenges and strive for change.<sup>13, 14</sup> Over the last few decades, a significant decline has been observed in gender prejudice, particularly among cultured societies. However, still, these unconscious gender biases are exhibited in communities even by egalitarian individuals.<sup>15</sup>

The majority of the student participants did not apprehend the concept of sex and gender. They didn't comprehend the concept of gender bias. The only perception inculcated in their mind was that preference is given to girls irrespective of their capabilities and aptitude in the educational environment.

**“... preference to a female based on the gender ideology rather than based on merit....”**

This study highlighted that the assessment environment was made more comfortable and positive for girls as compared to boys. The male students also presumed that female students' physical appearance and personality traits helped them get higher grades. The girls did not have such apprehensions for boys, and they believed that this concept of favoring female students in academics is ingrained in society. Whereas the senior faculty didn't believe in gender bias in assessing undergraduate medical students. However, the junior faculty still believed that gender bias does exist in undergraduate medical education. This difference of opinion among senior and junior faculty reflected that age and professional maturity do have an impact on such sensitive issues.

One participant expressed, **“In our community, there is a functional division between male and female. People don't understand the phenomenon of gender and sex. They take it as the same. But I think there is clear discrimination between males and females in undergraduate education.”**

The male students comprehended that girls were usually assessed in a more comfortable environment by male assessors. In contrast, faculty behavior towards boys was stern and firm. One participant commented, **“Male teachers make the examination environment comfortable for females but we get marks so it does not bother us so much. Mam, I don't agree that marks are unfair. I got deserving marks. But if examination environment becomes friendly for us too. We could perform better.”**

As far as the personal experiences of gender bias, few students including, boys and girls, had experienced such discrimination during undergraduate medical education but most of the students perceived this phenomenon that female students get more marks from their colleagues and senior students. One student commented, **“I have**

**not experienced it myself. Boys always complain of this bias because this concept is inculcated in their minds. It exists in our culture. It has been inculcated in their minds that females get more marks.”**

Whereas faculty believed that attraction towards the opposite gender is a natural phenomenon, it usually did not affect the assessment process. The majority of the participants perceived that our social context had a major role in creating this perception, **“I accept this bias as a natural phenomenon. But the culture, especially our culture, multiplies the effect of this phenomenon”**

Wiskin et al. investigated the possibility of gender bias in a valid oral interactive contextualized examination of undergraduate final year medical students. They discovered that female students outperformed male students across the field in all stations, which had a minor but significant impact on their overall academic achievement.<sup>11</sup>

Ozlem Midik et al. found the same perception among undergraduate medical students in their study. According to this study, the majority of the male students presumed that gender had a significant impact on examination success. The male students firmly believed that female students used their sexuality to pass classes.<sup>15</sup> Another study by Thomas Delahunthis et al. suggested that the perception of gender bias was due to typical gender stereotyping and gender schemas prevalent in society regarding female academic achievement. The psychologists identified that stereotypical labels had an essential role in developing specific schema and perceptions about any social phenomenon.<sup>16</sup>

D. Atyana and S. Olga also reflected on the correlation between beauty and advantage during college grades in their study and estimated that there were no significant relationships between college scores and attractiveness.<sup>17</sup>

The majority of the students reflected a gendered culture of learning in the surgery and Gynaecology/Obstetrics department in this study. These students described their personal experiences regarding learning and assessment based on gender in these two departments. The faculty did not believe in the gendered culture of learning and assessment in the Surgery and Gynaecology/Obstetrics departments because of the reforms in medical education and structured examination pattern.

One student expressed her views as, **“...being a female, you should know it. I think knowledge expectation from females about Gynaecology is more as compared to male students. Similarly, junior and senior faculty guide us that Surgery is a male-dominated domain. Females cannot perform well in this field. We have been given different examples that females can't perform in this domain. .... Think it over.”**

In contrast, the faculty felt that the gendered culture in Surgery and Gynaecology/Obstetrics had declined due to medical education reforms and structured examination patterns. One respondent commented, “... **in TO-ACS, every student has to perform. So, we expect from both genders in these specialties.**”

Mimi Deng et al. assessed female medical students' knowledge, attitude, and practices regarding gender discrimination in Surgery by using a psychometric survey instrument in their study and discovered a highly prevailing perception of male dominance in Surgery among medical students.<sup>18</sup>

Ozlem Midik et al. reported in their study that most female student participants communicated that Surgery was more suitable for male students and females could not do Surgery, and College administrators intended to see more male students in Surgery.<sup>15</sup>

Akmal Z. Mohd Zahid et al. highlighted the gendered learning culture in the Gynaecology/Obstetrics clinical setting. Their study showed that male students acquired inadequate learning experience in Gynaecology/Obstetrics clinical setting and experienced higher levels of discrimination by teachers in the Gynaecology/Obstetrics department. This study proposed to reduce educational discrimination experienced by boys in undergraduate medical education to improve their learning opportunities in Gynaecology/Obstetrics domain.<sup>19</sup>

This study has established helpful information on the perceptions of gender bias in our educational environment but due to the subjectivity of the phenomenon, this study should be replicated in other medical institutes of the province in a different context to have a broader vision of this phenomenon that would help the medical institutes and educationists to devise the mechanism to counteract this issue.

## CONCLUSION

Most of the students are not aware of the concept of gender bias as they perceived it as preferring female students in grading during assessment based on their physical attractiveness. The study emphasizes that bias is a natural phenomenon but society and culture multiply the effect of this phenomenon. Furthermore, these gender-specific concepts, beliefs, and perceptions are supported and communicated by society. Most of the participants do believe that the assessment environment is made more comfortable and positive towards female students which promotes this concept of favoring female students in assessments. The study also revealed that gendered culture of learning and assessment still exists in the Gynaecology/Obstetrics and Surgery domains of medical education.

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#### AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under

**Aliya B:** Concept, Design, and Proofreading

**Jamil B:** Acquisition and critical review

**Ahmed F:** Analysis and interpretation of data

**Kashif L:** Review and writing

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.



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