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Obstetrics and gynecology patients' perceptions about bedside teaching at a Saudi teaching hospital

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Abstract:

BACKGROUND: Bedside teaching (BST) is a crucial component of medical education. It entails the interaction of students with patients in outpatient clinics and inpatient wards under the supervision of their tutors in order to improve the clinical skills of the students and, ultimately, patient outcomes. This teaching relies heavily on patients' willingness and cooperation. The aim of this study was to assess the perception of Obstetrics and Gynecology (OB/GYN) patients regarding the presence and participation of medical students in BST.

MATERIALS AND METHODS: A cross-sectional survey was conducted among OB/GYN patients at the outpatient clinics and inpatient wards at King Fahd Hospital of the University (KFHU) in Al-Khobar from January 1 to April 30, 2023. Data were collected online through the Google Drive survey tool using a validated and pilot tested questionnaire. Data were analyzed utilizing SPSS version 26.0. Chi-squared test was employed to test for association between two categorical variables. Multiple logistic regression model was used to determine variables associated with positive attitudes.

RESULTS: A total of 507 patients completed online questionnaire. A highly positive patients' attitude was observed toward the presence and participation of medical students during BST with a mean score of 81.8 ± 10.4 . The acceptance rates were higher for female students compared to male students (91.9% vs 61.7%) and for senior doctors compared to junior doctors (89.9% vs 58.9%). Patients who came to the outpatient clinics were also more likely to accept students' presence than those who went to hospital wards. Age, marital status, and previous clinic visits were positively associated with the acceptance level of the presence and involvement of medical students in BST without a significant difference.

CONCLUSION: In general, patients had a good perception of medical students' engagement in their care and that the gender of the medical students/doctors and clinical setting could affect this perception. Raising patients' awareness of their valuable role in male medical students' and doctors' education should be raised, as this will increase their acceptance during BST.

Keywords:

Bedside teaching, medical education, obstetrics/gynecology

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Introduction

Bedside teaching (BST) plays a significant role in enhancing medical education.^[1] This was emphasized a long time ago by Sir William Osler (1849–1919), who mentioned

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that "Medicine is learned by the bedside and not in the classroom."^[2] The attention of curriculum developers in several medical schools worldwide was drawn to the importance of BST, and it was thus made a fundamental part of the medical curriculum in diverse universities. The patients with the teachers, and medical students constitute

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the cornerstone of BST.^[3,4] Because patients serve as one of BST's main pillars, their participation in the learning methods is important and their reluctance to participate can hinder the effective delivery of BST.

The acceptance level of the students' presence during BST has been associated with various factors, including patients' gender, age, professional status, marital status, religion, students' nationality, and the department in question. In this regard, the highest refusal rate was found in female patients, patients younger than 40 years old, unemployed, and unmarried patients.^[5] Furthermore, the student factor played a significant role in which the least acceptance rate was for international students.^[6] Furthermore, the acceptance level was associated with certain specialties. In general, pediatrics patients were more likely to accept students' presence in the clinic, whereas Obstetrics and Gynecology (OB/GYN) patients were more likely to refuse students of both genders.^[7] However, patients in OB/GYN were more likely to accept females, whereas patients in the surgery department reported a higher acceptance level of male students.^[7] In addition, nationality and religion can be significant factors affecting patients' attitudes toward medical students. It was found that Kuwaiti and Muslim patients tended to refuse the participation of medical students.^[7]

Several studies have indicated a general acceptance of the presence of medical students as one of the significant pillars of BST.^[8-10] Only a limited number of studies addressing this concept have been done in Saudi Arabia.^[11,12] Studies done before the commencement of national transformation, especially after the development of "Vision 2030"^[13,14] in 2016, also found cultural changes that mostly affect how patients perceive things. In addition, this study focused on general women's perceptions in Saudi Arabia.^[12] The current study, on the other hand, specifically sought patients with past BST experience from OB/GYN outpatient clinics and inpatient wards. Therefore, this study intends to add to the body of knowledge on OB/GYN patients' perceptions of BST. Accordingly, the aim of this study was to assess the perception of patients of the OB/GYN toward the presence and participation of medical students during BST in a Tertiary Teaching Hospital in Saudi Arabia.

Materials and Methods

This descriptive cross-sectional study was conducted from January 2023 to April 2023. The study involved all patients who came to the Department of OB/GYN as outpatients in the clinic or inpatients in the wards at King Fahd Hospital of the University in Al-Khobar, Saudi Arabia. Ethical approval was obtained from

the Institutional Review Board (IRB) vide Letter No. IRB-UGS-2022-01-472 dated 21/11/2022, and informed written consent was taken from all participants in the study.

The study was based on a survey used to assess the OB/GYN patients' perception and attitude toward medical students' presence and participation during BST. Perception of the OB/GYN patients of the presence and participation of medical students in BST. Independent Variables: age, educational level, place of residence, marital status, clinical setting of care (clinic/ward), previous participation in BST, reason for attending the hospital, and gender of the medical students/doctors.

Patients at the outpatient clinics, inpatient wards, and ultrasound clinics were able to participate in the study. Patients who refused to participate, had no experience with BST, or had presented to the emergency department were excluded from the study.

The sample size was calculated based on the prevalence of Acceptance regarding BST using the following parameters: *P* (prevalence of acceptance) 81.3%.^[11] Confidence level 95%, absolute precision 4%. The minimum sample size came to 365 participants, and 507 patients were recruited for this study.

The study utilized a validated online questionnaire which was developed based on the Association of Medical Education in Europe guidelines^[15] and adopted by a previous study.^[16] Permission to use the tool was granted by Carey *et al.*^[16] The survey consisted of 25 items in two main sections. The first section comprised nine items on the patient's sociodemographic and personal data, including age, nationality, education level, place of residence, marital status, level of income, clinical setting of care (clinic/ward), the reason for attending the hospital, and previous participation in BST. The second section, consisting of 16 items, focused on the patient's perception of BST. The answers to the items were based on Likert Scale, in which 1 represented strongly disagree and 5 represented strongly agree. The responses were divided into positive (strongly agree and agree) and negative (strongly disagree and disagree) attitude for each item, and the overall attitude was considered "Positive" if the sum of 16 items was ≥ 64 out of 80. This 64 was arrived at as 4-Agree and 5-Disagree were taken as a positive attitude for single item.

The study items were translated from English into Arabic. The translation was then validated by a third-party translator who proceeded to translate the provided Arabic tool into English and then compared it to the original tool. The content validity index was calculated by distributing the Arabic form to ten expert

jurors, five from the OB/GYN Department and five from the Medical Education Department. The jury received the survey items and reviewed them on their relevance and clarity. As a result, some modifications were made to make the items more compatible with the purpose of the study and the culture of the society. The scale content validity index/average was 0.95, showing a high content validity.

Once the tool had been reviewed and modified, a pilot study was conducted to assess the clarity of the items, the reliability of the tool, the estimated time required for the completion of the tool, and identify any problems that might interfere with the data collection process.^[17] The pilot study was performed on a sample size of 42 patients, who represented approximately (10%) of the proposed sample size.^[18] The tool required approximately 5–7 min for completion. The collected data at this stage were excluded from the data of the study. Two items were removed from the original questionnaire which increased its reliability values calculated on Cronbach's alpha to be 0.757.

Data were collected online through the Google Drive survey tool for easier accessibility.^[18] Participants were informed that their participation was voluntary, that nonparticipation would in no way affect their treatment, and that the collected information would be kept confidential. Each patient filled out the survey on an electronic device by a mobile phone or iPad. Technical support was provided by the researchers in the event of difficulties without interfering with the responses. Completion of the form required approximately 5–7 min. All the survey items had to be completed before submission.

Data were analyzed utilizing the Statistical Package for the Social Sciences-SPSS version 26.0 (SPSS, IBM Corporation, NY, USA). Data were coded and tabulated, and statistical analysis was done. Numbers and percentages were used to represent categorical variables, whereas mean and standard deviation were used to show continuous variables. To determine whether there was an association between two categorical variables, a Chi-squared test was employed. A $P \leq 0.05$ was regarded as statistically significant. In univariate analysis, the cutoff P value was kept at 0.25. Those variables showing $P \leq 0.25$ were run in multivariate model, and the significance level kept at 0.05. Odds ratios (ORs) and 95% confidence interval (CI) were calculated.

Results

A total of 507 OB/GYN patients, who visited KFUH during the study period, filled out the survey. The

mean age of participants was 34.4 years; approximately two-thirds ($n = 324, 63.9\%$) were >30 years and the majority were Saudi ($n = 455, 89.7\%$), married ($n = 420, 82\%$), and residents in the Eastern Province ($n = 496, 97.8\%$). Regarding the level of education, most participants had a college degree ($n = 314, 61.9\%$), followed by a high school degree ($n = 126, 24.9\%$), and the minority ($n = 22, 4.3\%$) had an elementary school education. Less than half ($n = 234, 46.2\%$) of the participants came to the hospital with gynecological issues and ($n = 199, 39.3\%$) for pregnancy follow-up, while $n = 74, 14.6\%$ attended the hospital for postnatal care. Most of the studied patients ($n = 402, 79.3\%$) attended OB/GYN clinics, and the remaining $n = 105, 20.7\%$ were admitted to the OB/GYN ward. Most patients ($n = 320, 63.1\%$) had previously participated in BST in the clinic, 101 (19.9%)

Table 1: Characteristics of OB/GYN patients at King Fahd Hospital of the University (KFHU), Al-Khobar, 2023 (n=507)

Characteristics	N (%)
Age (years), mean±SD	34.4±8
≤30	183 (36.1)
>30	324 (63.9)
Nationality	
Saudi	455 (89.7)
Other	52 (10.3)
Education	
Elementary	22 (4.3)
High school	126 (24.9)
College degree	314 (61.9)
Other	45 (8.9)
Residence	
Eastern	496 (97.8)
North	4 (0.8)
South	4 (0.8)
Central	2 (0.4)
Outside	1 (0.2)
Marital status	
Married	420 (82.8)
Unmarried	87 (17.2)
Level of income	
<5000	158 (31.2)
5000–10,000	203 (40.0)
>10,000	146 (28.8)
Reason for attending the hospital	
Gynecological issues	234 (46.2)
Pregnancy follow-up	199 (39.3)
Postnatal care	74 (14.6)
Clinical setting of care (clinic/ward)	
Obstetrics and gynecology clinic	402 (79.3)
Obstetrics and gynecology ward	105 (20.7)
Previous participation in BST	
Clinic	320 (63.1)
Ward	101 (19.9)
Both	86 (17.0)

SD=Standard deviation, BST=Bedside teaching

Table 2: Perceptions of OB/GYN patients regarding medical students' involvement in bedside teaching at King Fahd Hospital of the University (KFHU), Al-Khobar, 2023 (n=507)

Questionnaire items	Strongly agree N (%)	Agree N (%)	Neutral N (%)	Disagree N (%)	Strongly disagree N (%)
BST is an enjoying experience	159 (31.4)	165 (32.5)	108 (21.3)	51 (10.1)	24 (4.7)
I feel satisfied when I participate in BST because I help in educating future medical professionals	215 (42.4)	192 (37.9)	62 (12.2)	28 (5.5)	10 (2.0)
I believe that incomprehensible medical vocabulary used during BST should be clarified	290 (57.2)	139 (27.4)	35 (6.9)	32 (6.3)	11 (2.2)
I am not supposed to participate in BST when I am anxious or ill	237 (46.7)	163 (32.1)	49 (9.7)	45 (8.9)	13 (2.6)
I possibly gain more knowledge about my condition when I participate in participating in BST	157 (31.0)	185 (36.5)	66 (13.0)	70 (13.8)	29 (5.7)
It is important to be sure of what the students would do with the information that I provide during BST	181 (35.7)	163 (32.1)	53 (10.5)	71 (14.0)	39 (7.7)
It is important that the students request my verbal consent before I participate in BST	323 (63.7)	132 (26.0)	26 (5.1)	21 (4.1)	5 (1.0)
I feel glad when I assist in the education of junior male physicians	141 (27.8)	172 (33.9)	70 (13.8)	61 (12.0)	63 (12.4)
I feel glad when I assist in the education of junior female physicians	281 (55.4)	185 (36.5)	26 (5.1)	11 (2.2)	4 (0.8)
I feel glad when I assist in the education of male medical students	142 (28.0)	153 (30.2)	81 (16.0)	70 (13.8)	61 (12.0)
I feel glad when I assist in the education of female medical students	277 (54.6)	179 (35.3)	32 (6.3)	12 (2.4)	7 (1.4)
The team members should act professionally during BST	332 (65.5)	130 (25.6)	23 (4.5)	12 (2.4)	10 (2.0)
I should be able to refuse when I am asked to participate in BST	261 (51.5)	158 (31.2)	42 (8.3)	24 (4.7)	22 (4.3)
I feel proud that pregnant women have a special opportunity to assist in the education of male students on pregnancy during BST	167 (32.9)	170 (33.5)	98 (19.3)	47 (9.3)	25 (4.9)
I feel proud that pregnant women have a special opportunity to assist in the education of female students on pregnancy during BST	256 (50.5)	195 (38.5)	45 (8.9)	10 (2.0)	1 (0.2)
I feel glad to follow the doctor's instructions when I need to decide on my healthcare	297 (58.6)	168 (33.1)	28 (5.5)	12 (2.4)	2 (0.4)

BST=Bedside teaching

in the ward, and 86 (17%) had participated in both clinical settings [Table 1]. Concerning the participants' perception of medical students' involvement in BST, most participants (n = 324, 64%) showed a significant positive attitude toward medical student involvement in BST and described it as an "enjoyable experience" and they had had a "feeling of satisfaction" (n = 407, 80.3%). In addition, BST made more than two-thirds (67.55%) of the participants more aware of their condition than they had been previously [Table 2].

Regarding decisions on clinical care, the vast majority (91.7%) of respondents were happy to follow the physician's recommendation during the BST. The overall mean score of the patients' attitude to the presence and participation of medical students during BST was positive (65.45 ± 8.29), as shown in Table 3. A comparison between demographic variables with the total mean score revealed that all the variables (age, nationality, education, marital status, and level of income) displayed a positive mean score with no significant difference. However, a comparison of the variables related to the reason for attending the hospital for gynecological issues, pregnancy follow-up or postnatal care revealed a positive mean score with no significant differences. On the other hand, those who attended the OBGYN clinic had a significant positive mean score compared to those who attended the clinic (66.1 ± 8 and 62.8 ± 9,

respectively). In addition, those who had a history of previous participation in clinics had a positive mean score attitude toward BST (66.1 ± 7.9) compared with those in the wards (63.3 ± 8.7), with a significant difference.

Figure 1 illustrates that most scale items are categorized as accepted, including both strongly agree and agree, indicating that most participants (91.7% perception) were happy to adhere to the doctor's orders. In addition, many respondents emphasized that students should obtain their verbal consent before participating in the BST (n = 455, 89.7%) and that they should have the right to say "no" (n = 670, 82.6%) if they did not wish to participate. The vast majority of participants (n = 462, 91.1%) also valued professionalism in the BST. The responses demonstrated varying attitudes toward the gender (male and female) of junior physicians and medical students participating in BST. In this regard, the acceptability rate of women was significantly higher than that of men (91.9% vs. 61.7% and 89.9% vs. 58.2%, respectively).

A Chi-squared test followed by a multivariate analysis was used to study the association between the general characteristics of the participants and their acceptance level [Tables 4 and 5]. A significant difference was found based on the clinical context of care (clinic/

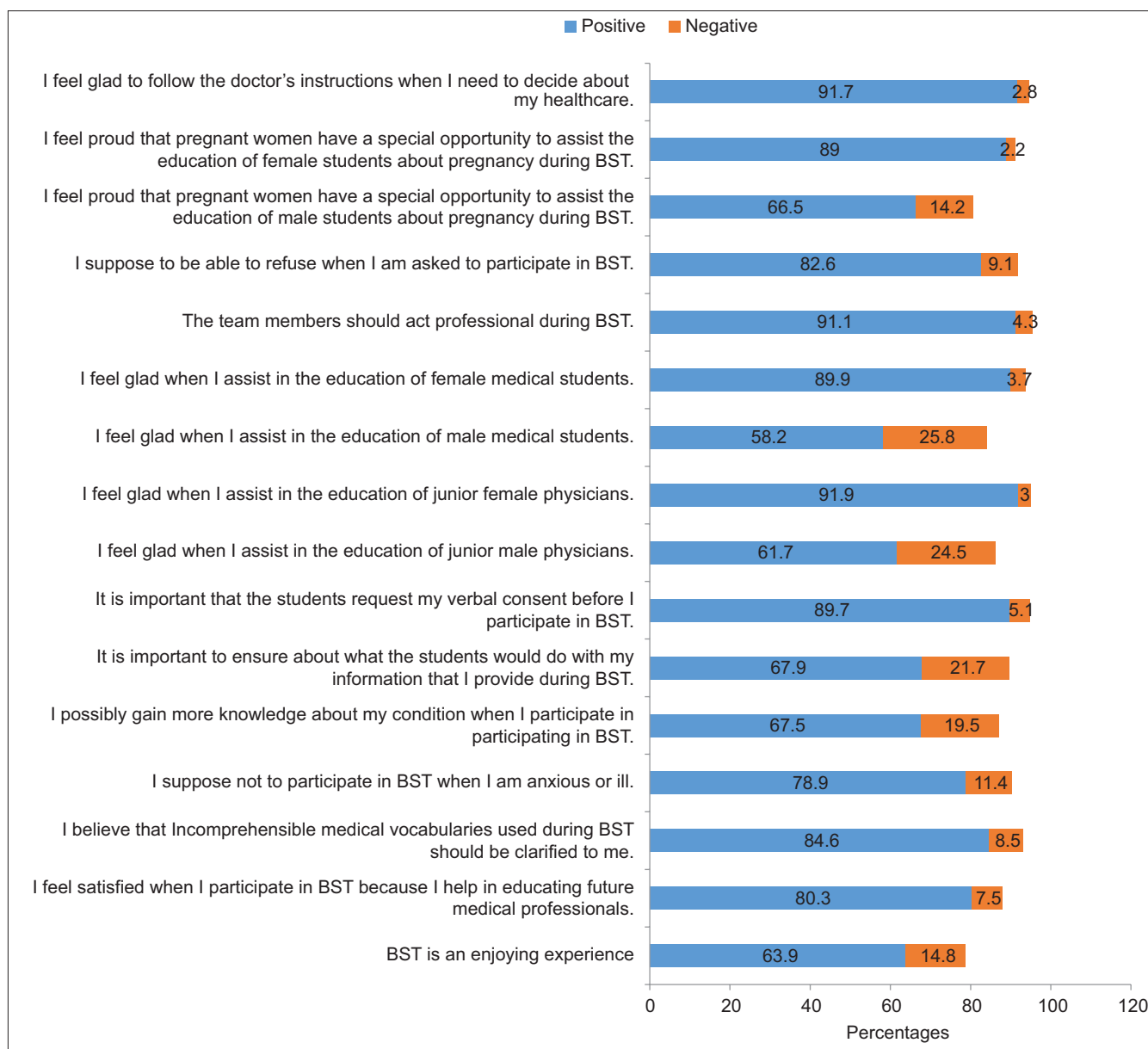


Figure 1: OB/GYN patients' responses to each item showing positive and negative attitude towards medical students' involvement in bedside teaching (n=507)

ward) ($P = 0.004$). Patients who attended the OB/GYN clinics were 1.9 times ($OR = 1.9$, $95\% CI = 1.2-2.8$) more likely to accept the students' presence in BST than those who presented in the OB/GYN wards, indicating that the clinical context of OB/GYN clinics was a significantly strong predictor. Concerning the other variables such as the reason for attending the hospital, and previous participation in BST, it was evident that those who had previously attended the gynecology clinic, and who had previously participated in the outpatient clinic BST were more likely to accept the presence of students (1.5, 1.11 times higher, respectively) than the other comparable variables without any statistical significance [Table 5].

Discussion

The acquisition of new clinical skills and interaction with patients are integral to a medical student's educational experience found in a variety of clinical, educational settings, such as BST.^[19] Without this interaction with patients, certain clinical skills might not be gained by the medical students. The aim of this study was to investigate the perception and level of acceptance of patients attending the OB/GYN Department regarding the attendance and participation of medical students during BST.

In general, the present study revealed a positive perception of the participation of medical students in

Table 3: Comparison of OB/GYN patients' attitude scores by demographic and general characteristics (n=507)

Demographic/general characteristics	Mean±SD	P-value
Age		
≤30	64.9±8.3	0.27
>30	65.8±8.3	
Nationality		
Saudi	65.3±8.3	0.251
Other	66.7±8.4	
Education		
Elementary	64.5±6.2	0.539
High school	66.3±8.2	
College degree	65.1±8.5	
Other	66±8.2	
Marital status		
Married	65.2±8.3	0.273
Unmarried	66.6±8.1	
Level of income		
<5000	66.5±7.8	0.28
5000–10,000	65.3±8.1	
>10,000	64.6±8.9	
Reason for attending the hospital		
Gynecology	66.1±8.1	0.18
Pregnancy follow-up	64.6±8.3	
Postnatal care	65.7±8.6	
Clinical setting of care (clinic/ward)		
Obstetrics and gynecology clinic	66.1±8	<0.001
Obstetrics and gynecology ward	62.8±9	
Previous participation in BST		
Clinic	66.1±7.9	0.012
Ward	63.3±8.7	
Both	65.7±8.9	
Overall (mean±SD)	65.45±8.29	

SD=Standard deviation, BST=Bedside teaching

BST, which was consistent with other studies, particularly on the attendance of students at the bedside.^[11,20,21] On the other hand, other studies showed a negative attitude owing to concerns for patients' privacy.^[22,23]

The most highly rated statements were related to assisting with the education of junior female doctors, adhering to the doctor's instructions, and acting professionally during BST. The present study revealed that patients had the desire to assist in the educational process of physician, perhaps because BST had been an enjoyable experience for them, and would urge them to encourage other patients to participate in BST.^[24] However, junior female doctors had the highest acceptance rate compared to male medical students and junior doctors. This is in agreement with other studies in which the gender of the medical students was the most significant aspect of the patients' acceptance, when female medical students were favored above male medical students.^[11,25,26] This can be attributed to the cultural belief that OB\GYN was exclusively a specialty for women. This was evident

in our study and also consistent with McLean *et al.*^[27] where cultural and religious beliefs affected the teaching process. In addition, the embarrassment of exposing one's sensitive body parts for physical examination might be a reason for the difference in accepting male care providers.^[27] Therefore, male students might be less fortunate than female students in terms of the opportunity for involvement in the learning process.^[12]

Furthermore, the participants were happy to follow the doctor's instructions when deciding on their healthcare. This might be evident as BST increases the interaction with the doctor, and effect a positive patient-doctor relationship, thereby building trust in the doctors' decisions.^[28]

Moreover, exhibiting a professional attitude during BST was highly rated by the participants. This could be explained by another study, which revealed that the participants believed that they were the best teaching material for students' learning.^[29] This suggests that with the participation of patients in BST, students learn to be professional as it offers an opportunity to demonstrate interpersonal skills^[30] and professional behaviors.^[31]

The current study found a significant relationship between the clinical setting of care (clinic/ward) and the acceptance level of BST. Patients who attended the OB/GYN outpatient clinic accepted the medical students' presence in BST significantly more than those who were in the OB/GYN inpatient ward. The reason for this high acceptance could be that students in the clinic have not much involvement with the patients in terms of physical examination and direct medical care, medical students as part of their learning process are more engaged with patients in the wards, which involves greater interference such as physical examination and direct patient care. This finding was similar to another study^[3] which highlighted minimal interaction with patients and limited involvement in their healthcare.

This study has some limitations. First, the majority of patients studied were from the outpatient setting, and fewer patients were recruited from the clinical ward. In addition, the majority of patients were Saudis, so it was not possible to study cultural differences between different nationalities. Besides, this was a single-center study; therefore, the generalizability of the findings is limited.

Conclusion

This study provides valuable insight into patients' perceptions of BST in the OB/GYN setting. The findings revealed that patients generally have a positive attitude toward medical students' presence and contribution to

Table 4: Univariate analysis: Comparison of OB/GYN patients' acceptance rates by demographic and general characteristics (n=507)

Demographic/General characteristics	Positive attitude* N (%)	Negative attitude** N (%)	P-value
Age			
≤30	104 (34.3)	79 (38.7)	0.312
>30	199 (65.7)	125 (61.3)	
Nationality			
Saudi	271 (89.4)	184 (90.2)	0.783
Other	32 (10.6)	20 (9.8)	
Education			
Elementary	13 (4.3)	9 (4.4)	0.252
High school	84 (27.7)	42 (20.6)	
College degree	177 (58.4)	137 (67.2)	
Other	29 (9.6)	16 (7.8)	
Marital status			
Married	249 (82.2)	171 (83.8)	0.63
Unmarried	54 (17.8)	33 (16.2)	
Level of income			
<5000	101 (33.3)	57 (27.9)	0.26
5000–10,000	123 (40.6)	80 (39.2)	
>10,000	79 (26.1)	67 (32.8)	
Reason for attending the hospital			
Gynecology	154 (50.8)	80 (39.2)	0.01
Pregnancy follow up	103 (34.0)	96 (47.1)	
Postnatal care	46 (15.2)	28 (13.7)	
Clinical setting of care (clinic/ward)			
Obstetrics and gynecology clinic	253 (83.5)	149 (73.0)	0.004
Obstetrics and gynecology ward	50 (16.5)	55 (27.0)	
Previous participation in BST			
Clinic	198 (65.3)	122 (59.8)	0.241
Ward	53 (17.5)	48 (23.5)	
Both	52 (17.2)	34 (16.7)	

*Positive attitude: Total score ≥64, **Negative attitude: Total <64. BST=Bedside teaching

Table 5: Multivariate analysis: Comparison of OB/GYN patients' positive attitude scores by demographics and general characteristics (n=507)

Demographics/General characteristics	OR	95% CI	P-value
Reason for attending the hospital			
Gynecology	1.5	0.9–2.6	0.126
Pregnancy follow up	0.85	0.5–1.5	0.56
Postnatal care [†]	-	-	-
Clinical setting of care (clinic/ward)			
Obstetrics and gynecology clinic	1.9	1.2–2.8	0.005
Obstetrics and gynecology ward [†]	-	-	-
Previous participation in BST			
Clinic	1.11	0.65–1.7	0.8
Ward	0.72	0.4–1.3	0.27
Both [†]			

*Positive attitude: Total score ≥64, [†]Reference categories. BST=Bedside teaching, OR=Odds ratio, CI=Confidence interval

their care. In addition, it highlighted factors that may influence their perception such as gender and the clinical context. These findings have important implications for medical education and clinical practice and highlight the need for healthcare professionals to be sensitive

to patients' preferences and rights during BST. Future research could explore the factors that influence patients' perceptions of BST further and their impact on patient outcomes.

To ensure the continued provision of high-quality medical education, it will be necessary to conduct further studies in different hospitals, emphasizing the elements that affect patients' views of BST and how these perceptions affect patient outcomes.

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Conflicts of interest

There are no conflicts of interest.

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