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## Gender bias in training of medical students in obstetrics and gynaecology: a myth or reality?

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## ABSTRACT

**Objective:** To investigate the experience of medical students during a clinical attachment in obstetrics and gynaecology (O&G).

**Study design:** A questionnaire was distributed to medical students who completed their O&G posting between August 2012 and August 2013. The first part included basic demographic details (age, gender, and ethnicity) and frequency of actual clinical experience; the second part explored students' perception of their training and their relationship with other staff, in particular feeling of discrimination by specified groups of medical personnel. The responses were recorded using a Likert scale and were recategorised during analysis.

**Results:** A total of 370 questionnaires were distributed, and 262 completed questionnaires were returned, giving a response rate of 71%. Female students had a significantly higher median (IqR) number of vaginal examinations performed 0.25(0.69) ( $p = 0.002$ ) compared to male students. Male students experienced a higher proportion of patient rejections during medical consultation, 87% vs. 32% of female students ( $p < 0.001$ ), a higher rate of refusal for clerking (71.4% vs. 57.5% of females,  $p = 0.035$ ) and a higher rate of patients declining consent for internal examination (93.3% vs. 67.6% of females,  $p < 0.001$ ). The majority of male students felt that their gender negatively affected their learning experience (87% vs. 27.4% of the female students,  $p < 0.001$ ).

Male students reported a significantly higher proportion of discrimination against their gender by medical officers ( $p = 0.018$ ) and specialists/consultants ( $p < 0.001$ ) compared to females but there was no discrimination between genders by staff nurses or house officers. A majority (58%) of female students stated an interest in pursuing O&G as a future career compared to 31.2% of male students.

**Conclusions:** Our study confirmed that gender bias exists in our clinical setting as male students gain significantly less experience than female students in pelvic examination skills. We also demonstrated that compared to female students, male students experience higher levels of discrimination against their gender by trainers who are medical officers and specialists/consultants. Trainers must improve their attitudes towards male students, to encourage them and make them feel welcome in the clinical area. We must minimize gender discrimination and educational inequities experienced by male students, in order to improve their learning experience.

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### Introduction

There has been a global decline in interest in obstetrics and gynaecology as a future career among medical students [1–3]. The reasons for this are multifactorial and complex. One thing is certain: there has been increasing concern about the quality of the

learning experience of medical students in the field of obstetrics and gynaecology, especially in clinical skills acquisition [4–6]. This is especially true for male medical students [4]. It has been shown that a negative undergraduate experience adversely affects students' interest in the specialty and their ultimate career choice [7].

Male students have been shown to have significantly less clinical experience than female students in key areas of obstetrics and gynaecology, such as passing a speculum and taking a cervical smear [6,8]. They also experience a higher rate of refusals by

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patients when compared to female students [1,6,7]. O'Flynn and Rymer surveyed 181 patients attending a gynaecology clinic and found that significantly more patients will allow female student to observe their genital area and perform a pelvic examination compared to male students [9].

Various factors contribute to negative learning experiences for male students. They are more likely to be embarrassed during pelvic examinations and they receive less support from tutors compared to female students [6]. There is also a suggestion that differences in the level of support from clinical staff such as staff nurses and midwives contribute to deficiencies in clinical training [8]. Apart from this, demographic and biographical factors such as cultural and religious background, and their own sexual experience, also influence the students' learning experience [8].

The purpose of this study was to investigate the experience of medical students during a clinical attachment in obstetrics and gynaecology. It was also designed to determine whether there are gender differences between the male and female students in the training experience, especially in performing intimate or pelvic examination.

## Materials and methods

This was a cross-sectional study conducted among medical students of a university in Klang Valley, Malaysia who completed their obstetrics and gynaecology posting between the months of August 2012 and August 2013. The method of teaching includes tutorials, seminars, lectures, bedside teaching, case presentations, outpatient and ward teaching, which were mostly delivered by appointed lecturers and clinicians.

The students were asked to fill in a questionnaire on the last day of their obstetrics and gynaecology clinical posting and the questionnaires were collected on the same day. The students remained anonymous, as no details were kept of the responders and non-responders.

The questionnaire developed was based on the published literature and modified to include questions relevant to the research question. Details on basic demographic (age, gender, ethnicity) were obtained. The questionnaire was divided into two parts. In the first part the students were asked to state the frequency of the actual clinical skills observed/performed. There were 11 questions in the second part of the questionnaire (see Appendix 1) which explored students' perception of their training and their relationship with other staff. We specifically asked if they felt they had been discriminated by specified groups of medical personnel. The students were also asked about their interest in pursuing obstetrics and gynaecology as a career in the future.

The responses were recorded using a Likert scale (never, rarely, sometimes and always) and the responses were recategorized during the analysis. The questionnaires were piloted on 15 randomly selected students prior to distribution for face validation.

Questionnaire data were captured and analyzed using SPSS v18. All continuous variables will be described using median (IQR), and categorical data as frequency (%). In order to compare characteristics of variables between males and females, the Mann Whitney test was performed for numerical values and the Chi-square ( $\chi^2$ ) test was used for categorical values. The results of Chi-square and *t*-test *p* values were recorded for each variable. A *p* value of <0.05 was taken as significant at 95% confidence interval. Before performing each of the hypothetical tests, the data were checked for normality and fulfil all the statistical assumptions.

**Table 1**

Comparison of median (IQR) of learning activities between gender.

Frequency of learning activities	Median (IQR)	
	Male	Female
Cases clerked per week	5 (3)	5 (2)
Cases presented per week	1 (1)	1 (1)
Speculum_examination observed	1 (4)	3 (4)
Speculum_examination performed	0 (0)	0 (0)
Vaginal examination observed	5 (8.5)	10 (7.3)
Vaginal examination performed	0 (0)	0 (0)

## Results

A total of 370 questionnaires were distributed, and 262 completed questionnaires were returned, giving a response rate of 71%. Of the responders, 69.1% (181) were females and 29.4% (77) were males.

There were no significant differences in the median (IqR) of patients clerked ( $p = 0.860$ ) and cases presented per week ( $p = 0.508$ ) between the male and female students during the clinical posting.

Female students had significantly higher median (IqR) number of speculum examinations (3.0(4.0),  $p = 0.014$ ) and vaginal examinations (10 (7.3),  $p = 0.001$ ) observed, and vaginal examinations performed (0.25 (0.69),  $p = 0.002$ ). There was, however, no significant difference between the genders in mean frequency of performing speculum examination (Table 1).

Further analysis showed that there was a clear association between the gender of medical students and patients' refusal to have student involvement in their care. Significantly, higher proportion of male students experienced patient rejection – 87% (sometimes and always) during medical consultation compared to only 32% of female students ( $p < 0.001$ ) (Table 2).

There was also a significant higher proportion (71.4%) of male students compared to 57.5% of female students who reported that patients were more likely to refuse (sometimes/always) to be clerked by them ( $p = 0.035$ ). The majority (93.3%) of male students significantly reported that patients more likely to decline consent (sometimes/always) for internal examination, compared to 67.6% of female students ( $p < 0.001$ ).

The majority of the male medical students (87%) significantly felt that their gender negatively affected their learning experience, compared to 27.4% of the female medical students ( $p < 0.001$ ) (Table 3).

We also investigated whether the students had felt discriminated by specified medical personnel during their posting. The male students reported significantly higher proportion of being discriminated because of their gender by the medical officers and specialists/consultants, with *p* values of 0.018 and <0.001 respectively (Table 4). There was no significant difference between

**Table 2**

Association between gender and refusal of patient.

Patients' refusal	Gender		$\chi^2$ (df)	<i>P</i> value*
	Male <i>n</i> (%)	Female <i>n</i> (%)		
Refused presence of students during consultation				
Always/sometimes	67 (87.0)	58 (32.0)	65.352	<0.001
Never/rarely	10(13.0)	123(68.0)		
Refused to be clerked by student				
Always/sometimes	55 (71.4)	104 (57.5)	4.458	0.035
Never/rarely	22 (28.6)	77 (42.5)		
Refused consent for internal examination				
Always/sometimes	70 (93.3)	121 (67.6)	18.769	<0.001
Never/rarely	5(6.7)	58(32.4)		

\* Pearson Chi-Square significant <0.05

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