

PATIENTS' PERCEPTION TOWARDS GENERAL AND PELVIC EXAMINATION BY MALE MEDICAL STUDENTS

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Abstract

Male medical students globally have difficulty in obtaining consent to perform pelvic examinations. We sought to identify independent factors influencing women consenting to male medical students performing general and pelvic examinations under supervision. This cross-sectional study was conducted at a tertiary hospital and a public health care centre in Johor Bahru, Malaysia where 369 women above 18 years old who have had sexual intercourse and no prior hysterectomy were recruited. A validated self-administered bilingual questionnaire was used to collect data on factors that influence them consenting to male medical students examining them and performing pelvic examination when indicated. The respondents were mostly below 30 years old (52.9%), Malays (73.4%), and Muslims (75.3%). The consent rates for general and pelvic examination were 27.4% and 18.9%, respectively. Being a Muslim, having an occupation, and being introduced by a male medical specialist increased women's likelihood of consenting to a general examination. However, a history of being examined by male students decreased the likelihood by 64%. Believing that male doctors should have the skills to treat patients in women's health was the only independent factor that increased the likelihood for women to consent for pelvic examinations to be conducted by male medical students. Believing that male doctors should be skilled in treating women positively influences the decision to consent. Explaining earnestly to women how they aid in developing the skills of future doctors should be prioritised.

Keywords: Male Medical Students; Multi-Ethnic; Pelvic Examination.

INTRODUCTION

Competency in performing pelvic examinations is essential in the clinical training of medical students. However, globally male medical students experience higher rates of declined consent to practice than their female counterparts. Male students felt their gender had a negative impact on their experience, but female students felt their gender had a positive impact (1,2).

Overall, female students perform better when it comes to obtaining consent

for pelvic examinations. History taking and examination by male students were acceptable, but intimate examination was less acceptable when attitudes to the gender of medical students by women in a gynaecology clinic were explored (3,4).

The predominant Malay male students in a Malaysian medical school performed fewer pelvic examinations than their female colleagues. They also reported gender discrimination by medical officers and specialists (2). Despite male students reporting more embarrassment and a higher

number of patient refusals in a United Kingdom school, they performed similar numbers of intimate examinations as the female students. The male students also felt clinical tutors were more likely to introduce patients to female students (5,6).

In a Saudi Arabian study involving 492 patients, 80.7% of patients felt that students' general appearance and manner affected their cooperation, and 57.9% preferred medical students of the same sex. 64% would not object to students' presence during an examination. In contrast, 38% would accept the presence of both physician and medical students. Maintaining privacy was the most crucial aspect of a patient- doctor relationship (7).

Patients seen by a female student and those who had prior student involvement reported more comfort in student participation (8). Some male students resort to honing their pelvic examination skills by examining patients under anaesthesia, but only 55% of Canadian women in a study expected a medical student to be present during their surgery. A vast majority wanted to be informed of medical students' presence; 62% would consent to medical students performing pelvic examinations, and an additional 5%

allowing only female students (9,10). Patients under anaesthesia are indeed easier to examine as the pelvic musculature is relaxed. Although this is an established practice in Canada, physicians should be trained in the examination's conduct (11,12).

Factors contributing to this refusal can be differentiated into modifiable viz professional approach, presence of chaperone and non-modifiable factors viz male gender, socio-cultural beliefs. We sought to identify patients' perception of modifiable factors to increase male medical students' opportunities to hone their clinical skills (2,5).

RESEARCH METHODS

This cross-sectional study was conducted at Hospital Sultanah Aminah Johor Bahru (HSAJB) and Klinik Kesihatan Tampoi, Johor Bahru, Malaysia, from June 2018 to October 2019, following approval from the Malaysian Research Ethics Committee (NMRR Research ID: 39896) and the Monash University Human Research Ethics Committee (MUHREC ID: 14384). A minimum sample size of 369 was determined using OpenEPI, and eligible participants were literate women aged above 18 years who had previously

engaged in sexual intercourse and had no history of hysterectomy. These participants were recruited from the Specialist O&G Clinic, Antenatal Ward, Patient Assessment Unit of HSAJB, Gynaecology Ward, and Tampoi Community Health Clinic, and written informed consent was obtained prior to data collection. Statistical analyses were performed using IBM SPSS Statistics version 25.0, with data summarized in frequencies and percentages. Associations between demographic and clinical characteristics, student-related factors, clinical scenarios, past experiences, social support, and consent rates were examined using Chi-square or Fisher's exact tests, and multivariate logistic regression was conducted to identify independent factors associated with women's willingness to permit general and pelvic examinations by male medical students. Statistical significance was defined as $p < 0.05$.

RESULTS AND DISCUSSION

Results

The respondents were mostly below 30 years old (52.9%), Malays (73.4%), Muslims (75.3%), have at least secondary level education (96.7%), working (58.4%), and married (92.6%). Only 27.4% of the respondents were willing to consent to

general examination by male medical students, and an even smaller proportion of them agreed to consent to pelvic examination (18.9%). The global consent rates in the literature search for general examination by male medical students ranged from 0.9% to 35.6%, while consent rates for pelvic examination ranged from 1% to 39.8%. The acceptance/preference rates were also lower for male medical students, with the highest being 43% compared to 54% for female medical students. Comfort rates among participants were also lower for male medical students (74% vs. 86%).

In our study, the univariate analysis (Table 1) showed a significant association between consent to general examination by male medical students and ethnicity ($p=0.011$), religion ($p=0.011$), and working status ($p=0.040$). Interestingly none of these demographic indicators were associated with consent for a pelvic examination.

More than 40% of the respondents were recruited from obstetric wards, followed by primary care clinics (20.5%) and gynaecology ward (20.3%). More than 62% of the women were pregnant, with 75% in the third trimester. Almost 76% of

them have children, and about one-third of the respondents have experienced at least one miscarriage in their lifetime. Most of the respondents (59.6%) have experienced at least one vaginal delivery, while about 24% have experienced at least one caesarean delivery. Surprisingly, none of the clinical characteristics were associated with the consent to general and pelvic examinations by male medical students (Table 2).

We conducted a further analysis with multivariate logistic regression to identify independent predictors of consent to general examination and pelvic examination (Table 3) by male medical students. Consent to general examination was examined for its association with demography (ethnicity, religion, and occupation), student's characteristics (well-groomed, politeness, confidence, similar language), clinical setting (accompanied by a female chaperone, introduced by a male medical specialist, co-examined and treated by a senior doctor), past experience and husband/partner's influence on their decision. Being of a Muslim background increases the likelihood of giving consent to general examination by male medical students (AOR=2.14, 95% CI=1.23-3.71,

$p=0.007$) while working women are 72% more likely to provide consent (AOR=1.72, 95% CI=1.03–2.87, $p=0.039$). Introduction by a male specialist increased the odds of consent by two times (AOR=2.06, 95% CI=1.14-3.73, $p=0.016$). However, history or examination by male students decreased the likelihood for women to provide consent to general examination by 64% (AOR=0.36, 95% CI=0.22-0.59, $p<0.001$). Consent to pelvic examination by male medical students was explored regarding its association with ethnicity, religion, feeling coerced to consent if asked by a senior doctor, co-examined and treated by a senior doctor, and belief that male doctors should have the skills to treat patients in Women's Health.

Past experience of having examinations done by male doctors ($p=0.010$) and male medical students ($p<0.001$) also may be associated with consent to general examination. Conversely, the univariate analysis suggests that women felt coerced if asked by a senior doctor for consent to pelvic examination by male medical students ($p=0.032$). However, some women may also consent to pelvic examination as they

believe male doctors require the skills (p=0.023).

Table 1. Distribution of consent rates according to demographic characteristics of study respondents (n=365)

Demographic characteristics respondents	All respondents n (%) (n=365)	Consent to general examination by male students n (%)		P-value	Consent to pelvic examination by male students n (%)		P-value
		Yes (n=100)	No (n=265)		Yes (n=69)	No (n=296)	
Age (years)							
<30	193 (52.9)	54 (54.0)	139 (52.5)	0.790	38 (55.1)	155 (52.4)	0.623
30 – 39	140 (38.4)	36 (36.0)	104 (39.2)		27 (39.1)	113 (38.2)	
≥40	32 (8.8)	10 (10.0)	22 (8.3)		4 (5.8)	28 (9.5)	
Ethnicity							
Malay	268 (73.4)	64 (64.0)	204 (77.0)	0.011*	58 (84.1)	210 (70.9)	0.097
Chinese	28 (7.7)	10 (10.0)	18 (6.8)		4 (5.8)	24 (8.1)	
Indian	55 (15.1)	24 (24.0)	31 (11.7)		7 (10.1)	48 (16.2)	
Others	14 (3.8)	2 (2.0)	12 (4.5)		0 (0.0)	14 (4.7)	
Religion							
Muslim	275 (75.3)	66 (66.0)	209 (78.9)	0.011*	58 (84.1)	217 (73.3)	0.062
Non-Muslim	90 (24.7)	34 (34.0)	56 (21.1)		11 (15.9)	79 (26.7)	
Education							
No formal education	2 (0.5)	0 (0.0)	2 (0.8)	0.974	0 (0.0)	2 (0.7)	0.806
Primary	10 (2.7)	2 (2.0)	8 (3.0)		2 (2.9)	8 (2.7)	
Secondary	180 (49.3)	50 (50.0)	130 (49.1)		37 (53.6)	143 (48.3)	
Tertiary	173 (47.4)	48 (48.0)	125 (47.2)		30 (43.5)	143 (48.3)	
Occupation							
No	152 (41.6)	33 (33.0)	119 (44.9)	0.040*	31 (44.9)	121 (40.9)	0.539
Yes	213 (58.4)	67 (67.0)	146 (55.1)		38 (55.1)	175 (59.1)	
Marital status							
Single	23 (6.3)	6 (6.0)	17 (6.4)	0.573	5 (7.2)	18 (6.1)	0.818
Married	338 (92.6)	92 (92.0)	246 (92.8)		64 (92.8)	274 (92.6)	
Widowed/divorced	4 (1.1)	2 (2.0)	2 (0.8)		0 (0.0)	4 (1.4)	

Data presented as n(%) and analysed with chi square or fisher’s exact test

*significant at P-value < 0,005

Table 2. Distribution of consent rates according to clinical characteristics of study respondents (n=365)

Clinical characteristics respondents	All respondents n (%) (n=365)	Consent to general examination by male students n (%)		P-value	Consent to pelvic examination by male students n (%)		P-value
		Yes (n=100)	No (n=265)		Yes (n=69)	No (n=29)	
Source							
Primary care clinic	75 (20.5)	24 (24.0)	51 (19.2)	0.271	18 (26.1)	57 (19.3)	0.551
SCOG	67 (18.4)	15 (15.0)	52 (19.6)		12 (17.4)	55 (18.6)	
Gynae ward	74 (20.3)	26 (26.0)	48 (18.1)		11 (15.9)	63 (21.3)	
Obstetric & antenatal	149 (40.8)	35 (35.0)	114 (43.0)		28 (40.6)	121 (40.9)	
Pregnancy experience							

Clinical characteristics respondents	All respondents n (%) (n=365)	Consent to general examination by male students n (%)		P-value	Consent to pelvic examination by male students n (%)		P-value
		Yes (n=100)	No (n=265)		Yes (n=69)	No (n=29)	
Never pregnant	26 (7.1)	9 (9.0)	17 (6.4)	0.678	3 (4.3)	23 (7.8)	0.544
Currently pregnant	228 (62.5)	62 (62.0)	166 (62.6)		46 (66.7)	182 (61.5)	
Previously pregnant	111 (30.4)	29 (29.0)	82 (30.9)		20 (29.0)	91 (30.7)	
Trimester							
First	22 (11.2)	6 (11.1)	16 (11.3)	0.489	6 (15.0)	16 (10.3)	0.347
Second	27 (13.8)	10 (18.5)	17 (12.0)		3 (7.5)	24 (15.4)	
Third	147 (75.0)	38 (70.4)	109 (76.8)		31 (77.5)	116 (74.4)	
Children^b							
None	83 (24.5)	24 (26.4)	59 (23.8)	0.669	16 (24.2)	67 (24.5)	0.959
Yes	256 (75.5)	67 (73.6)	189 (76.2)		50 (75.8)	206 (75.5)	
Miscarriages^b							
None	234 (69.0)	62 (68.1)	172 (69.4)	0.829	47 (71.2)	187 (68.5)	0.669
Yes	105 (31.0)	29 (31.9)	76 (30.6)		19 (28.8)	86 (31.5)	
Vaginal delivery^b							
None	137 (40.4)	39 (42.9)	98 (39.5)	0.579	25 (37.9)	112 (41.0)	0.640
Yes	202 (59.6)	52 (57.1)	150 (60.5)		41 (62.1)	161 (59.0)	
Caesarean delivery^b							
None	259 (76.4)	72 (79.1)	187 (75.4)	0.475	51 (77.3)	208 (76.2)	0.853
Yes	80 (23.6)	19 (20.9)	61 (24.6)		15 (22.7)	65 (23.8)	

Data presented as n(%) and analysed with chi square or fisher's exact test

a.. n = 196; b. currently pregnant or ever pregnant

Table 3. Independent predictors of female respondents' consent to general and pelvic examinations by male medical students (n=365)

	Adjusted OR	95% CI	P-value
General examination			
Demography			
Muslim	2.14	1.23-3.71	0.007*
Working	1.72	1.03-2.87	0.039*
Clinical scenario			
Accompanied by female chaperone	2.24	0.93-5.38	0.071
Introduced by male specialist	2.06	1.14-3.73	0.016*
Past Experience			
History or examination by male medical student	0.36	0.22-0.59	<0.001**
Pelvic examination			
Clinical scenario			
Felt coerced when asked by a senior doctor	0.80	0.61-1.04	0.098
Male doctors require the skills	2.37	1.03-5.45	0.043*

Data analysed with multivariate logistic regression (stepwise:backward wald)

*significant at P-value < 0,05

Of all these potential factors, only the belief that male doctors should have the skills was significantly associated with an

increased likelihood of women to provide consent to pelvic examination (AOR=2.37, 95% CI=1.03-5.45, p=0.043).

Discussion

This paper evaluates background characteristics and influencing factors that may lead to women consenting to male medical students performing general and pelvic examination when indicated. Overall, the percentage of women who will allow male students to perform these examinations is dismal, 27.4% and 18.9%.

When asked for consent to perform a general examination, Muslim women were more likely to consent than women of different faiths ($p=0.007$). However, there was no difference when it came to consent for a pelvic examination. Regional papers looking at this aspect are limited. A study at Temple University Lewis Katz School of Medicine explored background characteristics found that Whites were more likely than Blacks to allow student participation. Hispanics and Asians were the least likely to do so (13,14)

Women who work were likely to consent to general examination ($p=0.039$) but not a pelvic examination. In Saudi, a patients generally preferred female medical students, especially in sensitive examinations like gynecology (15).

Past experience of having examinations done by male doctors

($p=0.010$) and male medical students ($p<0.001$) also may be associated with consent to general examination but not pelvic examination. Armitage and Cahil's analysis of questionnaires completed by 233 women on consenting to pelvic examination by medical students of either gender indicated that although age, parity and marital status had no bearing on a woman's willingness to consent to pelvic examination, attending a gynaecology clinic before positively affected willingness to consent (3).

The consensus from a general public survey was general examination by medical students was largely acceptable but permission for intimate examinations if at all given was restricted to advanced medical students. Those who gave consent were more likely to have been hospitalised or been examined by medical students before (16). The majority of our participants were married and being married was not a characteristic of them consenting to general or pelvic examination by male students. Our finding that parity and a prior vaginal delivery were not influencing factors was aligned with the results of a study, but contrasted with other studies that noted parous women were more likely to allow

student participation than nulliparous women (3,17).

Across all ethnic groups in an urban multi-ethnic community with a racially diverse population of obstetricians, a strong racial bias in the patient selection of an obstetrician was noted. Our participants, however, said ethnic or religious concordance did not make a difference. Although communicating in a language the participant is comfortable with was significant ($p=0.035$) for respondents' consenting to general examination, it was not an independent predictor. The language used did not influence obtaining consent for a pelvic examination. Another study noted that clinical competence or communication skills were more important than the gender of the care provider (18).

Seeking consent when female medical personnel chaperone the student or when a male specialist does the introduction were significant independent predictors for respondents consenting to general examination by male students but not for pelvic examination in our study. Tang and Skye studied the influence of preceptors. Their respondents were more likely to decline student involvement when preceptors used another medical team member such as

medical assistants, physician assistants, or nurses to obtain permission to have a medical student involved in their care. In education and training settings, a female member of the team does improve the possibility of male residents participating in gynaecologic examination as women are uncomfortable with the presence of males in gynaecological examination and have difficulty discussing sexual matters with a man. More importantly, compassion and communication help alleviate embarrassment. These show the importance of acknowledging a patient's potential discomfort before performing a pelvic examination and teaching gender-sensitive communication style (19).

Our participants reported feeling coerced into consenting for pelvic examination if approached by a senior doctor, but when independent predictors were analysed, this was not statistically significant ($p=0.098$). They were also likely to consent if the male student performs the pelvic examination under a senior doctor's supervision. Students may attempt to request consent by linking it to care provided by supervising clinicians, which reduces patient freedom to choose. When determining the element of coercion in obtaining permission, 86% of 226 participants studied by Berry et

al. said they would prefer a nurse instead of a physician or student approaching them for consent. This approach would reduce coercion taking place (20).

Malaysia is a multi-ethnic and conservative country. Interestingly, despite being part of a conservative society, the husband's opinion did not influence the participant's decision to consent to both general and pelvic examination. The majority of the participants are Muslims (74.5%) with secondary school education (49.6%) or tertiary education (47.2%). Education may be the reason for their independent decision-making as a study in Ghana showed that of the 94 Muslim women interviewed, those with lower formal education obeyed their husbands' decisions when it came to birthing in hospitals (21).

Fortunately, women of all religious faiths believe that male doctors should have skills to treat patients in Women's Health ($p=0.043$). Emirati women too acknowledged responsibility in the training of all their medical students.²⁵ In a commentary by Ameer Z Aldee, the following issues were highlighted. When treatment is required for non-emergent conditions, most Islamic scholars believe that the order of preference for providers should

be Muslims of the same gender, followed by non-Muslims of the same gender, Muslims of the opposite gender, and finally Muslims of the opposite gender. However, there is no religious opposition to complete examination by a physician of the opposite gender in emergent care. A proper explanation to women that they are helping doctors of the future acquire skills needed in emergencies will be helpful (22).

Medical schools in some developed countries that use women trained to teach pelvic examination while being examined have shown that some students' anxieties may be relieved. This teaching strategy involves cost and may not be an economically viable option for most of the 202 medical schools in Southeast Asia but maybe a way forward to improve male medical students' clinical skills and confidence (23).

This study's strengths include the large sample size recruited from different clinical locations, including both obstetrics and gynaecology patients. The limited number of similar studies from the South East Asian region hindered making reasonable comparisons.

The patients' perspective is pivotal as it directs the area to focus on to improve the

learning experience of male students in performing pelvic examinations. The belief that male doctors should have the skills to examine a woman entirely means effort should be spent in explaining to women the importance of having male doctors who are competent in performing a pelvic examination and how they can help achieve this. Further studies should be conducted to explore suggestions by women themselves on ways to improve male students' physical examination learning process.

CONCLUSION AND RECOMMENDATION

Women's consent rates for general and pelvic examinations by male medical students remain low, indicating persistent challenges in providing equal clinical learning opportunities. Key factors that positively influenced consent included being Muslim, being employed, receiving an introduction by a male specialist, and believing that male doctors require competency in women's health, while prior negative experiences with male students reduced willingness to consent. These results underscore the importance of improving communication, ensuring respectful and culturally sensitive approaches, and providing clear explanations regarding the

educational value of examinations. To enhance acceptance, healthcare institutions should strengthen patient-centred consent practices, emphasize the role of supervision and chaperones, and develop strategies potentially including simulation or trained patient educators to support male medical students in acquiring essential examination skills without compromising patient comfort or autonomy.

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