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# Patients' attitude and factors influencing the acceptance of medical students' participation in pelvic examination

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#### Abstract

**Introduction:** Pelvic examination of patients in the department of obstetrics and gynaecology (Ob-Gyn) is an important skill for medical students. Because it involves a physical assessment of the patients' genitalia, patients may refuse medical students to participate in the examination, affecting the medical students' clinical skills.

**Methods:** This cross-sectional study was conducted at Naresuan University Hospital to determine the factors that influence the acceptance of medical student participation in the pelvic examinations. A total of 198 out-patients from the Ob-Gyn department were included. A Likert scale questionnaire was designed which featured topics on patients' attitudes and circumstances related to medical student involvement in gynaecological procedures.

**Results:** The majority of outpatients (71.7%) accepted the participation of medical students in pelvic examinations. Patients with prior experiences in physical and pelvic examination by medical students had a significant impact on the patients' acceptance (P-value<0.001). The patients' impressions had an influence on the decision to accept students in pelvic exam participation. Approximately 40% of patients were concerned about the breach of confidentiality. However, most patients strongly agreed that allowing medical students to perform pelvic examination would benefit their medical education.

**Conclusion:** Most of the participants permitted medical students to participate in pelvic examinations and preferred that the medical instructor be the one to request permission. The patients' impressions of medical students were crucial factors that significantly influence their decision whether to allow or deny them to participate in the procedure. Disclosure of confidentiality was found to be matters of concern to most patients.

Keywords: Pelvic Examination, Medical Students, Acceptance, Performance, Clinical Teaching

# Practice Highlights

- Most of the patients consent to a medical student participating in a pelvic examination.
- Medical instructors should ask for patients' permission.
- Confidentiality and privacy of patients are critical issues that must be addressed.
- Patients' impressions and prior examination experiences by medical students influence patients' decisions.

# I. INTRODUCTION

Medical students should learn how to perform pelvic examinations on patients during clinical years. History taking, physical examination, and pelvic examination are taught during the fourth to sixth year of medical training in our curriculum. Pelvic examination is defined as the assessment of external genitalia, speculum examination of the vagina and cervix, bimanual palpation of the uterus, adnexa and sometimes rectovaginal examination. This procedure is used to screen for gynaecological diseases and cancers in asymptomatic women and to diagnose gynaecological diseases in symptomatic women. Pelvic examination differs from other physical examinations because it involves an inspection of the genitalia, which, according to studies, commonly causes anxiety, fear, embarrassment (10-80% of women), pain, and discomfort (11-60% of women) (Bloomfield et al., 2014). Some factors why patients feel uncomfortable during a physical examination by medical students are privacy, confidentiality. concerns about and embarrassment (Rizk et al., 2002). As a result, patients may refuse to allow medical students to participate in the pelvic examination, affecting the learning experience and clinical skills of medical students. Furthermore, factors related to age, race, religion, cross-cultural differences, marital status, and previous delivery may also influence the patients' decision to allow medical students in conducting pelvic examination (Anfinan et al., 2014; McLean et al., 2010). Compared to other ethnic and religious groups, Muslim women had a higher rate of refusing medical students, particularly male students (Nicum & Karoo, 1998). During intrapartum care, approximately 50% of Hindu and Muslim patients refused to accept medical students. Sikh and Muslim patients accepted only female medical students, 41% and 40%, respectively, whereas 59% of Christian patients accepted both female and male medical students (Nicum & Karoo, 1998). However, patients' reasons for accepting and refusing medical student participation in pelvic examination have not been established in Southeast Asia because of limited investigation.

According to the patient's bill of rights, patients have a right to accept or refuse the medical students' participation. They should have the opportunity to decide if they want to contribute to the medical education or decline care from medical students (Teunissen, 2018). Approximately 26% of the patients refused to have a medical student perform a pelvic examination (Fortier et al., 2006). Previous study reported that the refusal rate increased as the level of student involvement increased, from observation to history taking to examinations and procedure, particularly with digital vaginal and rectal examination (Salah et al., 2015). In contrast, some patients accepted the medical students' participation because they wanted to contribute to the clinical training in medical education. Because of the training process, the patients felt more confident that they would receive appropriate treatments. From the literature review, most studies were conducted in developed and some Arab countries. There are limited data from women in Southeast Asia countries on the factors and attitudes that influence their decision whether they allow or refuse medical students to participate in a pelvic examination. This research aimed at studying the patients' characteristics, influencing factors and correlation with the acceptance of medical students, which may increase the Ob-Gyn patients to participate in clinical education.

#### II. METHODS

This cross-sectional descriptive study was conducted at the out-patient unit of the Department (OPD) of Obstetrics and Gynaecology, Naresuan University Hospital. Patients who visited Ob-Gyn department between November 2018 and May 2019 were included in the study. Patients under 20 years old, mentally or critically ill and unable to understand the questionnaire in Thai language were excluded in this study. All the participants were able to complete the consent forms and questionnaires independently, and were guaranteed anonymity.

The questionnaire was developed to evaluate 4 domains, as follows: (1) demographic and socio-economic data (age, gender, educational level, occupation and parity), (2) patient preference, (3) factors influencing patient receptivity of medical student involvement in pelvic examination (gender, hygiene, manner and demeanour, patients' impressions of the medical students, prior experience in physical and pelvic examination), and (4) patients' attitudes toward accepting medical students to conduct pelvic examination under supervision of medical instructors. Influencing factors and attitudes included in the questionnaire were modified based on a literature review. A 5-point Likert scale was used to determine the level of agreement (1= strongly agree; 2= agree; 3= neutral; 4= disagree; and 5= strongly disagree). The questionnaire was initially tested for content validity using the item-objective congruence (IOC) index, and then used in a pilot study on 30 patients who were not included in the study to ensure clarity and reliability.

#### A. Statistical Analysis

A Microsoft Excel spreadsheet was created for data entry and statistical analysis. Descriptive data was presented in the form of frequency, mode, and percentage. Chi-square test was calculated for proportions. The p-value of less than 0.05 was considered statistically significant.

## B. Ethical Considerations

All collected data was kept confidential, and the information was used for research only. This study was approved by Naresuan University Institutional Review Board in compliance with the principles of the Helsinki Declaration.

#### **III. RESULTS**

During the study period, 236 participants were recruited from the out-patient department of Ob-Gyn, but only 198 completed the questionnaire. Most of them (99.0%) were aware that Naresuan University Hospital is a primary teaching hospital of the Faculty of Medicine, Naresuan University which provides clinical training for medical students and residents. The socio-demographic data of the study population are shown in Table 1. The data that supports the findings of this study are openly available at http://doi.org/10.17605/OSF.IO/HBV68 (Amatyakul, 2021).

Demographics and characteristics (N=198)	Frequency	(%)	
Age in years			
20-39	116	58.6	
40 and older	82	41.4	
Educational attainment			
Elementary/ High school level	17	8.60	
High school graduate / Vocational certificate holder	27	13.6	
Bachelor's degree and postgraduate degree holder	153	77.3	
Non-specified	1	0.50	
Occupation			
Health care worker / personnel	31	15.6	
Non-health care worker	167	84.4	
Prior pelvic examination			
Yes	148	74.8	
No	50	25.2	
Parity			
Nulliparous	93	47.0	
Multiparous	105	53.0	

Table 1. Demographics and characteristics of the study population

From 198 participants, 71.7% accepted the medical students to participate in pelvic examination. Fifty-seven percent of the participants in the acceptor group allowed both male and female medical students, while 42.9% in the same group allowed only female medical students. The correlation between patients' acceptance and refusal for the medical students to participate in pelvic examination showed that age, occupation and parity of the patients were not statistically different (p > 0.05). Thirty-one percent of bachelor's degree holders and 37% of postgraduate degree holders refused the participation of medical students. The higher the patient's educational attainment, the more likely they are to refuse a pelvic examination performed by medical students, as observed in this study. In the conduct of pelvic exam procedure, 69.3% of the patients in the acceptor group and 53.6% of the patients in the non-acceptor group felt comfortable with students present as observers. Before the students

participate in a pelvic examination, most of the participants (81.4%) preferred that the medical instructors (56.6%) ask permission rather than the medical students (21.7%) or nurses (21.7%).

This research recorded 52.7% of the patients with prior experience of physical examination by medical students from other departments in Naresuan University Hospital. Thirty-two percent of the patients previously received pelvic examination by medical students (from our department or other medical training hospitals). Patients who had their physical examinations performed by medical students from other departments or had pelvic examinations performed by medical students had a statistically significant increase in allowing medical students to participate in pelvic examinations under the supervision of a medical instructor (Table 2).

Prior experience	Percentage of acceptance of medical students to participate in pelvic examination (%)			
	Acceptors	Non-acceptors	-	
Received physical examination by medical students from (any) other departments				
Yes	44.16	8.63	.0.001	
No	27.41	19.80	< 0.001	
Received pelvic examination by medical students				
Yes	29.69	3.13		
No	42.71	24.48	< 0.001	

Table 2. The correlation between the acceptance of medical student participation in pelvic examination and prior experience of pelvic examination performed by medical students.

The participants' decisions were influenced by their impressions of medical students. More than 90% of the participants believed that characteristics like manner, demeanour, cleanliness, hygiene, trustworthiness, and respect had a substantial impact on their attitudes and

acceptance. Similarly, the gender of the medical students also influenced the decision of the participants (69.2%), which female students were preferred. The negative and positive attitudes of the patients related to medical student participation in pelvic examination are shown in Table 3.

Attitudes of the participants (N=198)	Frequency	(%)
Negative attitudes		
Concerned about breach of confidentiality	79	39.9
Apprehensive about not receiving standard/appropriate management	67	33.8
Concerned about invasion of privacy	49	24.7
Feel embarrassed	49	24.7
Feel uncomfortable but cannot refuse medical team	39	19.7
Worried that the procedure is painful	36	18.2
Take longer than usual routine visits	32	16.2
Positive attitudes		
Willing to contribute to the training / clinical teaching eager	161	81.3
Confident about receiving accurate and complete treatment	133	67.2
Appreciative of getting two pelvic examinations which provide more diagnostic information	71	35.8

Table 3. The positive and negative attitudes of the participants about medical students' participation in pelvic examination under the supervision of medical instructors.

#### **IV. DISCUSSION**

Our study demonstrated that 71.7% of the participants agreed to have their pelvic examinations performed by medical students. This result was comparable to the study of Western women that reported an acceptance rate ranging from 58 to 77% (Nicum & Karoo, 1998). Conversely, our acceptance rate was lower when compared to a study conducted in United Arab Emirates by Rizk et al. (2002), in which 87.1% of the out-patients in Ob-Gyn accepted the involvement of medical students. According to the results of our study, there were no statistically significant differences between acceptors and non-acceptors in terms of age, educational level, occupation, parity, or prior pelvic examination. Hartz and Beal (2000) also reported similar findings, stating that the age and education of the patients were not statistically different between the two groups. However, Rizk et al. (2002) stated that the acceptance of the patients with older age, higher parity, and higher education was statistically significant. Interestingly, there was a trend discovered in our research that patients who are highly educated were more reluctant to allow medical students in performing pelvic examination, even

when supervised by medical instructors. This reluctance could be because of a strong concern for their privacy, which should be investigated further through an in-depth interview.

Prior experience of the patients receiving physical examination by medical students from other departments, and prior experience of the patients receiving pelvic examination performed by medical students significantly increased the rate of acceptance. These findings are consistent with those of Ghobain et al. (2016) who reported that a positive prior experience with a medical student was significantly related to giving medical students permission to perform a physical examination. This can be explained by the fact that these patients were already aware of the medical student involvement in performing physical examinations. Therefore, they are more likely to accept medical student participation in subsequent Ob-Gyn consultations.

One interesting finding from our study was the positive patient receptivity of medical students acting as observers during pelvic examination. Patients in approximately 70% of the acceptor group allowed other medical students to observe the examination process. Remarkably, 53.6% in the non-acceptor group was comfortable with medical students observing a pelvic examination performed by medical instructor. This would imply that even if students cannot perform pelvic examinations, they can still gain clinical knowledge through observation, and clinical instructors can take advantage of this valuable opportunity to educate their students.

Other major concern of patients is the requirement for students to obtain permission before participating in any procedures. The majority of the participants prefer that medical instructors be in charge of obtaining patient permission to allow students to perform physical examinations on their behalf. This tendency may lead to a higher rate of acceptance of student participation.

The characteristics and performance of the medical students in our study had a significant impact on patients' decision. The external part of the female reproductive organ is a sensitive and the most private area for every woman, and patients would only allow medical students who practice good hygiene and cleanliness to participate in the examination. Furthermore, the appropriate manner and demeanour, including respectfulness and politeness toward patients, and trustworthiness of the medical students during the clinical procedure may increase the patients' receptivity of medical students to conduct pelvic examination. Professional appearance reflecting cultural backgrounds also impacts patient preference and acceptance; therefore, medical students should dress properly (Aljoudi et al., 2016).

Several studies, including ours, found that participants felt more at ease with female students than with male students (Salah et al., 2015; Subki et al., 2018). Chang et al. (2010) reported that male students were refused by patients to participate in clinical interviews and physical examinations, including pelvic examinations. In a study conducted at Taibah University in India (Shetty et al., 2021), women significantly preferred female students during abdominal and genital examinations. As a result, it is difficult for obstetrics and gynaecology educators to consider methods of encouraging patients to accept participation of medical students, regardless of their genders.

Patients' positive attitudes toward medical students' participation contributed to clinical teaching, which is an important process for professional development. The patients agreed that they would receive more accurate and comprehensive treatment if they had two pelvic examinations. These details are consistent with the The Asia Pacific Scholar, Vol. 7 No. 1 / January 2022 Copyright © 2022 TAPS. All rights reserved.

findings of a study conducted by Rizk et al. (2002), which revealed that 69.7% of the participants were willing to contribute to the education of students. Most participants were satisfied with the overall service because they were well informed about their care by the health care team and were actively involved in the treatment decision-making process. Like other literature (Nicum & Karoo, 1998), medical students also provided patients with useful medical information and support. Furthermore, patients strongly supported the idea that real patient encounters and practices under clinical supervision are more effective methods for improving student's clinical skills than just mere observation or skill laboratory practice (Subki et al., 2018).

Patients' main reasons for refusing medical students' participation in pelvic examination were concerns about breaching their confidentiality and privacy, which were similar to a study conducted in London. According to the findings, the common reasons for patients' uneasiness with participation of the medical students were related to privacy, receiving lower standard of care, examinations, lack of control over the student's level of involvement. and a longer consultation time (Ryder et al., 2005). The participants in our study were also concerned about taking a longer than usual routine visit. Not only applicable in Ob-Gyn department, patients' perceptions of students' professionalism and respect for privacy were significantly related to the acceptance of medical students' participation in surgical ward (Ghobain et al., 2016). Thus, all medical students must be informed about the doctor-patient relationship and the importance of maintaining patient confidentiality. Medical instructors must inform and reassure patients about their confidentiality. Before participating in any clinical teachings, medical instructors should explain to students their roles and responsibilities. To minimise patients' feeling of discomfort, these roles and responsibilities should be conveyed and explained to them before asking for their approval.

This paper has highlighted the significance of patients' attitudes toward medical students' manner and demeanor, which greatly influences patients' decision-making process. However, some limitations should be considered, such as the fact that all participants were Thai, and that the study was carried out in one of the Southeast Asia countries where data on the attitudes of female patients had not been thoroughly investigated. Since socio-demographic factors and cultural issues vary across Southeast Asia, the results of this research only represent the characteristics of the Thai population and not the entire region. Additionally, this cross-sectional study could not establish the reasons for patients' negative attitudes toward student involvement in pelvic

examination. Therefore, it is suggested that future research use in-depth interview methodology to gather more information from both the acceptor and nonacceptor groups.

#### V. CONCLUSION

Most of patients agreed to medical students participating in pelvic examinations and preferred medical instructors to be the persons to ask patients for permission. Essentially, patients' confidentiality and privacy must always be safeguarded. The performance of medical students, and their observance of patient privacy and confidentiality are crucial factors in gaining the patient's approval. Furthermore, the gender of the medical student influences the patient's acceptance and comfort level in student's involvement. Clinical instructors must effectively convince patients in gynaecology department to allow male medical students to perform gynaecologic procedures.

#### Notes on Contributors

Nisakorn Deesaen, Punyanuch Phonngoenchai, and Kongpop Sutantikorn contributed to the literature review, concept development, questionaire design, data collection, data analysis, and manuscript finalisation. Sakchai Chaiyamahapruk was involved in the study design, data analysis, and manuscript finalisation. Patcharada Amatyakul contributed to the literature review, concept development, study design, data analysis, and manuscript writing and finalisation.

#### Ethical Approval

Ethical approval for this study was obtained from the Naresuan University Institutional Review Board, Naresuan University, Thailand (Ethics approval number IRB 0653/60).

#### Data Availability

The data that support the findings of this study are publicly available in Open Science Framework repository, <u>http://doi.org/10.17605/OSF.IO/HBV68</u>.

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The authors declare no conflict of interest.

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# <u>Questionnaires</u>

## Factors influencing the acceptance of medical students' participation in pelvic examination Department of Obstetrics and Gynaecology

#### Part 1: Demographic data

Please check the box most applicable to you or fill in the blanks.

- 1. Age
- □ 20-29
- □ 30-39
- □ 40-49
- $\Box$  50 or older
- 2. Educational level
  - Elementary/High school level
  - □ High school graduate
  - □ Vocational certificate holder
  - □ Bachelor's degree holder
  - □ Master / Ph.D. Postgraduate degree holder
  - □ Others (please specified) .....
- 3. Occupation
  - □ Health care personnel
  - □ Employee
  - □ Business owner
  - □ Farming
  - □ Others (please specified) .....
- 4. Parity

6.

 $\Box$  Had no child

- □ Had one child or more
- 5. Have you ever received service(s) in Naresuan University Hospital?
  - □ Yes □ No
  - Do you know that Naresuan University Hospital is a medical school and training center for medical students?
    - $\square$  No
- 7. Have you experienced pelvic examination?
  - $\Box$  Yes

 $\square$  No

- 8. Have you ever received physical examination by medical students from any department?
  - □ Yes
  - □ No
- 9. Have you experienced pelvic examination by medical students under supervision of medical instructors?
  - $\Box$  Yes
  - $\square$  No

# Part 2: Preference of medical students' participation in pelvic examination

Please check the box most applicable to you or fill in the blanks.

- 1. Will you accept medical student's participation in pelvic examination under supervision of medical staff?
  - $\Box$  Yes, please continue to 1.1 and 1.2
    - $\square$  No, please continue to 1.2
  - 1.1 Which gender of medical students will you accept?
    - $\Box$  Female only
    - □ Male only
    - □ Male or female
  - 1.2 Will you accept medical students to observe during pelvic examination?
    - □ Yes
    - $\square$  No
  - 2. Would you like to be asked for permission if you accept medical student's participation in pelvic examination? □ Yes
    - $\square$  No
  - 3. Who do you prefer to ask for your permission?
    - Medical instructor
    - $\square$  Medical student
    - □ Nurse

Part 3: Factors influencing the acceptance of medical students' participation in pelvic examination (Please complete the following with specific regard to the above enquiry: 1= strongly agree; 2= agree; 3= neutral; 4= disagree; and 5= strongly disagree).

	Strongly	Agree	Neutral	Disagree	Strongly
	agree				disagree
1. Gender of medical students influences on your					
acceptance.					
2. Hygiene and cleanliness of medical students influence on					
your acceptance.					
3. Manner or demeanour of medical students influences on					
your acceptance.					
4. Experience of medical students influences on your					
acceptance.					
5. Trustworthiness of medical students influences on your					
acceptance.					
6. Observation by medical students during pelvic					
examination influences on your acceptance.					

Part 4: Attitudes towards of medical students' participation in pelvic examination (Please complete the following with specific regard to the above enquiry: 1= strongly agree; 2= agree; 3= neutral; 4= disagree; and 5= strongly disagree)

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1. You will feel uncomfortable if asked for permission for					
medical students' participation in pelvic examination under					
supervision of medical instructor.					
2. You will be anxious that you will not receive standard					
treatment if you refuse medical students' participation in					
pelvic examination.					
3. Your privacy will be disclosed if medical students					
participate in pelvic examination.					
4. Your medical information will be disclosed and					
confidentiality will be breached if medical students					
participate in pelvic examination.					
5. You will feel embarrassed during pelvic examination by					
medical students.					
6. You are afraid that it will be more painful if medical					
students perform pelvic examination.					
7. It will take longer than the usual routine visits if medical					
students participate in pelvic examination.					
8. Two pelvic examinations by medical student and					
instructor will provide more information on the diagnosis					
and treatment.					
9. You will receive accurate management after two pelvic					
examinations by medical student and medical instructor.					
10. You will contribute to the clinical teaching if you					
accept medical students' participation in pelvic					
examination.					
10. You will feel uncomfortable to refuse medical students'					
participation in pelvic examination if a medical instructor					
asks for your permission.					
10. You will feel comfortable to refuse medical students'					
participation in pelvic examination if a medical student /					
nurse asks for your permission.					

# Comment(s)

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