



# Attitudes of Outpatients towards the Presence of Medical Students in Clinical Practice: A Cross-sectional Study

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## Abstract

**Objectives:** To study outpatients' attitudes toward medical students. The factors which may affect attitudes of patients including place, educational level, outcomes, health access choices, and experiences with medical students in the examination room were also evaluated.

**Methods:** This was a cross-sectional survey. The questionnaire was conducted among outpatients or their relatives in gynecology, medicine, surgical and parents of patients in pediatric clinics in January 2015. The recording data were age, sex, factors which may affect attitudes, and a questionnaire regarding patients' attitudes toward medical students.

**Results:** One hundred and fifteen responders had a mean age of  $44.2 \pm 15.9$  years. More than two-third of responders lived in Bangkok, and about 50% had an educational level of bachelor's degree or higher. Fifty-six percent of responders wanted the physician to ask them for permission before medical student involvement, and 40% did not want medical students to examine some body parts. The majority of participants (66%) were satisfied with the presence of medical students in the examination room, and more than 90% were willing to welcome medical students to the next visit. The most important factor affecting attitudes was educational level. The responders with an educational level of bachelor's degree or higher wanted medical teachers to ask permission for students' presence with odds ratio (OR) of 3.9 (95% confidence interval (CI) = 1.7-8.9;  $p=0.001$ ), felt an invasion of privacy with OR of 4.3 (95% CI = 1.5-2.7;  $p=0.005$ ), and did not want medical students to exam some organs with OR of 2.6 (95% CI = 1.5-2.7;  $p=0.005$ ) compared with responders who achieved a lower level of education.

**Conclusions:** Outpatients' attitudes towards medical students are positive. The majority of them are satisfied with medical students' staying in the examination room. Permission should be sought from patients before medical student involvement. The most influential factor on patients' attitudes regarding medical students is educational level.

**Keywords:** outpatients, attitudes, medical students



# ทัศนคติของผู้ป่วยนอกต่อการมีนักศึกษาแพทย์อยู่ในการปฏิบัติงานคลินิก: การศึกษาแบบตัดขวาง

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## บทคัดย่อ

**วัตถุประสงค์:** เพื่อศึกษาทัศนคติของผู้ป่วยนอกที่มีต่อนักศึกษาแพทย์ และปัจจัยต่างๆ ที่อาจส่งผลต่อทัศนคติของผู้ป่วย เช่น ภูมิลำเนา ระดับการศึกษา รายได้ต่อเดือน สิทธิการรักษา ประสบการณ์เคยพบนักศึกษาแพทย์ ในห้องตรวจมาก่อน

**วิธีดำเนินการวิจัย:** การศึกษานี้เป็นการการศึกษาแบบตัดขวาง ทำการสอบถามโดยการใช้แบบสอบถามในผู้ป่วยนอก หรือญาติที่ห้องตรวจสุส蒂ศาสตร์-นรีเวชวิทยา ห้องตรวจอายุรศาสตร์ ห้องตรวจศัลยศาสตร์ และผู้ป่วยของ ผู้ป่วยเด็กที่ห้องตรวจกุมารเวชศาสตร์ ในช่วงเดือนมกราคม 2558 โดยข้อมูลที่ทำการบันทึกได้แก่ อายุ เพศ ปัจจัยที่อาจส่งผลต่อทัศนคติ และคำถามเกี่ยวกับทัศนคติที่มีต่อนักศึกษาแพทย์

**ผลการวิจัย:** ผู้ที่ร่วมตอบแบบสอบถามมีทั้งสิ้น 115 ราย อายุเฉลี่ยเท่ากับ  $44.2 \pm 15.9$  หากกว่า 2 ใน 3 ของผู้ตอบแบบสอบถามมีภูมิลำเนาอยู่ที่กรุงเทพมหานคร และประมาณร้อยละ 50 มีการศึกษาเท่ากับหรือสูงกว่าระดับปริญญาตรี ผู้ตอบแบบสอบถามร้อยละ 56 ต้องการให้แพทย์แจ้งหรือขออนุญาต ก่อนที่จะนำนักศึกษาเข้าร่วมตรวจและร้อยละ 40 ไม่ต้องการให้นักศึกษาแพทย์ตรวจร่างกายบางอวัยวะ ผู้ตอบแบบสอบถามส่วนใหญ่ (ร้อยละ 66) รู้สึกพอใจที่มีนักศึกษาแพทย์ร่วมด้วยในห้องตรวจ และมากกว่าร้อยละ 90 ยินดีให้นักศึกษาแพทย์เข้าร่วมในการตรวจในกระบวนการรับบริการครั้งต่อไป ปัจจัยที่มีผลต่อทัศนคติของผู้ป่วยมากที่สุดคือระดับการศึกษา โดยผู้ตอบแบบสอบถามที่มีระดับการศึกษาเท่ากับหรือสูงกว่าปริญญาตรี ต้องการให้แพทย์แจ้งหรือขออนุญาต ก่อนที่จะนำนักศึกษาเข้าร่วมตรวจเป็น 3.9 เท่า (ช่วงความเชื่อมั่นร้อยละ 95 = 1.7-8.9;  $p=0.001$ ) รู้สึกไม่เป็นส่วนตัวเมื่อมีนักศึกษาแพทย์เข้าร่วมในห้องตรวจเพิ่มขึ้นเป็น 4.3 เท่า (ช่วงความเชื่อมั่นร้อยละ 95 = 1.5-2.7;  $p=0.005$ ) และรู้สึกไม่ต้องการให้นักศึกษาแพทย์ตรวจบางอวัยวะเป็น 2.6 เท่า (ช่วงความเชื่อมั่นร้อยละ 95 = 1.2-5.7;  $p=0.015$ ) เมื่อเทียบกับผู้ที่มีระดับการศึกษาต่ำกว่า

**สรุป:** ทัศนคติของผู้ป่วยนอกที่มีต่อนักศึกษาแพทย์อยู่ในเชิงบวก โดยส่วนใหญ่รู้สึกพึงพอใจให้นักศึกษาแพทย์เข้าร่วมตรวจ การแจ้งหรือการขออนุญาต ก่อนที่จะนำนักศึกษาแพทย์เข้าร่วมตรวจเป็นสิ่งที่ควรทำ ปัจจัยที่มีผลต่อทัศนคติของผู้ป่วยที่มีต่อนักศึกษาแพทย์มากที่สุดคือระดับการศึกษา

## Introduction

The first Thai Medical Students' Code of Conduct was signed in 2012 and was a consensus among medical students from 19 institutions as a guide for good practice to become good medical students as well as good physicians in the future. It is composed of three parts, including Thai Medical Students' General Practice, Thai Medical Students' Practice towards patients, and Thai Medical Students' Practice towards Others.<sup>1</sup> In addition, The Medical Council of Thailand, Thailand Nursing and Midwifery Council, The Pharmacy Council of Thailand, The Dental Council of Thailand and The Council for Registration of Medical Practice, Ministry of Public Health declared 10 patient's rights in 1998.<sup>2</sup> The declaration indicates the right of every patient to receive health services based on medical standards and safety without discrimination.

During their clinical years at the Faculty of Medicine of Vajira Hospital, 4<sup>th</sup>-6<sup>th</sup>-year medical students have to work at an outpatient's examination room and an inpatient department to practice medical skills such as history taking and physical examination with real patients. Therefore, patients who receive medical services at a university-based hospital have a chance to meet and interact with medical students during their treatment. Regarding the patient's rights, however, patients have the right to refuse the involvement of medical students during physical examination or treatment. There are some controversial studies that were mainly conducted in the USA regarding patient attitudes toward medical students. Some studies reported that patients accepted and were satisfied with involvement of medical students during their medical treatment.<sup>3,4</sup> On the other hand, others reported that patients were annoyed and felt uncomfortable with the presence of medical students.<sup>5,6</sup> Although results from US studies varied, there is no evidence regarding this subject in Asian countries. Differences of tradition and culture may affect attitudes of patients who receive medical services at a medical school based hospital. Therefore, the aim of this study was to determine

the attitudes of patients toward medical students as well as factors affecting their attitudes such as hometown, level of education, monthly income, and medical insurance in order to provide information to both medical students and doctors.

## Methods

This study was a cross-sectional study. Data were collected and recorded after the approval of The Ethical Review Committee for research in human subjects, Faculty of Medicine Vajira Hospital. The process of conducting the questionnaire was preceded by using an in-depth interview in 4-5 patients or relatives during examination in the gynecology clinic, medical clinic, surgical clinic, and parents of patients in the pediatric clinic. A 15-20 minute one-on-one interview was performed with each patient to examine their attitude toward 4<sup>th</sup> and 5<sup>th</sup> year medical students, based on previous positive or negative experience of patients as well as personal feelings toward medical students and factors that make patients feel comfortable with medical students during physical examinations. The preliminary questionnaire was developed based on the information from this interview. This questionnaire was later tested for content validation and modified after receiving answers from ten patients from each department to make it clearer and more understandable. The final draft was divided into two parts: basic demographic information (Table 1) and attitudes of patients or relatives (Table 2). The questionnaires were distributed to outpatients or relatives in the gynecology clinic, medical clinic, surgical clinic, and parents in the pediatric clinic in January 2015. Eligible patients or relatives had to be 18 years old or above, literate, able to answer the questionnaire by themselves, and agree to be part of the study. These patients, or their relatives, later received information regarding this study and were asked whether they agreed to participate in the study. Participants were given three to five minutes to finish the questionnaire by themselves. Completed questionnaires were collected right after the session.

Table 1:

Demographic information of the participants (n = 115)

Demographic Information	Number of Participants	Percentage
<b>1. Sex</b>		
Female	79	68.7
Male	34	29.6
No data	2	1.7
<b>2. Status</b>		
Patient	43	37.4
Relative/Parent	61	53.0
No data	11	9.6
<b>3. Hometown</b>		
Bangkok	81	70.5
Others	25	21.7
No data	9	7.8
<b>4. Level of Education</b>		
No education	1	0.9
Primary School	19	16.5
High School	34	29.5
Bachelor's Degree	50	43.5
Higher Degree	10	8.7
No data	1	0.9
<b>5. Monthly Income</b>		
No income	20	17.4
Less than 5,000 THB	6	5.2
5,000 – 10,000 THB	19	16.5
10,001 – 20,000 THB	33	28.7
20,001 – 30,000 THB	23	20.0
More than 30,000 THB	11	9.6
No data	3	2.6

**Table 1:**

Demographic information of the participants (n = 115) (Con.)

Demographic Information	Number of Participants	Percentage
<b>6. Medical Insurance</b>		
Self- paying (cash)	31	27.0
Universal coverage program (gold card)	37	32.2
Social security	17	14.8
Government/ Private	29	25.2
Others	1	0.8
<b>7. The frequency of receiving service at this hospital</b>		
The first time	17	14.8
Once a month	27	23.5
Every three months	36	31.3
Once a year	10	8.7
When getting sick	7	6.1
With doctor's appointment	3	2.6
Others	12	10.4
No data	3	2.6
<b>8. Which department did you receive the service?</b>		
Gynecology clinic	32	27.8
Surgical clinic	20	17.4
Medical clinic	34	29.6
Pediatric clinic	27	23.5
No data	2	1.7
<b>9. Experience with a medical student in an examination room</b>		
Never	29	25.2
First time	3	2.6
Sometimes	56	48.7
Every time at the hospital	27	23.5

Table 2:

Attitudes of participants toward medical students

Question	Number of Patients	Percentage
1. Should doctor notify you or ask for your permission before bringing medical students into an examination room?		
No	43	37.4
Yes	65	56.5
No data	7	6.1
2. Which of the following experiences have you previously had with medical students? (More than one answer can be chosen)		
Never (No previous experiences)	29	25.2
Medical students were just standing in the examination room	11	9.6
Medical history taken by medical students	61	53.0
Received physical examination from medical students	30	26.1
3. How do you feel when you have to be questioned or have a physical examination by medical students after seeing the doctor?		
Satisfied	77	67.0
Neutral	34	29.5
Annoyed	0	0
No data	4	3.5
4. How do you feel about your privacy in the presence of medical students in an examination room?		
Neutral	89	77.4
Less privacy	23	20.0
No privacy	0	0
No data	3	2.6
5. How satisfied are you regarding the presence of medical students in the examination room?		
Very satisfied	20	17.4
Satisfied	56	48.6
Neither satisfied nor dissatisfied	37	32.2
Dissatisfied	1	0.9

**Table 2:**

Attitudes of participants toward medical students (Con.)

Question	Number of Patients	Percentage
Very dissatisfied	0	0
No data	1	0.9
<b>6. Who would you allow to join your physical examination?</b>		
Both doctor and medical student	102	88.7
Doctor only	10	8.7
No data	3	2.6
<b>7. Are there any parts of your body that you would not have examined by medical students? (If the answer is <u>no</u>, go to Question No. 9 If the answer is <u>yes</u>, go to Question No. 8)</b>		
No	69	60.0
Yes	46	40.0
<b>8. Which of the following parts of your body <u>would you not</u> have examined by medical students? (More than one answer can be chosen)</b>		
Anus		
Female (79 females only)	12	15.2
Male (34 males only)	5	14.7
Breasts (79 females only)	13	16.5
Vagina (79 females only)	27	34.2
Others	0	0
<b>9. Which gender of medical student would you allow to perform physical examination?</b>		
Either male or female	73	63.5
Female	33	28.7
Male	2	1.7
No data	7	6.1
<b>10. Would you allow medical students to be in the examination room for your next visit?</b>		
Yes	106	92.2
No	1	0.9
No data	8	7.0

## Statistical analysis

Data were analyzed using SPSS version 11.5 (Chicago, IL). Quantitative data, such as age of the patient, were presented by mean and standard deviation or median. Qualitative data such as sex, hometown, level of education, monthly income, medical insurance, examination room specialty where they received the service, how often they received the medical service, and attitudes were presented by percentage. The correlation between factors affecting patients' answers for each question was analyzed by Pearson Chi-Square or Fisher's Exact test with odds ratio and confidence interval at 95%. All statistical analyses were two tail, and p-value < 0.05 was considered statistically significant.

### Results

A total of 115 participants completed the questionnaire. The average age of the participants was  $44.2 + 15.9$ . The majority of participants ( $n=81$ , 70.5%) lived in Bangkok and 60 participants (52.2%) had a bachelor's degree or higher. Information regarding level of education, monthly income, medical insurance, examination room specialty where they received the service, the frequency they received the medical service, and previous experience with medical students in the examination room is shown in Table 1.

Regarding the attitudes of patients toward medical students, 65 (56.5%) of the participants required the physician to notify or ask for their permission before bringing medical students into the examination room. The majority of the participants felt comfortable with the presence of medical students in the examination room. After physical examination, participants were also happy to answer questions or to redo the physical examination with medical students. However, 46 participants (40.0%) refused to have certain parts of their bodies examined by medical students. For specific organ examinations in females, 13/79 (16.5%) refused to have a breast examination, and 27/79 (31.6%) refused to have a pelvic examination performed by medical students. Many

participants ( $n=73$ , 63.5%) agreed to be examined by either male or female medical students, and almost all of the participants ( $n=106$ , 92.2%) would allow medical students to be involved in their next appointment. There was one participant who would not allow the involvement of medical students because of privacy issues and skepticism. Attitudes of patients toward medical students are shown in Table 2. Other comments from the participants are as follow:

- “I have no problem regarding medical students' involvement in my physical examination because they should meet with real patients to become good doctors in the future.”
- “I am OK to have medical students joining my physical examination but doctor should always be with them.”
- “Most medical students are nice and friendly.”
- “I am ok to have physical examination by medical students because of benefits and development in medical study.”

Factors affecting patients' attitudes were analyzed as follows: status of participant (patient compared with relative or parent), hometown (Bangkok compared with outside Bangkok), level of education (below bachelor's degree compared with bachelor's degree or higher), monthly income (less than 20,000 THB compared with more than 20,000 THB), medical insurance (others compared with government or private insurance), and previous experiences of patients with medical students (none compared with previously met medical students). The results showed that education level had the most impact on attitudes: 3.9 times as many participants with bachelor's degree or higher required a doctor to notify or ask for their permission before bringing medical students into the examination room, compared to those without a degree (Question 1) (95% CI = 1.7-8.9;  $p = 0.001$ ); 4.3 times of participants with bachelor's degree or higher felt they had no privacy with the presence of medical students in the examination room (Question 4) (95% CI = 1.5-12.7;  $p = 0.005$ ); 2.6 times

of these participants refused to be examined by medical students on certain parts of their body (Question 7) (95% CI = 1.2-5.7;  $p = 0.01$ ). Five point three times of females with bachelor's degree or higher refused to have breast examination by medical students (Question 8) (95% CI = 1.1-26.0;  $p = 0.02$ ) and 4.4 times of them refused to have pelvic examination by medical students (Question 8)

(95% CI = 1.4-13.5;  $p = 0.007$ ). Other factors including monthly income, medical insurance and number of meetings between patient and medical students also affected patients' attitudes, whereas other factors did not affect the answers of participants. The factors affecting patients' attitudes toward medical students are shown in Table 3.

**Table 3:**

Factors affecting patients' attitude toward medical students

Questions and factors affecting the answers	Odds ratio	95% CI	p-value
<b>Question 1 Should doctor notify or ask for your permission before bringing medical students into the examination room? (No vs Yes)</b>			
Status of the participants			0.003
Patients	1		
Relatives/parents	3.6	1.5 – 8.6	
Level of education			0.001
Lower than bachelor's degree	1		
Bachelor's degree or higher	3.9	1.7 – 8.9	
Monthly income			0.01
≤ 20,000 THB	1		
> 20,000 THB	3.2	1.2 – 8.3	
<b>Question 4 How do you feel about your privacy in the presence of medical students in the examination room? (Neutral vs less privacy)</b>			
Level of education			0.005
Lower than bachelor's degree	1		
Bachelor's degree or higher	4.3	1.5 – 12.7	
<b>Question 7 Are there any parts of your body that you would not have examined by medical students? (No vs Yes)</b>			
Level of education			0.01
Lower than bachelor's degree	1		
Bachelor's degree or higher	2.6	1.2 – 5.7	

Table 3:

Factors affecting patients' attitude toward medical students (Con.)

Questions and factors affecting the answers	Odds ratio	95% CI	p-value
<u>Question 8</u> Which of the following parts of your body would you <u>not</u> have examined by medical students?			
1. Breast			
Level of education			0.02
Lower than bachelor's degree	1		
Bachelor's degree or higher	5.3	1.1 – 26.0	
Medical insurance			0.006
Self -pay/universal coverage program /social insurance	1		
Government/privat	5.2	1.5 – 18.45	
Previous experience with medical students			0.03
Yes	1		
No	3.8	1.1 – 14.3	
2. Vagina			
Level of education			0.007
Lower than bachelor's degree	1		
Bachelor's degree or higher	4.4	1.4 – 13.5	

## Discussion

This study examined attitudes of patients or relatives who received medical services at a major teaching hospital. More than 50% of participants in this study were relatives or parents who, in the future, may be patients receiving services in other clinics or patients admitted for medical services at Faculty of Medicine Vajira Hospital. The results showed that patients, relatives or parents had positive attitudes toward the presence of medical students in the examination room, although they had to answer more questions or undergo further physical examination. The results were correlated with previous studies from the University of North Dakota. They reported that a majority of patients were satisfied with the attendance of medical students in the examination room of the gynecology clinic. Moreover, Washington School of Medicine conducted the study at their medical clinic and

reported a similar result where patients were more satisfied when medical students were present in the examination room than when they were outside.<sup>4</sup> However, this result was contradicted with the results of Gress et al. who studied patients' attitudes toward medical students in ambulatory care service at Johns Hopkins Medical Center.<sup>6</sup> They reported that patients were more satisfied when they met with the doctor than when they met with doctor and medical students. Patients felt that medical students did not improve the medical treatment, and were annoyed when they had to answer the same questions again and again. These results were similar to the perceptions of patients in a study by Isaacson et al. They found that patients were more satisfied when 1<sup>st</sup> and 2<sup>nd</sup> year medical students did not join the physical examination and they also felt that the treatment was more effective without medical students.<sup>5</sup>

Although patients or relatives who participated in this study had positive attitudes toward medical students, approximately 60% of participants requested that doctors should inform or ask for their permission before bringing medical students into the examination room. The factors that influenced this answer were participants who had a bachelor's degree or higher and an income of more than 20,000 THB a month. In addition, a higher number of participants with bachelor's degrees or higher also reported that they felt uncomfortable and did not want medical students to perform breast and/or pelvic examinations compared with those with lower education. The possible reason of these results may be that high socioeconomic patients or relatives expect to receive all treatment from specialists only. This factor was contradicted with Hartz et al. They reported that patients at Obstetrics-Gynecology outpatient clinics who had a university-level educational with bachelor's degree or above were happier to have pelvic examination by medical students than patients with lower education.<sup>3</sup> However, a similar finding in our study with that of Hartz et al. was that about one-third of female participants refused to be pelvically examined by medical students or wanted to be examined by a doctor only. They suggested that a doctor should always ask patient's permission as well as clearly explain the roles and responsibilities of medical students before allowing them to join the examination.

There were some limitations in this study. The data were only collected in the Faculty of Medicine of Vajira Hospital located in Bangkok, and only 30% of participants lived outside Bangkok. Therefore, the results might not reflect attitudes of patients or relatives who live in a non-metropolitan environment. In addition, the data in this study were collected from only outpatients who received the service at the clinics. Thus, their attitudes might be different from inpatients who have more chances to meet with medical students, and approximately one in five of the participants had never met

medical students and had no previous experience.

At present, the studies regarding attitudes, perceptions or satisfaction of patients toward medical students have been conducted only in Western countries. Therefore, this study is the first in Thailand, a country in South-East Asia. Differences of tradition and culture may affect attitudes of patients who receive medical services at a medical school based hospital. Thus, doctors as instructors must be aware of the balance between the rights of patients and the knowledge gained from the real physical examination of medical students. Giving notification or asking for permission from every patient regardless of who they are, their level of education or monthly income is always necessary before medical students are brought into the examination. This awareness can decrease dissatisfaction or the feeling of violation of a patient's rights. Instructors also have to realize that patients always have the right to refuse the participation of medical students. This is also a good example for medical students who can learn how to respect the rights of patients from a real situation in order to become good doctors in the future.

## Conclusion

Attitudes of outpatients toward medical students were positive. Giving notification or asking permission for medical students to join in the examination room is necessary. The physical examination which was most refused by female patients was per vaginal examination. Level of education was the most influential factor toward patients' attitudes.

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