

บทความวิจัย

ปัจจัยที่มีผลต่อความยินยอมของผู้ป่วยต่อการเข้าเรียนและ
ฝึกปฏิบัติของนิสิตแพทย์ในการตรวจอัลตราซาวด์

Factors Affecting on Patient Acceptance for Ultrasound Education

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บทคัดย่อ

วัตถุประสงค์ เพื่อสำรวจความยินยอมและปัจจัยต่างๆของผู้ป่วยที่เข้ารับการตรวจอัลตราซาวด์ ที่มีนิสิตแพทย์เข้าเรียน และตรวจร่วมกับอาจารย์แพทย์เพื่อเป็นข้อมูลสำหรับผู้ป่วยและการศึกษาทางการแพทย์ต่อไป

วิธีการ ศึกษาข้อมูลย้อนหลังจากแบบสอบถามผู้ป่วยที่เข้ารับการตรวจอัลตราซาวด์ที่โรงพยาบาลมหาวิทยาลัยบูรพา ตั้งแต่วันที่ 1 ตุลาคม 2559 ถึงวันที่ 31 มีนาคม 2560 สอบถามเกี่ยวกับความยินยอมหรือไม่ยินยอมและเหตุผลในการให้นิสิตแพทย์ร่วมเข้าเรียนฝึกปฏิบัติและตรวจอัลตราซาวด์ร่วมกับอาจารย์แพทย์

ผลการศึกษา มีผู้ป่วยที่ตอบแบบสอบถามจำนวนทั้งสิ้น 213 คนอายุเฉลี่ย 51 ปี (หญิง 77% ชาย 33%) ผู้ป่วยตอบยินยอมให้นิสิตแพทย์เข้าเรียนและตรวจร่วมกับอาจารย์แพทย์ 171 คน (81.7%) ส่วนใหญ่เหตุผลเพื่อการศึกษา (97.7%) ผู้ป่วยตอบไม่ยินยอมส่วนใหญ่เป็นผู้หญิง (94.9%) สาเหตุที่ไม่ยินยอมส่วนใหญ่เนื่องจากอายุ (70.3%) อัลตราซาวด์ส่วนเต้านมเป็นสาเหตุส่วนใหญ่ของการไม่ยินยอม ในผู้ป่วยที่ตอบไม่ยินยอมผู้ป่วยส่วนใหญ่จะเปลี่ยนใจยินยอมในการตรวจอัลตราซาวด์ครั้งต่อไปถ้าเป็นนักศึกษาแพทย์หญิงเข้าตรวจและไม่ใช้ส่วนในร่มผ้า

สรุป จากผลการศึกษาพบว่าผู้ป่วยส่วนใหญ่ยินยอมให้นิสิตแพทย์เข้าเรียนและตรวจร่วมกับอาจารย์แพทย์เนื่องจากเพื่อเป็นการศึกษา ในกลุ่มที่ไม่ยินยอมเกือบทั้งหมดเป็นผู้หญิงและเหตุผลสำคัญและเป็นส่วนใหญ่คือความอาย และอาจเปลี่ยนใจยินยอมได้ถ้านิสิตแพทย์เป็นเพศหญิงและไม่ใช้ส่วนในร่มผ้า

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Abstract

Objective: The current study aimed to explore the factors of patient acceptance and engagement in an ultrasound (US) education for undergraduate medical students.

Materials and methods: This is a retrospective study. Patients who attended the ultrasound unit at Burapha University hospital from 1 October 2016 to 31 March 2017 were asked to complete a questionnaire before undergoing an US examination. The questions of the survey were about the patients' willingness and the reason to be or not to be a model for student US education.

Results: There were 213 participants, mean age 51 years (F 77%, M 33%). Of these, 171 (81.7%) patients engaged in US education. Most of the reason for acceptance was for education (97.1%). The majority of the patients who did not engage were female (94.9%) and most of the reason was shy (70.3%). Breast examination was the most examination part of denial. Of the patients who denied engaging in US education, they will accept the future US education if the students are female, and if the examination part is not their intensely personal areas.

Conclusions: This study suggests that most of our patients will to engage in US education for medical students. Female patients and embarrassment are most of the reason for denying. Female students and the US study at the patient's exposed area are important factors of patient acceptance to undergo a future US education.

Keyword: Ultrasound, Education, Medical student, Patient acceptance

Introduction

Ultrasound (US) skill is essential for physician today. Literature has shown that physician performed focused US improve the diagnostic accuracy.[1,2] Regarding the clinical significance of US performance, many institutions have integrated US training in their curriculum.[3,4,5,6] The teaching of US skill with real-life patients is the best for student learning.[7,8] However, patients may be adversely affected by teaching if their rights are not respected.[9] Some patients may be reluctant to have medical students performing the US. There are many barriers to

patients' participation including; the nature of the patient's problem, a previous negative experience, the patient's concerning of confidentiality, patient's gender or student's gender, and even oriental culture. In oriental countries, women usually shy to open their intensely personal areas to other people. Manikins, cadaver models and simulated patients are the alternatives of learning [10,11,12,13] but these choices are costly. Browne et al [12] have demonstrated a significant improvement in the detection and correct characterization score for all residents pre and post-training using anthropomorphic breast phantom.

However, it cannot be substituted for a real patient. If we know the factors that are associated with patients not supporting medical student education, we can correct them and make the patients feel positive about participating in student learning. Very little literature has been published on patients' opinion regarding be a model for US education. To our knowledge, this is the first study which investigated the patients' attitudes of being models for US education in Thailand.

Materials and methods

A short survey was randomized distributed by a radiology clerk to patients before the start of attending US unit at Burapha University hospital during a 6-month period from 1 October 2016 to 31 March 2017. Patients who debilitated, could not read or speak, and aged less than 15 years were excluded. The questions of the survey were about the patients' willingness and the reason to be or not to be a model for student US education. The survey questions were shown in Appendix A. There were medical students followed by radiology staff doing the US if the patients accepted to engage in US education. If the patients denied engaging, there was only staff performing the US. The data were retrospectively collected. Data on patient demographics were summarized using descriptive statistics. Qualitative data are expressed as frequency, mean, and percentage (%).

Results

A total of 213 patients were enrolled. The response rate was 100%. The mean age of the patients was 51 years, with a range of 16 to 85 years. One hundred and sixty-nine patients (77%) were female, and forty-nine patients were male (33%). Most of the patients (81.7%) willed to engage in US education. The great number of the US examination parts was abdomen (105, 49.3%) and breast (93, 43.7%). Of the 39 patients (18.3%) who denied engaging, 37 (94.9%) were female. Breast examination was the most studying area of denial. The major reason of non-engaging was shy (70.3%). The reason for engaging or non-engaging is given in Table 1. We asked about the factors that make the patient will undergo future US education among the patients who denied participating. Female students were the majority of the factor that the patients felt comfortable. Table 2. describes the reasons for accepting future US education.

Discussion

US skill is a psychomotor skill that needs practicing on patients. Increased experience is necessary for the improvement of US skills.[14] Simulation in health education has been shown to increased confidence, psychomotor and professional skills¹⁰ but it cannot replace a real-life patient. The result of this study suggests that our patients recognize the importance of medical education and most of them will to be a model for US education. However, patients

Table 1 The reasons for engaging or non-engaging in US education

Reasons for engaging (174 pt, 81.7%)	Reasons for non-engaging	
For education (169 pt, 97.1%)	Female (37 pt, 94.9%)	Male (2 pt, 5.1%)
Getting good karma (4 pt, 2.3%)	Shy (26 pt, 70.3%)	Inconvenience of time (1 pt, 50%)
For education and getting good karma (1 pt, 0.6%)	Inconvenience of time (7 pt, 18.9%)	Previous bad experience (1 pt, 50%)
	Fear of missing results (2 pt, 5.4%)	
	Shy + Fear of missing results + Time-consuming (1 pt, 2.7%)	

Table 2 The reasons for engaging in future US education

Studying areas	No. of patient
Exposed areas	2
Abdomen	2
Exposed areas and only female students	1
Abdomen and only female students	2
Number of students	
<4	1
<3 and only female students	2
1 and only female students	1
Students' gender	
Female	13
Male	0

may not clearly understand the relevance of educational scans and medical care. A scripted introduction regarding the purpose of educational US was introduced by Goldflam et al.[15] In that study, the use of introduction script improved patient understanding the objectives and limitations of the scans. Moreover, especially Thai culture, some patients believed that they will get good karma if they do meritable things such as devoting themselves for education. Another benefits of using patients as teaching models include; students recognized patients as their teachers and increased personal gratitude, and vice versa patients feel personal satisfaction from helping and receiving.

Female students showed a high proportion of the factors that can convince patient accepting future US education in our study. In line with prior study, they demonstrated that most of the patients preferred a female sonographer for endovaginal sonography ($p < .001$).[16] This is probably because of the nature of US examination which is a study that may intrude into the patients' intimate body parts. Another factor may be due to women doctors were more likely to show the interaction styles patient prefer.[17] A number of students attending also affects the patient's acceptance. As demonstrated by Sakata et al [18] that 38.5% of parents who accepted the attendance of medical students preferred fewer than 3 students.

There are some limitations in the current study. This study was conducted in a single center and

it addressed only US education. Therefore the results cannot be generalized. Larger studies included multiple sites and other types of education will be required. We did not categorize patients according to their culture, education or economic status which may affect the decision as shown in the literature that parents with high-income earners would be comfortable with fewer medical students attending in the pediatric burns outpatient clinic than low-income earners.¹⁸ Future studies in more demographic details would be more beneficial. Furthermore, we did not collect the duration of scan per patient which was one of the factors that the patients concerned. Moreover, there was no post-scan questionnaire that some patients may change their minds after the experience of being a model. Immediate feedback from the patient promotes a student-patient interaction and a benefit of learning. In addition, the data on patient demographics were not a normal distribution.

Conclusion

This is the first study of Thai patient attitudes towards being models of US education for medical students. Most of our patients willed to engage in US education for medical students as the reason for education. Most of the patients who denied participating were female and most of the reason for denying was shy. Female students and the US study at the patient's exposed area are important factors of patient acceptance to undergo a future US education.

We hope that this study will encourage clinical teachers to actively teach medical students with real patients while recognizing patients' altruism.

Practice implication

Most of the Thai patients will to participate in US education. With respect to patients' altruism, the patients should be informed before the procedure. For female patients, female students are preferred if the study parts are their intensely personal areas. The more intimate setting of the examination room may help the patient to feel more comfortable.

References

1. Limchareon S, Jaidee W. Physician-performed focused ultrasound: and update on its role and performance. *J Med Ultras*. 2015; 23: 67-70.
2. Mai T, Woo MY, Boles K, et al. Point-of-care ultrasound performed by a medical student compared to physical examination by vascular surgeons in the detection of abdominal aortic aneurysms. *Ann Vasc Surg*. 2018; 52: 15-21.
3. Straus CM, Webb EM, Kondo KL, et al. Medical student radiology education: Summary and recommendations from a national survey of medical school and radiology department leadership. *J Am Coll Radiol*. 2014; 11: 606-10.
4. Poot JD, Hartman MS, Daffner RH. Understanding the US medical school requirements and medical students' attitudes about radiology rotations. *Acad Radiol*. 2012; 19: 369-73.
5. Saha A, Roland RA, Hartman MS, et al. Radiology medical student education: An outcome-based survey of PGY-1 residents. *Acad Radiol*. 2013; 20: 284-9.
6. Linaker KL. Radiology undergraduate and resident curricula: A narrative review of the literature. *J Chiropr Humanit*. 2015; 22: 1-8.
7. Limchareon S, Asawaworarit N, Klinwichit W, et al. Development of the ultrasonography learning model for undergraduate medical students: a case study of the Faculty of Medicine, Burapha University. *J Chin Med Assoc*. 2016; 79:445-9.
8. Limchareon S, Kongprompsuk S. A single static breast model education of ultrasound skill in final year medical students of Burapha university. *J Med Ultras*. 2018; 26: 143-6.
9. Amanda Howe, Janie Anderson. Involving patients in medical education. *BMJ*. 2003, 327: 326-8.
10. Gamble AS. Simulation in undergraduate paediatric nursing curriculum: evaluation of a complex 'ward for a day' education program. *Nurse Education in Practice*. 2017; 23: 40-7.
11. Almestehi M, Alomaim W, Rainford L, et al. Role of the virtual reality simulator (ScanTrainer) as a multidisciplinary training tool in transvaginal ultrasound: a systematic review and narrative analysis. *Radiography*.

<https://doi.org/10.1016/j.radi.2018.12.009>. Access 4th Feb 2019

12. Browne JE, Gu C, Fazio RT, et al. Use of Novel anthropomorphic breast ultrasound phantoms for radiology resident education. *J Am Coll Radiol*. 2019; 16: 211-8.

13. Zaia BE, Briese B, Williams SR, et al. Use of cadaver models in point-of-care emergency ultrasound education for diagnostic applications. *J Emerg Med*. 2012; 43: 683-91.

14. Hertzberg BS, Kliewer MA, Bowie JD, et al. Physician training requirements in sonography: how many cases are needed for competence? *AJR Am J Roentgenol*. 2000; 174:1221-7.

15. Goldflam K, Goett RR, Lewiss RE, et al. Patient perceptions of ultrasound educational scans in the emergency department. *J Emerg Med*. 2014; 46: 833-38.

16. Bennett CC, Richards DS. Patient acceptance of endovaginal ultrasound. *Ultras Obstet Gynecol*. 2000; 15: 52-5.

17. Mast MS, Hall JA, Roter DL. Disentangling physician sex and physician communication style: their effects on patient satisfaction in a virtual medical visit. *Patient Educ Couns*. 2007; 68: 16-22.

18. Sakata S, McBride CA, Kimble RM. Parent attitudes towards medical student attendance and interaction in the paediatric burns outpatient clinic. *Burns*. 2010; 36: 418-21.