A comparative study of medical students’ satisfaction towards learning between standardized patient and regular general patient treatment in the instruction provided at the Otolaryngology Outpatient Clinic, Phramongkutklao College of Medicine


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Categories: Education Management and Leadership, Teaching and Learning

Received: 25/10/2017
Published: 27/10/2017

Abstract

Background: Currently, the instruction of 4th year medical students involves learning from general patients who walk in to OPD ENT but is limited by the number of patients. Therefore, a concept was created to study volunteers or standardized patients and assess the medical students’ satisfaction level. Both methods comprised differing advantages and disadvantages without any previous study.

Summary of work: The patients were divided in 2 groups; a general patient group and a standardized patient group regarding 12 diseases which were made by appointment. The standardized patients were without urgent conditions and approved as volunteers using circular appointment such as allergic rhinitis, nasal polyp etc. The medical students had to complete history taking and physical examination in both groups during alterative weeks under the medical instructors’ control then evaluate satisfaction levels by completing a validated questionnaire and using focus group interviews.

Summary of results and discussion: The medical students’ satisfaction levels showed significant difference regarding standardized patients compared with regular general patients. Moreover, they were satisfied concerning the variety of diseases, that the patients could answer questions regarding their symptoms, could actively participate and were willing to be volunteers for the medical students. Questions involving motivational reinforcement for learning revealed no significant differences. The reason might be that the students had received sufficient knowledge from their classes. The focus group interviews indicated that some disease effects could not be observed at the
appointment time, for instance, vertigo and sinusitis. However, the advantage was that the patients concurred admirably, described their histories clearly and complied with follow-up.

**Conclusion:** The medical students had higher satisfaction levels with standardized patient learning than regularly general patient learning and preferred to experience a diversity of diseases. In addition, patients willingly concurred with the medical students’ instructions.

**Take-home messages:** Standardized patients are a proven benefit for medical students but without quantitative validation.

**Keywords:** Medical Student, Standardized patient

**Introduction**

According to the 1999 National Thai Education Act and its revision (second copy) in 2002(1), process of learning was adjusted to better match the interests and skills of the students. These student centered changes enhanced the real experience favored by the students because they would be able to think and process experience to develop the doctor skills required in the careers. The medical council and the national education act stress that working real patients is of significant importance.

Learning in the Otolaryngology Outpatient Clinic Phramongkutklao College of Medicine is required for 4th year medical students. The course necessitates three weeks of study, considered short. Due to these problems, we designed a study by recruiting 12 patients with 12 diseases as volunteers based on the students’ knowledge from the Competency Based Curriculum of the Medical Council of Thailand that the students are required to know to graduate as doctors.

**Material and methods**

The research employed a cross sectional study design involving 93 fourth year medical students currently enrolled in the three-week otolaryngology course.

The 12 patients willingly attended the program. These patients had been treated at the Otolaryngology Outpatient Department, Phramongkutklao College of Medicine. The inclusion criteria included no urgent conditions and approved volunteer status using circular appointments. These twelve diseases won’t affect or harm patients in any way including 1) chronic nasal obstruction, e.g., nasal polyp, 2) allergic rhinitis, 3) recurrent sinusitis, 4) chronic otitis media, 5) sensory neural hearing loss 6) otosclerosis, 7) Meniere’s disease, 8) chronic hypertrophic tonsillitis (CHT), 9) nasopharyngeal carcinoma after radiation and/or chemotherapy, 10) thyroid nodule or multinodular goiter, 11) laryngeal cancer s/p total laryngectomy and 12) hoarseness, e.g., vocal nodule. Each student had to undergo instruction regarding taking medical history and physical examination of patients under a medical instructors’ control. During the first week, the medical students had to study with general patients or walk-in patients depending on their willingness. Then they would study with the standardized patients the next week. After finishing the two model instructions, the medical students would evaluate their satisfaction using questionnaires and conducting focus group interviews. The results were analyzed using the paired t-test. General data was presented as mean, standard deviation or percentage.(2-4) This study was approved by the Ethics Committee Institutional Review Board of the Royal Thai Army Medical Department.
Results

The study showed the average age of students was 21 years old totaling 54 males and 39 females.

Average GPA 2.93.

The results of these assessments regarding the overall image of medical student satisfaction showed they had significantly higher satisfaction levels towards the standardized patients’ than the regular general patients’ learning. Moreover, they were satisfied towards 1) the diversity of diseases, 2) the patients’ answers and the details about their symptoms, 3) the participation and necessity of the patients concerning instruction, 4) the patients looked upon the medical students’ admirably and 5) the participants willingly became the medical students’ patients. Conversely, the parts involving stimulation and motivational reinforcement were valuable in creating curiosity, building relations and promoting the understanding of related theory. However, their desire for this learning model involving the next senior medical students indicated no significant difference as shown in Tables 1 to 2.

Table 1 shows the topics regarding the satisfaction levels medical students had towards the course concerning both models.

4=the most 3=more 2= less 1= the least

<table>
<thead>
<tr>
<th>Topics</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The teaching can motivate and build up the inspiration of learning.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2. The teaching has advantages relating to learning in this field.</td>
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<td></td>
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</tr>
<tr>
<td>3. The teaching relates to and promotes the understanding of the theory.</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>4. The selected patients have a variety of diseases.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. The patients can answer the questions and provide the details of their diseases well.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. The patients can participate and provide the need to promote the teaching.</td>
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<td></td>
</tr>
<tr>
<td>7. The patients were strongly willing to be experimental participants for the medical students.</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>8. The patients were willing to volunteer to be experimental participants for the medical students in the outpatient clinic.</td>
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<td></td>
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</tr>
<tr>
<td>9. You feel satisfied with the sampled patients.</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>10. You want this teaching model to be continued in the next generation of medical students.</td>
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</tr>
</tbody>
</table>

Table 2 shows the results of the study regarding the satisfaction level of medical students towards both teaching models.
The results of the focus group interviews revealed some diseases could not be clearly investigated or diagnosed during the previous stage. Examples of those diseases included vertigo condition and sinusitis. However, the advantage was that the patients were willing to cooperate in providing the details about their history and undergoing physical examination.

### Discussion

To the best of our knowledge, no research has been conducted concerning satisfaction levels of medical students between two teaching models, i.e., a model using scheduled volunteer patients and a regular teaching model. The only research that was previously found was a study about a method to improve the instructional courses.

Bernhard von Below et al.(5) studied the learning experience of medical students and facilitators of an Early Professional Contact Course (EPC): active and motivated students and trained facilitators. The purpose of this research was to analyze the teaching of a professional contact course for medical students, with a total of 86 students and 21 facilitators of doctors from Sahlgrenska Academy, University of Gothenburg, Sweden. After attending the study group of the EPC Course emphasizing knowledge, skills, attitude and team working, they completed evaluation sheets regarding their satisfactory levels towards the course. The results showed 60 medical students (70%) and the 15 assistants (71%) participated in this evaluation. Overall, people in both groups revealed no significant difference in satisfaction levels towards this teaching method.

Keith N. Williams et al.(6) studied ways to improve Bedside Teaching: Findings from a Focus Group Study of Learners by improving the bedside teaching model that allowed medical students to learn from real patients as much as they could. The research was intended for senior medical students and 1st to 2nd year internal medicine residents from June 2004 to February 2005. The students were divided in six groups. Each group studied bedside teaching and

<table>
<thead>
<tr>
<th>Topics</th>
<th>General patients mean±SD</th>
<th>Voluntary patients mean±SD</th>
<th>mean difference mean±SD</th>
<th>p-value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topics 1</td>
<td>3.89±0.31</td>
<td>3.93±0.25</td>
<td>-0.044±0.038</td>
<td>0.250</td>
</tr>
<tr>
<td>Topics 2</td>
<td>3.91±0.32</td>
<td>3.95±0.23</td>
<td>-0.033±0.042</td>
<td>0.442</td>
</tr>
<tr>
<td>Topics 3</td>
<td>3.83±0.38</td>
<td>3.91±0.32</td>
<td>-0.087±0.055</td>
<td>0.117</td>
</tr>
<tr>
<td>Topics 4</td>
<td>3.51±0.65</td>
<td>3.83±0.41</td>
<td>-0.326±0.077</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Topics 5</td>
<td>3.58±0.56</td>
<td>3.78±0.46</td>
<td>-0.196±0.07</td>
<td>0.006</td>
</tr>
<tr>
<td>Topics 6</td>
<td>3.81±0.4</td>
<td>3.95±0.23</td>
<td>-0.141±0.045</td>
<td>0.002</td>
</tr>
<tr>
<td>Topics 7</td>
<td>3.83±0.41</td>
<td>3.93±0.25</td>
<td>-0.109±0.042</td>
<td>0.012</td>
</tr>
<tr>
<td>Topics 8</td>
<td>3.75±0.43</td>
<td>3.93±0.25</td>
<td>-0.185±0.053</td>
<td>0.001</td>
</tr>
<tr>
<td>Topics 9</td>
<td>3.89±0.31</td>
<td>3.92±0.27</td>
<td>-0.022±0.041</td>
<td>0.596</td>
</tr>
<tr>
<td>Topics 10</td>
<td>3.94±0.25</td>
<td>3.93±0.25</td>
<td>0±0.038</td>
<td>1.000</td>
</tr>
<tr>
<td>Total</td>
<td>3.79±0.25</td>
<td>3.94±0.207</td>
<td>-0.14±0.032</td>
<td>&lt; 0.001</td>
</tr>
</tbody>
</table>

*Paired t test
conducted focus group interviews for evaluation. This method could benefit studying in medical field and also could enhance clinical skills. However, it had a limitation because it depended on the level of participation of the patients and the students had to pay attention. Also, the time period of studying this course was limited and might have related to the research that required participation from the patients and the students in the teaching class.

Kenneth Stahl et. al.(7) assessed the Impact of Teaching Patient Safety Principles to Medical Students During Surgical Clerkships. Originally, the theoretical part of the study, intended specifically for 1st year medical students, was added to the experimental part for 3rd year medical students, for a total of 67 students. After taking the courses, multiple choice tests and web-based surveys were assigned. The medical students who took courses in both years received significantly higher test scores than the students who studied only in the first year (82.9% vs. 75.5%, P <0.001). In addition, this affected to a greater of development of the students’ personality and experiences.

Studying the volunteer patients that were scheduled in advance resulted in benefits to the medical students. It could be seen that the overall picture resulted in high satisfaction levels regarding this teaching method. To explain this in detail, the medical students could obtain the patients’ disease profiles that were scheduled in advance and the participating patients that came to physical examination. The medical students could benefit more from this patients group than from experiencing general patients. However, the relation and promotion of theory and benefits from the learning showed no significant difference. Possibility, the students had sufficient study from the class and most doctors provided the opportunity to work with real patients, which reinforced the demonstration provided in class to reduce the interest in studying about outside patients.

Conclusion

The medical students were more satisfied towards the standardized patients’ than the regularly general patients’ learning and preferred to observe the diversity of diseases. The patients willingly concurred with the medical students' instructions.

Take Home Messages

Standardized patients are a proven benefit for medical students but without quantitative validation.

Notes On Contributors

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Acknowledgements

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https://doi.org/10.1016/0197-2456(81)90001-5


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https://doi.org/10.1016/j.jss.2011.04.031

Appendices

Declarations

The author has declared that there are no conflicts of interest.

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