

# Do Simulated Patients Better Prepare Medical Students to Become Good Doctors?

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## Abstract

Simulated Patients (SPs) provide an effective means of simulating medical examination. They can provide a realistic simulating environment, where the medical students can practice their history and examination skills. They can be used for multiple purposes including enhancement of student's communication skills and conducting an OSCE (objective structured clinical examination). Our survey of the medical students showed majority of the medical students from various years had an excellent experience with SPs, which enhanced their training in various domains.

## Introduction

Simulated Patients (SPs) or patient actors play an important role in providing realistic training experience to the medical students. They can be trained to mimic real patients' clinical symptoms and signs and provide similar experience, as of a real patient clinical encounter. Their ability to sequentially respond to student queries and provide real time feedback can be extremely helpful. SPs have an important contribution in helping assess the medical students during OSCE. There are also limitations to their use including disproportionate expression of symptoms, unable to adhere to the script, alteration of the sequence and personality specific emotional response.

Clinical exposure is essential to expedite the transition from medical student to proficient doctor. Interacting with simulated patients in an educational setting, teaches the skills that cannot be taught via didactic methods of learning [1,2]. It also reminds students of their end goal they are striving towards, which is to become crucial motivators [2-5]. The use of simulated Patients (SPs) is widely accepted in the medical field as a method of experiential clinical learning [6-8]. They promote the attainment of the same skill set as real patient interactions would impart [9-11]. SPs are trained to accurately portray the emotions, behaviors, and concerns of real patients [12-15]. They are given standardised scripts detailing patient history, which they relay whilst role-playing during simulated consultations [5]. This study aims to explore the efficacy of SPs as an educational resource for medical students.

## Aims/Objectives

To assess the efficacy of simulated patients as an educational resource for medical students.

## Methods

- 1- We did a literature search to assess the applicability of simulated patient's resource within the medical institutions for training medical students.
- 2- We also conducted a survey to get feedback from medical students in different years to understand the impact of SPs on student training.

The data was analyzed with descriptive statistics via the Microsoft Access database with the help of a statistician. It was expressed as average, median, rate, and percentages. The mean (SD) and p values were used to add significance, where applicable.

## Results

The results of literature search revealed 15 articles relevant to our study, which have been mentioned under the reference section.

The survey with the medical students revealed the following results:

43 (42%) responses were received after sending the online survey to 102 students. Majority of the students had exposure to SPs in addition to other modalities of medical training, including real patient interactions. 54% of the survey responses were completed by the 4<sup>th</sup> year medical students. 93% responders had experience with simulated patients. 80% of the students found them useful in history taking and communication skills followed by 78% who found them useful in the clinical examination. 73% of the students scored SPs 7/10 for helping them prepare for real world patient interactions. 72% of the responders rated their overall experience of training with simulated patients 7/10 and above [Table 1].

**Ethical aspects:** This study was approved by the research advisory council of our hospital (RAC no: 2231393) and was conducted in accordance with the ethical principles contained in the Declaration of Helsinki (2013), the ICH Harmonized Tripartite Good Clinical Practice Guidelines, the policies and guidelines of the RAC of the KFSH&RC, and the laws of Saudi Arabia.

## Discussion

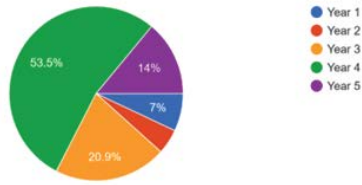
A direction towards the patient-centred approach has been taking precedence in the medical world. At the foundation of future

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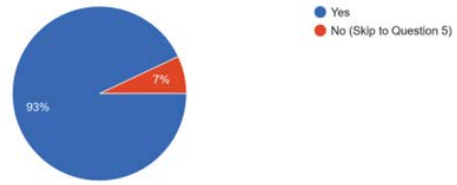
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**Table 1.** Medical Student Research on Simulated Patients

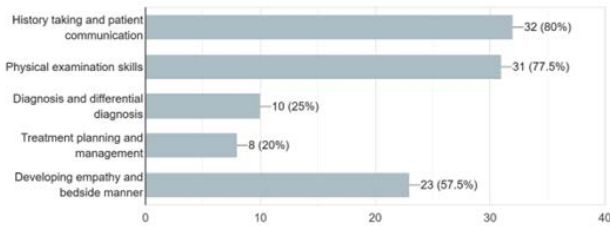
What is your current academic year of study?  
43 responses



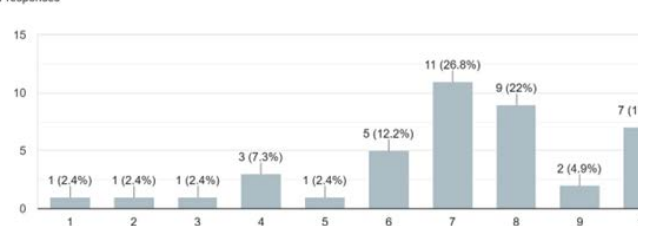
Do you have any training experience with simulated patients?  
43 responses



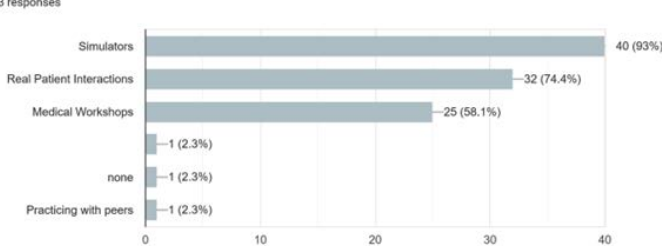
In which area of your medical training did you find simulated patients most useful?  
40 responses



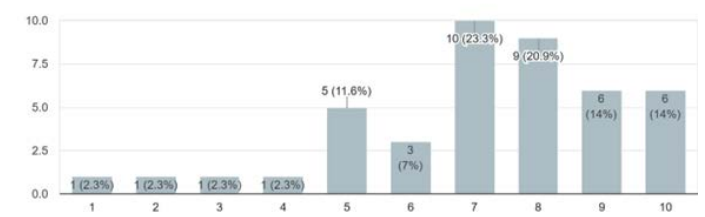
On a scale of 1 to 10, please rate how much simulated patients have helped you prepare for real-world patient interactions  
41 responses



Which modalities have you used for clinical skills training? (Check all that apply)  
43 responses



On a scale of 1 to 10, how would you grade your overall training experience with Simulated Patients?  
43 responses



healthcare workers, medical schools are emphasising the attainment of communication skills by using SPs [5,6]. They can be trained to provide implicit feedback to students during mock consultations. Receiving immediate feedback optimises acquisition of these skills [7]. In a study conducted by Lovink (2021) students highlighted how they recognised changes in facial expression and verbal queues as implicit feedback [8]. These queues helped them promptly reflect on the simulated situation and take immediate action. It also allows them to have a better consultation outcome and overall better learning experience. Students reported leaving the consultation with a sense of accomplishment, which develops their professional identity resulting in more self-assured individuals [8]. Feelings of confidence are associated with improved competency after training, highlighting the effectiveness of SP use [9]. However, there is limited evidence linking confidence levels post training to long-term competency [10]. It is also key to note that whilst prompt feedback may be beneficial to the majority, for some it may pose as a disruption [8].

There are several types of obtainable communication skills [9]. A study found that an SP-led history taking scenario initiated stronger focus on specific verbal skills, like summarisation. This differed from the station led by real patients, where students demonstrated a fixation on attainment of psychosocial history [1]. This difference highlights potential gaps in the acquisition of certain brackets of communication skills. Failure to be well-rounded in these skills deters from building

good rapport with patients. This causes not only patient dissatisfaction but increases the margin for miscommunication, leading to potentially life-threatening medical errors [11].

Elevated levels of anxiety are common in inexperienced students, prior to interaction with patients. If left unchecked it can lead to psychological instability, which poses a threat to patient care. Pre-clinical anxiety can stem from fear regarding causing harm to the patient or penalization [12]. Therefore, to overcome anxiety SPs can be used. They provide a realistic learning opportunity in a low-stake environment, allowing students to focus on achieving a more meaningful experience [7]. This is demonstrated by a study showing significant reduction in anxiety regarding clinical performance, before and after an SP training experience. Anxiety levels dropped from a score of 61.4 to 45.4, as measured on the shortened form of the Spielberger State-Trait Anxiety Inventor [13].

Students reported feeling less anxious for real consultations as they felt their interaction was an accurate representation of what is to be expected [8]. However, it can be difficult for SPs to balance the paradoxical requirements of providing a standardised experience and authentic responses during role play. SP training outlines strict guidelines requiring consistency in the performance provided to each student [14]. "Over-trained" SPs can upset the fragile balance required for a credible performance, which in turn withholds worthwhile insight from being gained by students [8].

SPs can be trained to simulate a wide range of physical findings, for instance wheezes and tremors, which makes them a useful tool for teaching students' elements of physical examination. However, there are limitations regarding the range of symptoms that they can produce [1]. Students found depicting certain symptoms such as different types of breathing challenging, thus preferred utilising real patients [7,15]. Understandably SPs only attempt to portray symptoms through their acting and may not always be successful in doing so, as they are not actually suffering from any illness [15]. However, utilisation of an SP with a pre-existing condition makes the possibility of finding a real symptom viable. Additionally, real patients can simulate some aspects of their symptoms leading to a less realistic experience [7]. A systematic review revealed the distinguish ability of SPs to real patients with results showing detectability in less than 15% of cases, attesting to their authenticity [1].

## Conclusion

SPs are trained to be optimal tools for clinical exposure for medical students. They provide realistic consultation environments for students to practice in, lowering anxiety regarding prospective consultations. They also bring unique qualities, such as implicit feedback, providing educational advantages to help students prosper both professionally and personally [7,8]. However, SPs come with limitations including authenticity in emulation of certain symptoms and behaviors and limitations to attainable categories of communication skills, which leaves a detrimental gap in attainable clinical knowledge [1,8,15]. For the best learning outcomes SPs could be used in conjunction to other resources. Whilst there is a plethora of evidence-based research corroborating their efficacy, further exploration on their utilisation and potential is still needed [4].

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