Implementation of standardized patient program using local resources in Avalon School of Medicine

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Introduction: The standardized Patient Program (SPP) is a standard educational training program designed to give pre-clinical medical students an opportunity to learn clinical skills by performing mock examinations on actors performing as patients, referred to as standardized patients (SP).

It bridges the gap between the time the students start their medical education until they pass their first licensure examination and begin training in clinical settings. Pre-clinical students are focused on learning the basic medical sciences and have not acquired the knowledge or skills required to interact with real patients. Exposure
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The implementation of standardized patient programs (SPP) in medical education aims to enhance clinical skills, professionalism, and patient-centric communication. This study at Avalon University School of Medicine (AUSOM) evaluated the effectiveness of introducing an SPP in the pre-clinical period.

**Methods**

A quasi-experimental study design was conducted among the 3rd semester (MD3) pre-clinical students of AUSOM. Students engaged with trained SPPs to simulate real-life clinical scenarios. The main objective was to assess changes in clinical skills and knowledge before and after SPP integration.

**Course objectives**

The primary goal of integrating SPP at AUSOM was to develop professional behaviors among students, including empathy, communication, technical skills, and patient-centric communication. The study aimed to evaluate the impact on student performance and understanding.

**Course design**

The SPP curriculum was designed to address competencies in clinical reasoning, communication, technical skills, and professional behaviors. It aimed to enhance student abilities to handle real-life clinical situations through quasi-real, yet safe learning environments.

**Data analysis**

Data were collected through pre- and post-SPP exams. Scores were compared using paired t-tests. The study maintained anonymity and confidentiality of participants.

**Results**

The integration of SPP led to observed improvements in clinical skills and knowledge among students. Students demonstrated enhanced clinical reasoning, empathy, and communication skills.

**Conclusion**

The SPP at AUSOM was effective in developing clinical skills and professionalism among pre-clinical students. This innovative approach sets a foundation for future SPP implementations in medical education, emphasizing the importance of local resources in enhancing medical training.
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Teaching methodology
The main teaching method for clinical skills course at AUSOM is the use of standardized patients (3). Clinical skills are taught through a hybrid teaching technique that follows a consecutive sequence of live demonstration, commentary with and without audiovisual aid and patient simulation. All of these standardized patients are the local personnel from the communities of Curacao who volunteered to take part in the SPP. They are trained to simulate the real patients, and present a common and challenging clinical scenario in front of the patients. Instructors are required to access all of these clinical encounters and provide feedback then and there.

Assessment and uniform grading system
AUSOM maintains its program within a multi-cultural background best suited for its diverse educational environment. Instructors and students have created self-assessments as a means to determine the effectiveness of key interactive principles by testing their comprehensive retention of clinical applications with the use of the SPP. Instructors provide feedback after each patient encounter. This encourages the instructors to adjust the program in order to create a better environment for the students to improve long-term retention of clinical communication skills learned during the pre-clinical years (4).

Examinations were conducted creating real time case-simulation with SP, and skilled clinical physicians trained with different conventions in clinical examination were used for grading the students. The standardized uniformity in grading was managed through the application of detailed rubrics. Examinations were graded strictly following the rubrics. The rubric points were earned not only for history taking, examination thoroughness and medical knowledge, but also for communication skills, rapport and empathy. The rubric is highly granular to quantify maximum criteria. Standardized patients were trained on the scripts that presented complaints which were most consistent in a clinical setting. Examiners were required to adhere to the rubric limits to grade each student within a same set of a standard final grading protocol. The overall final grading was changed to a 100 point scale for each student.

Results
24 students, 62.5% (n=15) male and 37.5% (n=9) female, participated in the study. The mean final examination scores of the students before the introduction of the SPP was 78.46±6.62 (SEM: 1.35, range: 89-70). Similarly, the mean scores of the students after the introduction of the SPP was 86.54±6.41 (SEM: 1.31, range: 98-65). The mean difference between the two groups was 8.08 (95% CI: 5.05-11.12). There was a statistically significant increment in the scores of the students after the introduction of the SPP in AUSOM (t=5.5058, p=0.0001), leading to an improvement in the overall grading of the students (Table 1).

Discussion
The SPP is more effective in conveying knowledge and skills when compared to a more conventional teaching approach; it was introduced into the teaching curriculum in medical school for two reasons: to present a case scenario where medical students are able to simulate all aspects of a case and to provide them with a consistent evaluation based on a rubric (5). The entire process allows the learner to encounter a “standardized patient” for exposure to a similar and challenging situation each time. As such, AUSOM has incorporated several key aspects of the SPP within its curriculum, focusing on the overall integration of pre-clinical students becoming situated in a regulated environment where they can further refine their technique. Early exposures of medical students to clinical sciences and simulated teaching methods including standardized patients have shown positive results (6).

The overall effectiveness of the SPP in medical schools in recent years has been questioned due to the steady deterioration of the clinical skills

Table 1: Comparison of the grading of the students on the basis of the scores obtained before and after the introduction of SPP.

| Grading system (Based on AUSOM) | Total no. of students |
|-------------------------------|-----------------------|
|                               | Clinical skills I (n=24) |
|                               | (Before the introduction of SPP) |
| Honors (96-100 %)             | 0                     |
| A (90-95 %)                   | 0                     |
| B (80-89 %)                   | 13 (54.17%)           |
| C (70-79 %)                   | 11 (45.83 %)          |
| F (<70 %)                     | 0                     |
|                               | Clinical skills II (n=24) |
|                               | (After the introduction of SPP) |
| Honors (96-100 %)             | 2 (8.33%)             |
| A (90-95 %)                   | 8 (33.33%)            |
| B (80-89 %)                   | 9 (37.5%)             |
| C (70-79 %)                   | 5 (20.83%)            |
| F (<70 %)                     | 0                     |
among the physicians (7). Since patients are aware of the students and residents’ training on them, they are becoming increasingly worried. Consequently, clinical medicine has changed to concentrate more on the patient’s safety and quality, rather than on teaching and education. In order to adapt to this change, educators have had to restructure their curriculum, as well as increase self-directed learning and independent research. Despite this adjustment, a division still remains between the classroom and clinical environment. This is why many medical students feel as though they were lacking the skills required to be a proper physician. Medical simulation through the SPP was thus introduced as a way to bridge this education gap. Therefore, by introducing medical students to the SPP prior to their real patient encounter, we will be able to reduce the amount of error amongst newly trained physicians (8).

Avalon has learned from SPPs conducted in other locations, but has made an attempt to implement it in a way that fits Avalon’s Caribbean medical educational environment. For example, Germany requires SPPs as part of the national requirements for medical schools (9). Historically, Dr. Howard S. Barrows, MD, created the first SPP for his third-year clerkship while teaching at the University of Southern California (USC) in 1963, which is followed by a consortium of many medical schools worldwide (10, 11). A United States national survey conducted with directors of clinical skills programs in all 141 Liaison Committee on Medical Education (LCME) accredited schools showed 101 responders indicating a median of 59 hours of instructor time spent with pre-clinical students learning how to take medical history (12). The acceptance of the SPP, as a valid teaching method, is well illustrated by the number of responders to this study.

The recent success of the SPP can answer questions to various limitations. Prior to developing consensus-based criteria like grading rubrics, the physician’s’ agreement on the importance of the reported criteria was not uniform (13). These challenges in AUSOM were tackled by using the rubrics with a set of uniform guidelines. Avalon’s SPP is beneficial to pre-clinical students in that it provides them with the opportunity to be introduced to real-life case scenarios, while also evaluating their comprehensive understanding of basic sciences. Recommendations of future modulations to improve the Avalon SPP include gathering more data from Caribbean Schools with SPP for comparative analysis, adding clinical symptoms to cases for greater challenge and providing more training for SPs. It is recommended that a collective study should be conducted to evaluate the overall implementation of SPP in a scientific way.

It would be interesting to analyze the SPP further that has now been in operation with an objective of bridging the gap between the times of students starting their medical education until they pass their first licensure examination and begin training in clinical settings. Since this study merely focused on the effectiveness of the SPP in AUSOM, a point of interest is the effectiveness of SPPs in other schools. SPPs have been well established with many schools over the last sixty years, but the objective effectiveness of SPP has not been well documented. As per the LCME survey (12), with only 59 hours of instructor time spent with most students during pre-clinical studies, few schools have analyzed the results using objective criteria. Although it is probable that some schools may have done such an analysis, none has published the results. Consequently, it is not possible for one school to compare their effectiveness against another at this time. This would require a uniform reporting tool for consistent analysis of each program with published results of the data. It is, therefore, recommended to devise and implement a uniform “SP” program and assessment technique best suited for the modern learning environment early in preclinical years.

Conclusion

Introduction and implementation of SPP in pre-clinical years increased the overall students’ performance in clinical skills. This dynamic educational training program provided us with an opportunity to learn clinical skills by performing mock examinations on actors performing like patients. SPP introduced in AUSOM had a remarkable impact on refining the students’ cognition toward clinical skills reflected through their performance. It is pertinent that clinical skills should be introduced in the pre-clinical years within the norms of the modern scientific and educational standards.

Conflict of Interest: None declared.

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