

Standardized Patients in Physiology Curriculum of India for Effective Learning of Basic Science Concepts, Clinical and Communication Skills: A Proposed Change

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INTRODUCTION

Clinical teachers often complain that medical students have forgotten the knowledge that has been taught at pre-clinical levels at the time of entering the clinical part of education.^[1] There has been an almost universal agreement that medical students should spend considerable time studying basic science and that a solid foundation in basic science is necessary pre-requisite for competent clinical practice.^[2]

Despite efforts to provide high-quality lectures and computerized laboratory exercises, only a small proportion of the material taught is effectively learned and student performance does not meet our expectations. Student performance on questions that aimed to test the application of understanding of the material was significantly lower than questions testing for the assimilation of the information.^[3] As a result, alternative teaching tools which bring about effective learning and professional outcomes in students have to be contemplated and included in the curriculum.^[4,5]

A Standardized Patient (SP) is a person who has been coached to accurately and consistently recreate the history, personality, physical findings, and emotional structure and response pattern of an actual patient at a particular point in time. SPs make a significant contribution to medical education in the form of teaching, assessing, and providing feedback to students at

all levels of their undergraduate and graduate careers.^[6,8] Standardized patients would therefore, help in making the teaching more impressive, learning more effective, and providing proper feedback for students during the process of learning communication and clinical skills, before they actually encounter real patients in second phase of their graduation. This would help the students and the real patients alike to face each other more confidently in their future encounters, which in turn, would help in providing proper health care for the society. Indian literature does not have a say on the incorporation of the usage of standardized patients in physiology curriculum.

Barrows HS defined the term standardized patient and used as an umbrella term for both a simulated patient (a well person trained to simulate a patient's illness in a standardized way) and an actual patient (who is trained to present his or her own illness in a standardized way). The author also highlights the advantages of standardized patients for both learning and teaching.^[5]

Effectiveness of simulation has been demonstrated in the teaching of basic science and clinical knowledge, procedural skills, teamwork, and communication as well as assessment at the undergraduate and graduate medical education levels.^[8]

The activities and learning situations incorporating SPs provided the medical students

with an active learning situation that enhanced their educational experience in general and learning points about bioterrorism specifically.^[6]

In a survey, almost 90% of students found the SP sessions engaging, over 75% reported a better understanding of the importance of biochemistry to the practice of medicine, and in excess of 70% reported an increased desire to study basic sciences, especially if more courses incorporated SP experiences. Students find early clinical encounters with simulated patients, in large classrooms, an engaging way to introduce basic science concepts and report that their utility as a teaching method should be expanded.^[9]

SP interactions were helpful in preparing students for real patient interactions (particularly with regard to communication skills and self-confidence), in the teaching of “intimate” physical examination skills, and in giving constructive feedback on communication skills.^[10]

SPs have important advantages compared with real patients—for example, their feedback. SPs were better informed about the purpose of the consultation and provided the student with more specific feedback.^[11]

The use of SPs for teaching and testing can be a positive addition to a curriculum and help to evaluate those curricular components that address providing students with the clinical skills necessary for quality patient care.^[4]

Objective: To propose a curricular innovation in physiology by incorporating the usage of standardized patients in teaching basic concepts, communication skills and basic clinical skills for first phase medical undergraduates in the physiology curriculum of Rajiv Gandhi University of Health Sciences (RGUHS), Karnataka, India.

METHODS

This paper presents a curricular innovation in the Department of Physiology, S. Nijalingappa Medical College, Bagalkot, affiliated to RGUHS, Karnataka, India. The innovation would be the

incorporation of usage of standardized patients in physiology curriculum, to make an effective learning possible in first phase medical undergraduates, in terms of understanding of the basic concepts and their application, learning basic clinical and communication skills, before encountering real patients in the second phase.

The six-step approach by Kern would be followed in planning, implementing and evaluating the curriculum.^[12] The targeted learners would be the first phase medical undergraduates. They would not have any previous training experience with regards to standardized patients. Some of the students may have partial theoretical knowledge, but they would have a positive attitude towards learning with standardized patients. Problem based learning and Kolb’s theory of learning would be incorporated in the instructions. The reinforcing and enabling factors for this innovation would be self-insight, motivation by the faculty, encouragement by the management, and scholarships. The barriers in implementation of this innovation in the curriculum would be deficient infrastructure in terms of manpower, facilities, time & funds. The resources for learning would be the digital library, textbooks, biomedical journals and periodical manuals, unpublished literatures, expert researchers.

The stakeholders for this curricular change would be the students, teaching faculty, medical educators, and administrative faculty, and their needs with respect to the curriculum would be well defined, specific and measureable objectives, clear outcomes and cost-effectiveness.

Information about pre-existing knowledge and level of motivation of each learner, faculty willingness to participate in programme, and availability of funds can be accessed from formal and informal interviews with faculty and students.

Learner’s Objectives: At the end of the course, the student should be able to -

1. Define a standardized patient (10 of 10).
2. Demonstrate at least two clinical skills on a standardized patient and get a feedback.

3. Apply the basic concepts in the diagnosis of disease of standardized patient (4 of 5).
4. Demonstrate effective communication skills with the standardized patient (8 of 10).
5. Modify the skills and application of concepts on standardized patients until 10 of 10.
6. Rate highly the incorporation of the usage of standardized patients in the physiology curriculum.

To achieve the specified objectives, educational methods like active lecturing, team-based learning, reflection on experience, discussion and real-life experiences will be incorporated. The resources required will be in the form of manpower (faculty and standardized patients), funds for the patients and reading material supplied, and the time consumed would be about three hours a week, which would be feasible to implement.

Implementation

Organization of Learners and Faculty

Targeted learners = 100 students of I MBBS (medical undergraduates, India) – 7th to 10th month of the one year course of first phase MBBS will be utilized to introduce standardized patients.

- A batch (35 students) – 5 groups of 7 students (5 faculty and 5 standardized patients)
- B batch (35 students) – 5 groups of 7 students (5 faculty and 5 standardized patients)
- C batch (30 students) – 5 groups of 6 students (5 faculty and 5 standardized patients)

Learning Schedule

3 hours per week X 12 weeks = 36 hours.

- First and second week: Introduction and advantages of standardized patients;
- Third, fourth and fifth week: Learning communication skills with feedback from standardized patients;
- Sixth, seventh and eighth week: Learning clinical skills on standardized patients;
- Ninth, tenth and eleventh week: Learning to apply basic concepts in understanding the pathophysiology of the disease of standardized

patients;

- Twelfth week: Discussion about the learning experiences using standardized patients.

Resources Required

- Personnel: 5 trained faculties; 5 trained standardized patients; 2 supporting staff (1 technical and 1 non-technical)
- Facilities: Classroom with 35 seats; Clinical examination laboratory with five cubicles; Advance reading materials about utility of standardized patients
- Funds: approximately ₹ 150,000 per annum
- Time: 3 hours per week X 4 weeks = 12 hours for teaching faculty (1st month); 3 hours per week X 20 weeks = 60 hours for standardized patients (2nd to 6th month); 3 hours per week X 12 weeks=36 hours for learners(7th to 10th month)

Support

Internal support from the faculty, departmental chair, dean, and board of studies of RGUHS University will be obtained by discussions highlighting the utility of standardized patients. External support from the college management authorities and accreditation bodies will be obtained by discussions about research articles highlighting the improvement in student learning and hence an improvement in quality health care services in the society.

Administrative Mechanisms to Support the Curriculum

- Structure: Learner or standardized patient --- problems→ Faculty ---problems→ Departmental Chair ---problems→ Curriculum director ---problems→ Dean ---problems→ Board of Studies, RGUHS.
- Communication: Information about the contents of the curriculum, the progress of the learners, evaluation data, etc. are conveyed by the curriculum director to the dean, board of studies, RGUHS, departmental chair, faculty and learners through e-mails, site visits, reports and meetings.
- Operations: Curriculum director and faculty → Preparation of schedules and curricular materials; Supporting staff → Distribution of

schedules, curricular materials, evaluation materials, etc.

- Scholarship: Curriculum director → IRB approval → disseminates information about curriculum → Presentations/Publications.

Anticipated Barriers:

There would not be any financial barriers or competing demands. People's attitudes and job security could be overcome by emphasizing on the current need for curricular change and accreditation gains.

Plan to introduce the curriculum:

Curriculum can be implemented as a pilot study on the final phase medical undergraduates, and thereby full implementation could be carried out in first phase medical undergraduates.

Evaluation

The users of the curriculum i.e., the learners, faculty, departmental chair, curriculum directors, and dean (internal users) would help in the process of evaluation, by providing feedback and motivation, and educators and curriculum developers from other institutions (users outside the institution) would benefit from the presentations/publications made in this regard.

Evaluation of the curriculum would be done by conducting formative (every month) and summative assessments (at the end of the course) for the learners, generating curriculum reports each year, and receiving feedback from the stakeholders. The evaluation results can be used to assess the student's achievements, document the accomplishments made by curriculum developers, and as a basis for presentation/publication.

Formative Level of Evaluation

Individual Level - Student assessment: At the end of each month, a set of questions will be used to assess the student by using a check list.

Program Level- Open ended questions about SWOT will be posed to the faculty, learners, curriculum directors involved in implementation

every month.

Summative Level of Evaluation

Individual Level critical evaluation questions:

- Faculty assesses as per checklist by the end of course if each student is able to demonstrate at least two clinical skills on a standardized patient and get a feedback (20 minutes).
- Faculty assesses as per checklist by the end of course if each student is able to apply the basic concepts in the diagnosis of disease of standardized patient (4 of 5) (20 minutes).
- Faculty assesses as per checklist by the end of course if each student is able to demonstrate effective communication skills with the standardized patient (8 of 10) (20 minutes).

Program Level

- Percentage of learners getting B or More than B grade (performance audit)
- Open ended questions about SWOT to faculty, learners, and curriculum director involved in implementation (questionnaire)

Evaluation Design

- Piloting-in: Single group posttest
X----- O
- Full implementation: single group Pretest & Posttest
O1-----X-----O2

Data analysis of the evaluation results would be done by descriptive and analytical statistics. Reports of the evaluation data will be submitted and discussed among the users of curriculum every month.

DISCUSSION

In the present paper, we discuss the incorporation of standardized patients in teaching basic concepts, communication skills and basic clinical skills for first phase medical undergraduates in the physiology curriculum of Rajiv Gandhi University of Health Sciences (RGUHS), Karnataka, India.

Such a curricular change would bring about active learning in the students. This would be included in first phase of medical graduation so as to prepare these students to encounter real patients with much more confidence. SPs help in achieving perfection until satisfaction, which would improve the quality of these future professionals and thereby, the quality of services provided by them. The purpose of this paper would be served without much financial burden, with the existing facilities and a bit of training.

CONCLUSION

Proper understanding and application of the concepts in the basic sciences, and effective learning of clinical and communication skills using standardized patients would help in improving the quality of health care services in the society.

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