Bangladesh J Obstet Gynaecol, 2021; Vol. 36(2): 126-131

Review Article

Role of Standardized Patients in Medical Education

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Abstract:

The objective of this study is to aware medical faculties about the advantages of use of Standardized patients in medical education.

It is a review paper, written after reviewing the articles on "Standardized Patients in medical education"

Standardized Patients (SPs) are healthy individuals who are trained to simulate real patients in a realistic and reliable manner. SPs perform several roles in medical education like, they help medical learners to learn and be evaluated all domains of clinical medical competence effectively without debilitating the real patients, they can be sent unannounced in physician practices to evaluate standards of care, they can also use in health informatics research, etc.

Use of SPs are advantageous over real patients in terms of convenience, standardization, compression/expansion of time, safety, feasibility, efficiency, skill transfer, feedback, tolerance, critical care or team training, integrated procedural performance instrument (IPPI), and evaluation of rare diseases. There are some inconveniencies as well, for example, recruiting and giving high-quality training is time consuming and costly, SPs can never replace the rich encounter with an actual patient, simulation of all physical signs is not possible, and above all some examiners may not like SPs in the examination.

Considering all the facts it can be concluded that standardized patients are unquestionably valuable implements in medical education both for teaching and assessment. It is not to replace the real patients from the medical education but to produce a safe bridge between medical students and novice doctors with real patients.

Key words: *Standardized Patients, simulated patients, medical education.*

Introduction:

The term standardized patient has gone through many transmutes as the process itself has been sophisticated since its initiation. There have been many other names attempting to describe this spectacle. These are programmed patients, teaching associates, patient instructors, patient educators, professional patients, surrogate patients, and simulated patients. All these terms are indicating to the person who has been carefully trained to take on the characteristics of a real patient to provide an opportunity to a medical or nursing student to learn or be evaluated.[1]

Howard S. Barrows, who is known as the father of the innovation of standardized patients, defined clearly different roles for people who are used for teaching and assessment in medical education and not all of them are standardized patients.[2]

Role-playing is a specific technique that has the most educational advantage for the role player. In role-playing someone is given a role to sanction, such as that of a patient or a physician, and plays it on an "improvise" basis. The players are usually students. Playing roles of patients can give them a first-hand idea what it's like to be in the helpless patient role.[2]

Pseudo-patients are instructed to give a complaint that would allow them to achieve access to a health care setting or to receive care. This has been used in

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the past to evaluate admission and care of patients in psychiatric settings and to evaluate physicians' abilities to educate patients about various types of medication.[2]

Practical instructors are individuals who have been trained to teach the pelvic or genito-rectal examination as the student is performing these on them. It's a very powerful technique for giving the students the skills and sensitivity they need to perform an accurate examination.[2]

Patient instructors are patients who have been carefully educated about their own illness and how they should be evaluated on history and physical. They can give feedback to the medical students or residents about accuracy and completeness of the workup and show how physical findings can be better elicited.[2]

Subjects are used to demonstrate living anatomy and play no particular teaching or patient role.[2]

Simulated patients are normal person who has been carefully coached to accurately portray a specific patient when given history and physical examination. Here, all aspect of standardization is not considered.[1]

Standardized patients are both simulated patients and actual patients who have been coached to present their illness in a standardized, unvarying way.[1]

Barrows coined the term-standardized patient to replace the term-simulated patient because it underlines the major advantage to provide a patient problem that will not vary from student to student.[2]

Thus, Standardized Patients (SPs) are healthy individuals who are trained to simulate real patients in a realistic and reliable manner, according to the following criteria[3]:

1. Standardized patients are judiciously selected to match crucial characteristics of the patient case being represented, such as age, gender, and appearance.
2. Multiple standardized patients can be used to represent the same patient case in a standardized way.
3. Standardized patients are methodically trained to replicate every aspect of the patient case, from medical history and physical findings to body language and emotional characteristics.
4. In a particular scenario the simulation may involve a physical examination or a patient history, or both.
5. They are assessed for performance before the actual simulation takes place.[3]

The term 'Standardization' is defined as a framework of agreement to which all relevant parties in an industry or organization must adhere to ensure that all processes associated with the creation of a good or performance of a service is performed within set guidelines. This is done to ensure the end product has consistent quality, and that any conclusions made are comparable with all other equivalent items in the same class.[4] Standardization can help to maximize compatibility, interoperability, repeatability, or quality.

History:

The process of using patient actors began in 1963 by a neurologist, Dr. Howard S. Barrows, from the University of Southern California to teach medical students during third year neurology clerkship[5]. The experiences were reported but not widely accepted[6]. It was thought to be too expensive and unscientific. In 1968 Dr. Robert Kretzschmar, gynecologist, and obstetrician of University of Iowa, introduced Gynecological teaching associates (GTA) to teach pelvic exanimation.[7] Dr. Paula Stillman trained another set of standardized patients in 1970 at the University of Arizona. Her pilot program had local actors depict the mothers of imaginary children. The mothers would explain the illness the unseen child was suffering from, necessitating the medical students taking the history to develop differential diagnoses based on the mother's demonstration.[5] At the same time Dr. Ray Helfer, another pediatrician, at Michigan State University (MSU) trained 'programmed mother' to give histories of common pediatric problems.[5] Dr. Stillman later progressed to recruiting 'Patient Instructor". A patient instructor was a patient with chronic stable findings used to teach physical examination and diagnostic skill.[5] The incorporation of simulated patients into testing situations promoted the change in terminology to the current standardized patients.[5]

In 1984, the Josiah Macy, Jr. Foundation supported a conference at Southern Illinois University called "How to begin reforming the Medical School Curriculum".[1] The participants were the dean and educators from different medical schools. This conference ultimately

triggered the use of Standardized patients for evaluation of clinical competence and association of schools interested in application of standardized patients to the evaluation of competence were formed. The National Board of Medical Examiners (NBME) Standardized Patient Project was the result of this collaboration.[1] In 1993, the Association of American Medical Colleges sponsored a survey of medical schools regarding the use of standardized patients. More than one fourth of schools reported using standardized patients and greater than one fourth described using standardized patients for a comprehensive examination before graduation.[1] Medical Council of Canada was the first to incorporate the Standardized patients into licensure examination in 1993[1]. The Educational Commission of Foreign Medical Graduates (ECFMG) ran pilot tests of a standardized patients-based certification examination in 1990 to 1991 but ECFMG formally adopted standardized patients in assessment in 1998[1]. Two large review articles confirmed the validity, reliability, and utility of the Clinical Practical Examination [2, 8]. These findings led to an endorsement by the NBME of a standardized patient examination to be implemented in 4 to 7 years. The first required standardized patient examination for US medical students Step II Clinical Skills was held in 2004 as part of the national licensing process[9].

The training and recruitment of Standardized Patients:

Standardized patients can be recruited in a variety of ways. In Dundee medical school they have found the effective approach through an advertisement in the local paper[10]. This may produce a good number of responses, with many suitable for recruiting as standardized patients. Some prefer to target groups such as amateur actors, students, relatives of staff and schoolteachers. In Canada the advertisement through website is the current process[11].

The briefing and training of standardized patients is critical to the success of the program. The extent of training required will vary with the use to which the standardized patient is to be put. They need to be available, motivated, integrated in medical education, and smart. It is important that they do not have bitter experience against the medical profession, and they should have reasonable communication skill.[12]

Dr. Barrows[13] describes three components of training of the standardized patients; these are the history, the physical findings, and the dress rehearsal. A thorough history and summary of the patient's problem is first given to them. Their own experience and background are used as much as possible. This makes it easier for their presentation to seem natural and spontaneous. The patient's symptoms are then clarified to them avoiding medical terminology. For many of them no further training is required and can proceed to a dress rehearsal. There after an unfamiliar doctor examine the standardized patient. The trainer observes this. The doctor and the trainer give feedback to the standardized patient. They may also learn to simulate physical findings. This coaching method as described by Barrows is commonly denoted as 'method acting'[13].

Thew & Worrall[14] have described the Leicester approach to training standardized patients, which is based on videotapes of actual general practice consultations. The Leicester approach of training process used is as following steps:[14]

Consultations are recorded where the patient characteristics appear to match the age and sex of the simulator.

The simulator observes the video recording and decides whether it is possible to identify sufficiently with the patient.

The consultation is then discussed comprehensively at a mutual viewing with the doctor who recorded the consultation. The simulator is encouraged to query from the patient's perspective about issues relevant to the consultation.

It is left to the simulator to decide how to present the patient. Personal effects are often necessary to help the simulator become the patient.

The patient simulator has 'first time' consultations with at least four other trainer doctors.

The standardized patient and the originating doctor decide which issues are to be assessed in the consultation. These are incorporated into a checklist.

The standardized patients are assessed based on:

Accuracy: - how clearly does he/she replicate the picture?[13]

Consistency: -how reproducible is the representation done by the standardized patient?[13]

Replicability: - can several patients trained at the same site produce the same simulation?[13]

Portability: -can the simulation produced at different sites?[13]

If trained properly standardized patients can simulate following physical findings[2]:

Tenderness in any area including abdominal tenderness, rebound tenderness, acute abdomen, airway obstruction, anaphylactic shock, aphasia, asterixis, atheotosis, Babinski's sign, hyperactive tendon reflexes, hypomania, incoordination, chorea, parkinsonism, nuchal rigidity, Kernig's sign, Brudzinski sign, Beevor's sign, carotid bruit, thyroid bruit, renal artery stenosis, chronic bronchial diseases, cheyne-stokes respiration, Kussmaul respiration, wheezing, pneumothorax, shortness of breath, tachycardia, coma, unresponsiveness, confusion, dysarthria, decerebrate fit, dilated pupil, doll's eye response, paralysis in any area, gait abnormalities, hearing loss, hematemesis, hypo or hypertension, joint warmth and redness, joint restriction, lid lag, ptosis, visual loss, muscle spasm, muscle weakness, perspiration, photosensitivity, mental retardation, seizure, sensory loss, tremor, vomiting, stiff man syndrome etc.[2]

Standardized patients are a valuable resource and once trained, it is important to keep them in a program. Strategies of Stillman is[12]: Work with them intermittently throughout the year if they are used only one to two days in a year they might be lost, allow them to teach or give feedback to students this maintains their interest in the program, and provide ongoing positive reinforcement to them about their contribution.[12]

In Canada, standardized patients' program was first established at the McMaster University. Soon after, the program began at the University of Toronto. The Standardized Patient Program at the University of Toronto has been in the forefront of progressive, innovative health care education for over 25 years. Here a collaborative teams design and deliver a range of health educational curriculum, including evaluations, and disseminate scholarship related to live simulation methodologies through workshops, presentations, and peer reviewed publications[11].

Role of Standardized patients:

The Accreditation Council for Graduate Medical Education (ACGME) emphasizes there are six domains of clinical medical competence[15]. Thus, professional competence should be taught and evaluated by covering all these domains of health care practice. The six domains are: Patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice.[15]

Practicing with patients is indispensable to learn all these domains of medical competence. Standardized patients could help medical learners to learn effectively without debilitating the real patients.[15]

For each domain of competence, Miller suggested a framework that argues there are four levels at which a medical learner should be assessed[16]. The levels are:

Knows (knowledge)— capacity to recall facts, principles, and theories.[16]

Knows how (competence)—expertise to solve problems and describe procedures[16]

Shows how (performance)—demonstration of skills in a controlled setting[16] and

Does (action)—behavior in real practice.[16]

Standardized patients are increasingly being used to assess the first three levels of learning because of its ability to program and select learner-specific findings, conditions, and scenarios; provide standardized experiences for all examinees, and include outcome measures that yield reliable data[17].

Standardized patients are extensively used in medical education as[1]

- They allow students to exercise and develop their clinical and communication skills.
- They usually deliver feedback after each session.
- They are very valuable to train students to understand professional conduct in potentially uncomfortable situations such as pelvic or breast exams.
- They help to train student significantly to face the test of clinical skills in Objective Structured Clinical Examination (OSCE).
- They use checklist to record the details of the encounter.

Standardized patients have also been sent unannounced in physician practices to evaluate standards of care.[1]

They are also employed in health informatics research.[1]

Advantages of using standardized patient instead of real patients:

It is important to realize that standardized patients who are simulating an illness have advantages over real patients. These are:

Convenience: standardized patients can be available at any time and in any setting like classroom, examination hall, and hospital ward or in many non-clinical areas. They are likely to be more reliable and may tolerate more students than real patients[1].

Standardization: The standardized patient can be trained to respond more consistently in the examination than the real patient, can be duplicated to allow multiple examinations to be administered and allows direct comparison of the students' clinical skills, locally as well as nationally and internationally[18].

Compression/expansion of time: standardized patients can provide a longitudinal experience and enable students to follow through patients over time, even in a compressed time frame of examination. One technique employed in standardized patient encounters is the use of information cards. When the trainee or examinee expresses the need for an examination or a laboratory test, the standardized patient hands him/her a small card with the results of that exam/test, and the encounter can continue[2].

Safety: Standardized patients escape mistreatment of real patients when they are used for educational purposes. They are prepared for students to do physical examination over and over and inappropriately or inadequately. Thus the novice student can learn without concerning the remarks of poor examination and without threating the wellbeing of real patients[1].

Feasibility: Standardized patients allow students to learn about situations where the use of a real patient would be inappropriate, e.g. counseling of a patient with cancer[2].

Efficiency: The monitoring of students by standardized patients reduces the need for supervision of medical students by physician faculty during clinical encounters[2].

Skill transfer: The standardized patients provide a transition to the real patient for medical student. Working with standardized patients they can perfect their history and physical examination technique until they become confident[2].

Feedback: Standardized patients can be trained to assess the student's performance and to provide feedback to the student[1].

Tolerance: Standardized patients may tolerate more students in an examination than a real patient would. In an OSCE, for example, one standardized patients may serve one station but two matched real patients, used alternately, may be required for the same station[1].

Critical care or team training: Standardized patients allow student to practice with simulated emergency situations and difficult and sensitive medical conditions that would not allow student in real patient setting, e.g. management of accident victim or a sexually abused patients[2].

Integrated procedural performance instrument (IPPI): Positioning of different bench-top procedural skill model to standardized patients to recreate realistic clinical encounters gives more realistic training to the students, e.g., catheterization of a anxious elderly man[19].

Rare disease: Standardized patients can be trained to present with rare medical diseases that patients might not be available to teach or assessed when required[2].

Disadvantages of using Standardized Patients:

Recruiting and giving high-quality training to standardized patients is time consuming.[1]

The cost of standardized patients may be substantially higher than that of 'real patients.[1]

Standardized patients can ever replace the rich encounter that occurs between a student, a faculty member and an actual patient[11].

It is not possible to simulate many physical signs, for example, heart sounds, edema, or a goiter by standardized patients.[2]

Some examiners may voice opposition to the use of standardized patients and the credibility of the examination may be questioned.[12]

Advantages of using real patients:

The use of real patients offers several advantages:

They can clearly reveal all abnormal findings such as goiter, cardiac murmurs, hypertension, and pregnancy, they require no additional resources, training and cost other than travelling expenses for outpatients, and above all they are highly acceptable to staff and (students[20].

Disadvantages:

Using real patients also has some disadvantages:

They may not be accessible, when necessary, involvement in an examination may cause suffering or embarrassment for the patients, they may be unenthusiastic to participate in an examination where

he/she must encounter many(students as in an OSCE, their behavior may be unpredictable, their physical (signs may change and overall health condition may worsen, and real patients may be challenging to standardize[21].

Conclusion:

Considering all the facts it can be concluded that standardized patients are unquestionably valuable implements in medical education both for teaching and assessment. It is not to replace the real patients from the medical education but to produce a safe bridge between medical students and novice doctors with real patients. Real patients will be used when the situation is convenient to them.

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