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HUMANIZING THE BUSINESS OF MEDICINE: THE USE OF SIMULATED PATIENTS TO TRAIN MEDICAL STUDENTS

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ABSTRACT

The Primary Care Curriculum of the University of New Mexico utilizes simulated patients to develop medical students' ability to create a good doctor-patient relationship. Simulated patients are laypersons who are trained to simulate the physical signs, verbal responses, and emotional reactions of patients with particular medical conditions. These simulators provide immediate verbal feedback to students concerning their affective skills. Additionally, student skill in conducting a patient interview, performing a physical exam, problem-solving, and making management recommendations is evaluated using simulated patients. Details of the development and implementation of the simulated patient program are discussed.

INTRODUCTION

Today's increased emphasis on the mind-body relationship (that is, the psychological, social, and behavioral aspects of medicine which affect the physical aspects of medicine), has brought about an exploration in medical school curricula of new ways to teach the affective skills needed by physicians. Studies have found that the mind-body relationship impacts on patient compliance with medical advice, on patient satisfaction with their physician, and on the data obtained by the physician from the patient (7). While physicians often believe their patients comply with most of their advice (4), studies show that 25- 50% of patients don' t comply with prescribed regimes (3). Often this lack of compliance is the result of poor communication between the physician and the patient. Therefore, medical schools are increasing their focus on developing students' ability to create a good physician-patient relationship. One method used to foster this ability in medical students, is the simulated patient.

Simulated patients are laypeople who are trained to simulate the physical signs, verbal responses, and emotional reactions of patients with particular medical conditions. Medical students may then practice diagnostic evaluation of these simulated patients, gaining valuable experience in a less-threatening arena. Feedback on students' performance is provided by the simulated patient, faculty, and sometimes peers.

In addition to improving their affective skills, students may gain a variety of skills by participation in a simulated patient diagnostic encounter. Such a simulation facilitates the student's acquisition of:

* history taking skills
* physical exam skills
* diagnostic skills
* problem solving/clinical reasoning skills
* professional and humanistic manner of dealing with patients
* ability to recommend management for the particular problem being simulated
* practice in communicating recommendations to patients

Using the simulated patient encounters (which may be repeated as needed), the student can practice basic skills without time pressure.

The use of simulated patients within a medical school curriculum provides several advantages. Simulated patients are much less costly as instructors than are physicians. Used in evaluations, they free- up the physician instructors to observe and comment critically on the students' performance, without the pressure of a real, possibly very ill patient who must be managed immediately. They are used to teach medical students skills such as interviewing and physical exam, which are fairly stable in terms of their knowledge base. The use of simulated patients, trained using standard instructional materials, provides for a more consistent training of medical students in these skills than is usually obtained in a traditional medical curriculum. Additionally, students can practice their techniques in a milieu which is more conducive to exploration because it lacks time and other pressures. Real patients who may be under a lot of stress may not be as forgiving of the mistakes made by a naive medical student. Thus, the use of simulated patients is also kinder to the real patients who would otherwise encounter the novice medical student.

HISTORY

Historically, simulated patients have been used for more than a decade in medical school curricula. One of the earliest uses of simulated patients for educational purposes was that by Barrows (2). Dr. Bar- rows used asymptomatic individuals to simulate symptoms of neurological diseases. To make the simulated patients more cost-effective, Kretzschmar (6) began a program using a gynecological nurse practitioner as a patient instructor for pelvic examinations. The nurse practitioner doubled as both patient and instructor, thus requiring no clinician instructor. This was similar to a program developed by Stillman (8) which utilized layperson patient instructors who learned a great deal of medical knowledge about their disease which they utilized in teaching the medical students. Stillman also used patient instructors as evaluators of student performance. The use of patient instructors was evaluated by Anderson and Meyer (1) who showed that medical students taught regional exam skills by patient instructors showed no difference in their skill acquisition from those taught the same skills by physicians. Thus, the literature concerning simulated patients/patient instructors discloses an increasingly sophisticated use of them within medical school curricula.

PROGRAM DESCRIPTION

Simulated patients are used at the University of New Mexico's Primary Care Curriculum to provide medical students with a life-like diagnostic situation in which to practice their interviewing,

physical exam, problem solving and management skills. The Primary Care Curriculum (PCC) is an innovative approach to medical education. Instead of learning the basic sciences for two years in the primarily lecture-based format of the traditional track medical school curriculum, PCC students learn the basic sciences in the context of clinical problems (5). Students work within small group tutorials, utilizing a variety of experiential learning materials. Simulated patients have been used as adjunct resources for these cases and are primarily used today as student evaluation instruments.

At the end of each unit (of varying lengths) students are evaluated in terms of their skill acquisition in the areas of interviewing, physical exam, clinical reasoning, and content knowledge acquisition using simulated patient encounters. All students perform a diagnostic evaluation of the same simulated patient case (which may be played by several different simulated patients), and are evaluated by a faculty member. As the student progresses through the curriculum they encounter increasingly difficult medical conditions. The cases run the gamut, and include such conditions as alcoholism, congestive heart failure, and multiple sclerosis.

A variety of personnel are involved in the simulated patient program: (1) Administrators: a patient educator is in charge of coordinating the program, recruiting patients, training the simulated patients, initiating the development of new cases, and assisting in the evaluation of the simulated patients. This person is aided by problem developers, statistical evaluators and secretarial support personnel. (2) Patients: Laypeople, often recruited from local acting groups, provide case information to the medical students in the form of verbal responses, symptom cards (where the physical sign cannot be simulated), and behavioral responses. (3) Students: First and second year PCC medical students utilize the simulated patients, as well as regular track students in the behavioral sciences blocs of the curriculum. (4) Clinicians: Physicians serve as patient case originators, content experts, tutors, and evaluators (of both student and patient performance).

The design, development, and evaluation of a simulated patient scenario follows a prescribed pathway. A clinician selects a patient case which meets criteria set by the curriculum designers, who then write-up the case. Once reviewed for accuracy by the original clinician, the case is circulated to other clinicians for review, and revised as necessary. Additional educational materials for the case are developed as needed. Simulated patients are then selected and trained using self-instructional materials, the patient educator, and clinicians. The simulated patient receives an overview of the program, its objectives and methods, specific content knowledge concerning the particular case which they are simulating, and instruction in what kind of feedback to give the medical students. The simulated patients practice the responses they will give the medical student for various questions asked in the history and physical exam. Up to this point, they have worked primarily with the patient educator, each other, or alone. At this stage they are reviewed by a clinician who deliberately tries to work-up the patient in an inept fashion. This allows the simulated patient to develop his/her responses to the unexpected. Often the students will ask questions In a different way or order than that in which the simulated patient was trained. The other simulated patients being trained for the case observe this interaction and then get a chance to practice themselves. This procedure helps to eliminate one of the problems of the program which is inconsistent performance by the simulated patients. Appropriate evaluation forms, which are used in the student evaluations, as opposed to the use of simulated patients as case adjuncts, are prepared for use by observing clinicians and simulated patients to give feedback to the students. Also, a model write-up of the case is prepared to enable students to confirm their own approach to the scenario after it has been played.

The simulation is now ready for actual use with students. The student receives a brief preparation for the scenario. During evaluations, a PCC staff member observes the student's diagnostic evaluation through a one-way mirror and records steps performed by students. All evaluation simulations are videotaped. Following the student's encounter with the simulated patient, immediate feedback is given to the student by the patient. The student is then given a period of time in which to research the problem and write-up his/her case presentation.

A more formal evaluation of the student's performance follows. Clinician and/or basic scientist evaluators review the PCC staff member's observations and selected portions of the videotape, and critique the student's gain in content knowledge from the previous evaluation, the appropriateness of their history questions, their skill in performing a physical exam, and their manner and facility in acquiring information from the patient. The simulated patient, in addition to commenting on their evaluation of the above skills, will give feedback concerning the student's affective skills. They may comment on how they felt being interviewed by the student, on the student's demeanor during the work- up (including such things as did the student use jargon that the patient did not understand; did the student introduce him/herself; did the student explain his/her actions as they performed them; etc.), the student's response to certain physical signs, missed cues, etc. All evaluation sessions are videotaped and students may review the tapes. Thus, the simulations provide students with a variety of feedback mechanisms.

Student response to simulated patients has been enthusiastic, and the students often find the simulated patients very real. One student who was working up a simulated patient in congestive heart failure who was hyperventilating, became so caught up in the simulation that he stopped the work-up to get the patient admitted to the hospital immediately. The simulated patients have also responded favorably to the experience, returning repeated times to play their parts. They have expressed enjoyment of their part in the training of new physicians.

In summary, simulated patients have proved to be an excellent, cost-effective means for training and evaluating medical students in the techniques of conducting a patient interview, performing a physical exam, learning problem solving, and making management recommendations. In combination with the problem-based context, simulated patients have promoted the life-long learning of the students.

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