

An Update on the Utilization of Standardized Patients in Physician Assistant Education

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Purpose: The primary goals of this project were to examine the extent of standardized patient (SP) use during the didactic and clinical phases of physician assistant (PA) programs and to determine how many programs use various SP activities to teach as well as assess clinical skills. **Methods:** A Web-based survey requesting information related to SP activities in PA programs was sent to 137 PA program directors. **Results:** Fifty-six programs (41%) completed the survey. The majority (82.1%) of responding programs indicated that they use SPs. Of those programs, nearly all (97.8%) reported using SPs during the didactic phase, and 67.4% reported using SPs during the clinical phase. With the exception of gynecological and urological “invasive” exams, clinical skills are more frequently assessed than taught using SPs. Additionally, the majority of programs (82.2%) use SPs as a component of a summative evaluation. Of those, 72.7% use SPs to evaluate students’ clinical skills. Programs affiliated with medical schools have a significantly higher rate of SP use than programs not affiliated with medical schools. The most common reasons for not using SPs are the associated costs and insufficient time and resources to train SPs. **Conclusions:** The results show a broad reliance on standardized patients to assess various aspects of clinical skills training in PA education. Considering the recent shift to SP-based clinical skills testing of medical students for licensure, the results also highlight the need for further research regarding the specific utilization of SPs and establishment of performance standards.

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INTRODUCTION

In 1963, neurologist Harold S. Barrows, MD, developed the concept of the first standardized patient (SP) as a means to evaluate the clinical skills of third-year medical students.¹ Numerous studies have since established SP experiences as an effective adjunct educational tool for evaluating and teaching the skills necessary for competent clinical practice.²⁻⁶ Not surprisingly, approximately 95% of medical schools now utilize SPs in some capacity.⁷ With regard to physician assistant (PA) education, SP experiences may be particularly useful for addressing aspects of the Competencies for the Physician Assistant Profession, such as interpersonal communication, that may be more difficult to assess through standard written examinations.

In 2004, a clinical skills component that utilizes SP exams was added to both the US Medical Licensing

Examination (USMLE) and to the Comprehensive Osteopathic Medical Licensing Examination (COMLEX-USA). Clinical skills testing had not been required for US medical licensure since 1964, when the clinical exam portion was discontinued due to issues related to statistical reliability.⁸ The current clinical skills component of USMLE testing was reestablished largely to address concerns related to clinical competence and public trust.⁸ Notably, a recent study of Canadian physicians determined that low scores on patient-physician communication and clinical decision-making on a national clinical skills licensing exam significantly correlated with future complaints to medical regulating agencies.⁹ Unfortunately, outcomes data regarding the effectiveness of the USMLE clinical exam as a predictor of clinical skill won't be available for several years.¹⁰

From the time of its inception in the early 1970s until 1997, the National Commission on Certification of Physician Assistants (NCCPA) required PAs to complete a case-based clinical skills exam as part of the certification process. In 1997, the NCCPA eliminated the clinical skills portion of its Physician Assistant National Certifying Examination (PANCE) due to an inability to achieve standardized conditions.¹¹ The PANCE is a computer-based multiple-choice exam and, as such, is limited in its ability to assess certain skills, such as patient education, that are necessary for clinical practice. Therefore, the responsibility of evaluating many aspects of clinical competence rests on PA program curricula.

The NCCPA and the other representative PA organizations — the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA), the Physician Assistant Education Association (PAEA), and the American Academy of Physician Assistants (AAPA) — may be interested in the recent shift to SP-based clinical skills testing of medical students for licensure.

Inevitable comparisons of PA education to medical education may serve as an impetus for closer examination of clinical evaluation in PA education. However, with regard to SPs in particular, baseline data related to their use in PA programs remain scarce. Data collected in 2005 regarding the use of SPs in the didactic phase of PA education were published in this journal in 2008.¹² The current study examined the extent of SP use during the entire PA curriculum and aimed to determine how many programs use various SP activities to *teach* as well as *assess* clinical skills. Additionally, this project specifically explored the extent of SP use as a component of PA program summative evaluation.

METHODS

After obtaining the approval of the Midwestern University, Glendale, Institutional Review Board and the PAEA Research Institute Review Committee, a pilot survey was conducted using the Web-based survey tool Survey Monkey. The pilot survey was e-mailed to approximately 10% of PA program directors or other PA educators who work closely with standardized patients, and respondents were asked to comment on the survey instrument's content and clarity. Based on the feedback, a definition of standardized patient was added to the final survey, which was then e-mailed in March 2008 to the directors of the 137 accredited PA programs. The e-mail briefly described the intent of the project and requested that the survey be completed by the program director or an appropriate designee. The Association of Standardized Patient Educators' definition of standardized patient was provided, and respondents were directed to refer to this definition for the purposes of the questionnaire:

[A] person trained to portray a patient scenario, or an actual patient using their own history and physical exam findings, for the instruction, assessment, or practice of communication and/or examining skills of a health care provider. In the health and medical sciences, SPs are used to provide a safe and supportive environment conducive for learning or for standardized assessment.¹³

The initial section of the 25-question survey requested information about PA program demographics including regional consortium, medical school affiliation (ie, allopathic, osteopathic, or no medical school affiliation), private versus public funding, degree

awarded, number of students and full-time faculty, and year of first matriculating class. The second section ascertained whether or not the respondent's program used SPs. Those whose programs did not utilize SPs were asked to indicate the reasons that SPs were not used. Responding programs that did use standardized patients were directed to a series of "yes/no," "select all that apply," and open-ended questions related to SP activities, including the use of SPs to *teach* and *assess* various clinical skills. The final items of the survey sought information regarding SP use as a component of a summative evaluation.

The Web-based service Survey Monkey collected survey responses and sent the anonymous, deidentified, unlinked data to the investigators in the form of a Microsoft Excel spreadsheet, which was handled confidentially in accordance with IRB protocol. No follow-up e-mail reminders were sent to nonresponders. Data analysis was predominately descriptive (eg, means, frequencies, and percentages). Correlations between independent variables, such as program demographics, and dependent variables (eg, SP use in the curriculum) were also determined by entering the data into a MINITAB worksheet and performing chi square tests. Statistical significance was set at the $p < 0.05$ level.

RESULTS

Fifty-six programs (41%) completed the survey. Responding programs were generally representative of all PA programs¹⁴ in terms of their geographical distribution, educational facility affiliation, degrees granted, total enrollment, and total FTEs (Table 1).

The majority (82.1%) of programs indicated that they use SPs. Of those programs, nearly all (97.8%) report-

Table 1. Characteristics of Program Respondents

Survey Question		Survey Response	Annual Report ^a
1. Of which PAEA consortium is your PA program a member?	Northeastern	22.2%	20.9%
	Midwestern	20.4%	19.4%
	Heartland	18.5%	10.4%
	Southeastern	14.8%	17.9%
	Western	13.0%	17.2%
	Eastern	11.1%	14.2%
2. Does the county in which your program is located have a population of greater than 100,000?	Yes	92.6%	n/a
	No	7.4%	
3. With which type of educational facility is your PA program affiliated? ^b	Graduate institution	64.3%	71.6% (univ.)
	Undergraduate institution	16.1%	20.9% (college)
	Community college	3.6%	5.2%
	Hospital	1.8%	1.5%
	Military	1.8%	0.8%
	Other	12.5% ^c	n/a
4. With which type of medical school is your program affiliated?	Allopathic medical program	42.6%	n/a
	Osteopathic medical program	16.7%	
	Not affiliated with medical school	40.7%	
5. Is your educational facility considered a public or private institution?	Private	63.6%	n/a
	Public	34.5%	
	Other	1.9%, public corp.	
6. What level of physician assistant degree does your program offer? ^b	Master's	89.3%	76.9%
	Bachelor's	12.5%	15.7%
	Certificate	3.6%	5.2%
	Associate	0.0%	2.2%
7. How many students are currently enrolled in your program (sum of first and second year students)?	Mean	89.5	91.3
8. What is the total number of faculty full time equivalents in your program?	Mean	6.8 ^d	5.7 ^e
9. What was the year of your program's first matriculating class?	Mean	1989	Consistent with year established
10. Does your institution have an independent standardized patient (SP) program that coordinates SP activities for multiple educational programs?	Yes	46.4%	n/a
	No	53.6%	

^aPhysician Assistant Education Association. *Twenty-Third Annual Report on Physician Assistant Educational Programs in the United States, 2006-2007.*

^bRespondents were instructed to "select all that apply."

^cFour affiliated with health science centers, two affiliated with academic medical centers, one affiliated with both a graduate and hospital facility.

^dOne response excluded (not plausible)

^eExcluded program directors

ed using SPs during the didactic phase, and 67.4% reported using SPs during the clinical phase (Table 2). The most common reason for not utilizing SPs was cost (Table 3).

Insufficient time and resources to train SPs and difficulty recruiting SPs were also frequently reported reasons.

PA programs affiliated with med-

ical schools — both allopathic (22/23, 96%) and osteopathic (8/9, 89%) — have a significantly higher rate of SP use than programs without medical school affiliation (14/22, 64%) ($p <$

0.05). All of the PA programs housed in institutions with independent SP programs that coordinate SP activities for multiple educational programs use standardized patients. Funding source (ie, public or private), class size, and whether or not the program's first class matriculated prior to 1997 (the year the clinical skills exam was eliminated from the PA certification process) did not significantly affect SP utilization ($p > 0.05$ for all comparisons).

Standardized patient experiences are used to teach and assess a number of clinical skills in PA programs. Gynecological and urological “invasive” examinations are more frequently taught using SPs (Table 4). The remaining clinical skills — such as history-taking, general “non-invasive” physical exams, evaluation of scripted clinical cases, and patient education and counseling — are more commonly assessed using SP assistance.

When asked who performs the role of SPs in the program, respondents were permitted to select more than one answer. Over 90% of programs that use SPs reported using paid “patients” who have received specific SP training (ie, professionals). Other answers included: community volunteers (30.2%), PA students (14%), non-PA students (7%), faculty without specific training (7%), and faculty with specific SP training (2.3%). Of the programs that reported remuneration rates ($n = 39$), the largest percentage (51.3%) pay SPs \$10-\$25 per hour, 15.4% pay \$26-\$40 per hour, 12.8% pay \$41-\$55, 10.3% pay \$56-\$70 per hour, and 10.3% pay an hourly rate of \$71 or more.

The majority of programs that use SPs incorporate SP feedback as a component of teaching (80.0%) and assessment (66.7%) of students (Table 2). With regard to broad clinical assessment, SP-based exams are used

Table 2. Extent of Standardized Patient Use in PA Programs

Question ^a	%Yes
Do you utilize SPs during the didactic portion of your curriculum? Number of SP experiences per student in didactic curriculum: Mean 5.5 ^b	97.8%
Do you utilize SPs during the clinical portion of your curriculum? Number of SP experiences per student in clinical curriculum: Mean 3.0	67.4%
Do SPs in your program provide direct feedback to students as a component of teaching?	80.0%
Do SPs in your program provide direct feedback to students as a component of assessment?	66.7%
Does your program utilize SPs to teach small groups?	28.9%
Does your program utilize SPs for individualized instruction?	28.9%
Do you utilize an SP-based examination as a component of a summative evaluation?	82.2%
Does the SP-based examination that is part of your summative evaluation include evaluating the student's performance in completing a comprehensive clinical skills examination (ie, includes the student conducting a history, performing a physical examination, formulating an assessment and plan, communicating with the patient, and completing a chart note)?	72.7%

^aQuestions were provided only to programs using SPs ($n = 46$).

^bFour answers were excluded as not plausible.

Table 3. Barriers to Utilization of Standardized Patients

Rank Order	Reasons for not using SPs*	%Yes
1.	Cost associated with using SPs	70.8%
2.	Insufficient time and resources to train SPs	50.0%
3.	Difficulty in recruiting SPs	33.3%
4.	Lack of facility resources (eg, space to perform SP activities)	29.2%
5.	SP-based experiences not aligned with curriculum objectives	8.3%
5.	Lack of evidence supporting the value of SPs	8.3%
5.	Liability concerns	8.3%

*Respondents were instructed to “select all that apply.”

as a component of a summative evaluation in 82.2% of programs that use SPs (Table 2). A few of the responding programs reported that their SP-based evaluation includes multiple SP encounters. Only 28.9% of the respondents use SPs to teach small groups or use SPs for individualized student instruction.

DISCUSSION

According to survey respondents,

standardized patients clearly play an important role in PA education. They are used in both the didactic and clinical curricula of PA programs for a variety of educational purposes. Nearly all responding programs that use SPs use them during the didactic phase, with only one respondent reporting SP use solely during the clinical phase. With the exception of performing “invasive” examinations, SP experiences are more frequently

Table 4. Clinical Skills Taught and Assessed Using Standardized Patients*

Clinical Skill	Percentage of Programs Using SPs to Teach Skills	Percentage of Programs Using SPs to Assess Skill
History-taking/interviewing	56.8%	86.7%
General (non-invasive) physical exams	52.3%	82.2%
Gynecological (invasive) exams	72.7%	47.6%
Urological (invasive) exams (rectal, genital)	60.5%	40.5%
Evaluation of scripted clinical cases	56.8%	77.3%
Patient education and counseling	50.0%	69.8%

* These questions were provided only to programs using SPs (n = 46)

utilized for clinical assessment than they are for teaching clinical skills such as history taking, interviewing, general physical examinations, evaluation of scripted cases and patient education.

This study replicated a number of findings from the study by Calhoun et al.¹² Similar to Calhoun et al, we found that approximately 82% of programs use SPs. Both studies found that programs affiliated with medical schools have the highest rate of SP use. This may be due to PA program access to medical school resources or may reflect an extension of medical school SP experiences into PA program curricula. Both studies also determined that the largest percentage of programs pay SPs a remuneration of between \$10 and \$25 per hour and that the most common reasons for not utilizing SPs are associated costs and training and recruitment issues. The reasons provided for not using SPs suggest that lack of resources is the most significant barrier to SP utilization. Programs with apparent access to resources (ie, those housed in institutions with independent SP programs and those affiliated with medical schools) have the highest rate of SP use.

Whereas Calhoun et al reported SP data related to teaching in the didactic curriculum, the current

study sought data on the use of SPs for both teaching and assessment during the didactic and clinical curriculum. However, the specific phase of the curriculum in which the teaching or assessment occurred was not identified. This could be perceived as a weakness of the study and an area of further research.

We also found some differences from the Calhoun data. While Calhoun et al found that 93% of programs use SPs for teaching female pelvic exams and 80% use them for male genitourinary exams, our data indicate that 82% of programs use SPs to teach and/or assess gynecological “invasive” exams and 70% use them to teach and/or assess urological “invasive” exams. Conversely, Calhoun et al found that of the programs using SPs, 77% use them in history-taking scenarios, 58% use them for complaint-specific exams (eg, “patients” with abdominal pain), and 53% use them for patient teaching,¹² while we determined that higher percentages of programs use SPs to assess these skills (87% to assess history-taking, 77% to assess scripted clinical cases [“complaint-specific exams”], 70% to assess patient educating). In addition, while Calhoun et al found that “more than 60%” of programs using SPs employed professional (or paid) patients; our find-

ings indicate that 91% use professional SPs who have received specific training. Although direct statistical comparisons cannot be made, these differences may suggest recent trends toward the decreased use of SPs for gynecological and genitourinary exams, increased use of SPs for clinical assessment and, in the last three years, greater reliance on professional SPs. Moreover, greater utilization of professional SPs may reflect improved standardization of SP experiences.

These results suggest that PA educators have identified SPs as an important means by which to assess clinical competencies. Standardized patient-based assessment, however, is not without its shortcomings. The American Medical Association (AMA) opposes the current USMLE clinical skills test for a number of reasons, including cost and concerns related to the test’s validity.^{8,15} Medical students complain that the test is costly, inconvenient, and artificial.^{15,16} In a position statement regarding the clinical skills assessment examination, the AMA-Medical Student Section argues that clinical skills assessment already occurs during the medical education curriculum and that standardized patient exams can easily be introduced at the medical school level.¹⁵ The group further suggests that improvements in clinical skills training should be linked to medical school curricula and evaluated by the accreditation process rather than by a national examination.¹⁵

Until outcomes data regarding clinical skills testing in the US become available, controversy regarding SP-based examinations will likely persist. Continued SP-based testing for medical licensure, however, has the potential to establish SP-based exams as a “standard” method of assessing clinical competence. Notably, most PA programs that com-

pleted this survey are in fact using an SP-based clinical skills exam as a component of summative evaluation.

Limitations to the current study include a limited response rate. Program directors receive numerous requests to complete surveys; a higher response rate might be attained if the survey were sent directly to associate directors or academic coordinators. The survey's length may also have dissuaded participation. Nonetheless, the program characteristics of the study sample were very similar to national program characteristics. Other limitations include self-selection and self-reporting biases: programs that do not use SPs may be less inclined to complete a survey on SP use, and those choosing to respond may over-report their level of SP use.

Despite these limitations, this study demonstrates PA education's broad reliance on standardized patients to address various aspects of didactic and clinical skills training. The recent emphasis on clinical skills assessment in medical education highlights the need to obtain more information regarding how SP activities are conducted and how performance standards are established in order to better determine specific strengths and weaknesses associated with SP-based assessment in PA education. Further research in this area is also likely to assist programs as they continue to work to effectively address all areas of PA competence.

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