

**A Ten-Year Review of the Literature on the Use of Standardized Patients
in Teaching and Learning: 1996-2005**

Short title: Literature Review on Use of Standardized Patients

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Table 2. Summary of characteristics of reviewed studies

#	Author(s)	Setting & Population	n	Study Design			Outcomes	Outcome Level							
				# of Groups	Study Type	SP Role		1	2A	2B	2C	3	4A	4B	
1	Blue AV et al. (1998)	USA, Medicine: Year 3 medical students on combined medicine-surgery clerkship	89	3 groups	Case-Control	PR	Higher mean scores on breast cancer knowledge exams and surgery OSCEs, as compared to controls			√	√				
2	Brown A et al. (2003)	USA, Medicine: Year 2 medical students	140	2 groups	Case-Control	PR	Self-reported satisfaction with diabetes management education program; higher diabetes OSCE and interpersonal skills scores, as compared to controls	√		√	√				
3	Colletti L et al. (2001)	USA, Medicine: Year 3 medical students on surgery or OB-GYN clerkships	38	2 groups	Case-Control	PR+FB+ Inst	Higher mean scores on portion of clinical performance exam relating to delivery of bad news, as compared to controls			√	√				
4	Davidson R et al. (2001)	USA, Medicine: Year 1-2 medical students	203	2 groups	Case-Control	PR+Inst	Higher mean scores on physical examination performance exams compared to controls			√	√				
5	Foley ME et al. (1997)	USA, Nursing: Practicing nurses	66	2 groups	Case-Control	PR+FB	Self-reported satisfaction with SP program; no statistically significant differences found between intervention and control groups in regards to collaborative and communication skills	√							
6	Gibbons SW et al. (2002)	USA, Nursing: Nursing students	27	2 groups	Case-Control	PR+FB	Self-reported satisfaction with education program; higher performance scores on complete history and physical examination critical skills checklists compared to historical controls	√		√	√				
7	Greenberg LW et al. (1999)	USA, Medicine: Year 2 pediatric residents	16	3 groups	Case-Control *	PR+FB	No statistically significant differences found between intervention and control groups in regards to effective telephone management, as measured by SP evaluations of follow-up phone calls								
8	Haist SA et al. (2003)	USA, Medicine: Year 3 medical students on primary care IM clerkships	44	2 groups	Case-Control	PR	Higher mean scores on domestic violence items on knowledge and performance exams compared to controls			√	√				
9	Haughwout JC et al. (2000)	USA, Medicine: Year 2-3 family medicine residents	24	2 groups	Case-Control	PR	Self-reported satisfaction with program; higher mean scores on skills-based breastfeeding OSCEs compared to controls; self-reported gains in breastfeeding problem-solving skills	√		√	√				
10	Johnson JA et al. (1996)	USA, Dentistry: Year 1 dentistry students	86	2 groups	Case-Control	PR	Higher performance scores in preventive periodontics and basic patient management technical and record keeping skills compared to controls			√	√				
11	Kleinman DE et al. (1996)	USA, Medicine: Medical students	81	2 groups	Case-Control	PR+Inst	Higher scores in interpersonal skills while performing pelvic exam compared to controls as rated by SPs; no significant differences found in pelvic exam technical scores			√	√				
12	McGraw RC et al. (1999)	Canada, Medicine: Year 1 medical students	75	2 groups	Case-Control	PR+FB	Non-significant trend toward greater course satisfaction compared to controls; no significant differences in mean basic clinical skills OSCE scores	√							

Table 2 continued. Summary of characteristics of reviewed studies

13	Nestel D et al. (2002)	UK, Medicine: medical students	Year 1	280	2 groups	Case-Control	PR+FB	Self-reported satisfaction with experience; no significant differences in meeting communication challenges-related learning objectives compared to controls	√						
14	Sachdeva AK et al. (1997)	USA, Medicine: medical students	Year 3	153	2 groups	Case-Control	PR+Inst	Significantly higher performance scores on SP-based breast and abdominal performance examination and higher professionalism scores compared to controls		√	√				
15	Seibert DC et al. (2004)	USA, Nursing: NP students		12	2 groups	Case-Control	PR	Significantly higher clinical skills topic knowledge and knowledge integration scores compared to controls		√					
16	Sloan PA et al. (2004)	USA, Medicine: medical students on combined medicine-surgery clerkship	Year 3	128	4 groups	Case-Control	PR	Significantly higher performance scores on 4-component cancer pain OSCE compared to control and traditional instructional format groups		√	√				
17	Tysinger JW et al. (1997)	USA, Medicine: medical students	Year 1	NS	Single group	Case-Control	PR	Self-reported satisfaction with course experience; descriptive study content focused on medical ethics	√						
18	Vannatta JB et al. (1996)	USA, Medicine: medical students	Year 1	154	3 groups	Case-Control *	PR+FB	Significantly higher skill ratings for "types of questions used" and "use of empathy" items for SP-led feedback group compared to controls, as measured by the Arizona Clinical Interview Rating Scale			√				
19	Yoo MS et al. (2003)	Korea, Nursing: nursing students	Year 2	76	2 groups	Case-Control	PR	Significantly higher scores in clinical judgment, clinical skill performance, and communication skill performance compared to controls		√	√				
20	Zraick RI et al. (2003)	USA, Speech-language pathology: Year 1 graduate students		18	2 groups	Case-Control *	PR	Self-reported satisfaction with experience; no significant difference in interpersonal and communication skills in evaluation, treatment, and differentiation of aphasia compared to controls	√						
21	Broder HL et al. (1996)	USA, Dental: Year 3 dental students		132	Single group, repeated measures	Pretest/Posttest	PR+FB	Self-reported satisfaction with patient instructor program; improved interview ratings and scores on content checklists	√		√	√			
22	Costanza ME et al. (1999)	USA, Medicine: Practicing physicians		156	Single group	Pretest/Posttest	PR+FB	Self-reported satisfaction with education program; improved scores on breast cancer knowledge exams and standardized patient-based performance evaluations			√	√			
23	Eddey GE et al. (1998)	USA, Medicine: medical students on pediatrics and primary care clerkships	Year 3	66	Single group	Pretest/Posttest	PR	Improved scores on self-ratings representing comfort, self-perceived skill, and style of data gathering in regards to patients with disabilities	√		√	√			
24	Hanna E et al. (2000)	Canada, Medicine: Practicing physicians rated moderately to severely incompetent		5	Single group	Pretest/Posttest	PR	Only one physician improved; another remained the same, while three deteriorated in competency as determined by Physician Review Program			√*	√*			
25	Hergenroeder AC et al. (2001)	USA, Medicine: pediatric and internal medicine-pediatric residents	Year 2	58	Single group	Pretest/Posttest	PR	Self-reported satisfaction with program; improved scores on ankle & knee written knowledge and SP-based performance exams; self-reported gains in clinical skills	√		√	√	√		
26	James D et al. (2001)	UK, Pharmacy: pharmacy students	Year 3	91	Single group	Pretest/Posttest	PR	Self-reported gains in patient consultation confidence and comfort			√	√			

Table 2 continued. Summary of characteristics of reviewed studies

27	Kahn MJ et al. (2001)	USA, Medicine: Year 3 medical students on medicine clerkship	44	Single group	Pretest/Posttest	PR	Self-reported satisfaction with program; self-reported improvements in end-of life care attitudes and gains in end-of-life care skills and knowledge	√		√	√				
28	Macri CJ et al. (2005)	USA, Medicine: OB-GYN residents	28	Single group	Pretest/Posttest	PR+FB	Self-reported satisfaction with experience; improved scores on genetic diagnosis and counseling knowledge and skills exams; self-reported gains in genetic diagnosis skills confidence	√		√	√				
29	Plymale MA et al. (2000)	USA, Medicine: Year 3 medical students on combined medicine-surgery clerkship	34	Single group	Pretest/Posttest	PR	Self-reported satisfaction with experience; self-reported gains in cancer pain assessment and management skills and knowledge	√		√	√				
30	Plymale MA et al. (2001)	USA, Nursing: Practicing nurses	25	Single group	Pretest/Posttest	PR+FB	Self-reported satisfaction with experience; self-reported gains in cancer pain assessment and management clinical skills, as well as self-perceived cancer pain assessment and management clinical competence	√		√	√				
31	Porter-Williamson K et al. (2004)	USA, Medicine: Year 3 medical students on medicine clerkship	127	Single group	Pretest/Posttest	PR+FB	Self-reported satisfaction with experience; self-reported gains in hospice, palliative care, and symptom management knowledge and competence, reductions in palliative care analgesic concern, and no changes in attitudes regarding palliative care	√		√					
32	Quest TE et al. (2002)	USA, Medicine: EM residents	16	Single group	Pretest/Posttest	PR	Self-reported satisfaction with experience; self-reported gains in comfort levels in performing death disclosures	√	√	√	√				
33	Robins LS et al. (1997)	USA, Medicine: Year 2 medical students	190	Single group	Pretest/Posttest	PR+Inst	Self-reported gains in confidence levels and decreases in anxiety in performing the male genitoretal examination		√	√	√				
34	Rosenbaum ME et al. (2002)	USA, Medicine: Year 3 medical students	340	Single group	Pretest/Posttest	PR+FB	Self-reported satisfaction with experience; self-reported gains in comfort levels in communicating bad news within the context of different clinical scenarios	√	√	√	√				
35	Roter DL et al. (2004)	USA, Medicine: Year 1 pediatrics residents	28	Single group	Pretest/Posttest	PR	Self-reported satisfaction with experience; significant improvements in interview communication performance skills	√			√				
36	Sloan DA et al. (1996)	USA, Medicine: General surgery and radiotherapy residents	25	Single group	Pretest/Posttest	PR	Self-reported satisfaction with experience; self-reported gains in breast cancer management clinical skills and knowledge	√		√	√				
37	Wilk AI et al. (2002)	USA, Medicine: IM residents	19	Single group	Pretest/Posttest	PR	Self-reported satisfaction with experience; increased frequency of alcohol screening and counseling in actual clinical practice	√		√	√	√			
38	Boyle D et al. (2005)	USA, Medicine: Year 1-2 medical students	NS	Single group	Posttest only	PR	Self-reported satisfaction with communications curriculum; improved communication scores on SP performance exam	√		√	√				
39	Cohen R et al. (2000)	USA, Medicine: Practicing physicians	80	Single group	Posttest only	PR	Self-reported satisfaction with workshop; self-reported gains in interest and ability to teach clinical bioethics	√	√	√	√	√			
40	Festa LM et al. (2000)	USA, Nursing: Year 3 nursing students	9	Single group	Posttest only	PR+FB	Self-reported satisfaction with simulation experience; self-reported gains in educational motivation and knowledge in regards to patients with major depression	√	√	√					

Table 2 continued. Summary of characteristics of reviewed studies

41	Gelula MH et al. (2003)	USA, Multidisciplinary: Faculty members from the colleges of medicine, dentistry, pharmacy, and nursing	36	Single group	Posttest only	PR+FB	Self-reported satisfaction with workshop; self-reported gains in knowledge and practical skills in regards to clinical teaching skills	√		√	√	√			
42	Griffith CH et al. (1997)	USA, Medicine: Year 3 medical students on combined medicine-surgery clerkship	120	Single group	Posttest only	PR	Self-reported satisfaction with value of clinical skills workshops	√							
43	HAMPL JS et al. (1999)	USA, Undergraduate dietetics students	NS	Single group	Posttest only	PR+FB	Self-reported satisfaction with session; self-reported gains in nutrition counseling knowledge and experience	√		√	√				
44	Hardoff D et al. (2001)	Israel, Medicine: Practicing physicians	NS	Single group	Posttest only	PR+FB	Self-reported satisfaction with session; self-reported changes in approach toward adolescent patients following the exercises	√		√	√	√			
45	Jacobson EW et al. (1997)	USA, Medicine: Medical students	44	Single group	Posttest only	PR+FB	Self-reported gains in knowledge of and interview skills with patients with disabilities			√	√				
46	Johnson S et al. (2002)	UK, Pharmacy: Practicing pharmacists	14	Single group	Posttest only	PR+FB	Self-reported satisfaction with workshop; self-reported gains in patient communication skills	√		√	√				
47	Kneebone R et al. (2002)	UK, Medicine: Year 2-3 medical students	51	Single group	Posttest only	PR+FB	Self-reported satisfaction with clinical scenarios focusing on technical and communication skills	√							
48	Ladyshewsky R et al. (1997)	Australia, Physiotherapy: Year 3 physiotherapy students	73	Single group	Posttest only	PR	Self-reported satisfaction with experience; self-reported gains in interpersonal communication skills and knowledge	√		√	√				
49	Lary MJ et al. (1997)	USA, Allied health: Dental hygiene, physical therapy, and physician assistant students	15	Single group	Posttest only	PR	Self-reported satisfaction with experience; self-reported gains in multidisciplinary teamwork, knowledge, and discipline	√	√	√	√				
50	Nestel D et al. (2003)	UK, Nursing: Practicing nurses	8	Single group	Posttest only	PR+FB	Self-reported satisfaction with experience; self-reported gains in minor surgery-related skills and knowledge	√		√	√				
51	Plymale MA et al. (1999)	USA, Medical students and residents	354	Single group	Posttest only	PR+FB	Self-reported satisfaction with experience; study content focused on cancer patient management	√							
52	Prislin MD et al. (1998)	USA, Medicine: Medical faculty	8	Single group	Posttest only	PR+FB	Self-reported satisfaction with experience; self-reported gains in faculty development-related interest; study focused on assessing the teaching performance of community preceptors	√	√						
53	Sharp PC et al. (1996)	USA, Medicine: Medical students	104	Single group	Posttest only	PR+FB	Self-reported satisfaction with experience; self-reported gains in health promotion and disease prevention skills and knowledge	√		√	√				
54	Towle A et al. (2002)	Canada, Medicine: Year 4 medical students	NS	Single group	Posttest only	PR+FB	Self-reported satisfaction with course experience; self-reported gains in advanced communication skills and knowledge	√		√	√				
55	Wanggren K et al. (2005)	Sweden, Medicine: Medical students	60	Single group	Posttest only	PR+FB+ Inst	Self-reported satisfaction with experience; self-reported and faculty-reported gains in clinical competence in performing gynecological examinations	√		√	√				

Table 2 continued. Summary of characteristics of reviewed studies

56	Clay MC et al. (2000)	USA, Medicine: medical students	Year 2	72	Single group	Descriptive	PR	None presented; descriptive study content area focused on concept of "standardized family"							
57	Coyle B et al. (1998)	USA, Medicine: psychiatry residents	Year 2	NS	Single group	Descriptive	PR+FB	None presented; descriptive study content area focused on psychotherapy skills							
58	Donovan T et al. (2003)	UK, Multidisciplinary: Practicing nurses and other allied health professionals		NS	Single group	Descriptive	PR+FB	None presented; descriptive study content area focused on communicating with cancer patients and their families							
59	Eagles JM et al. (2001)	UK, Medicine: Medical students		NS	Single group	Descriptive	PR+FB	None presented; descriptive study content area focused on alcohol misuse							
60	Edinger W et al. (1999)	USA, Multidisciplinary: Medical students, residents, and allied health professionals		NS	Single group	Descriptive	PR	None presented; descriptive study content area focused on clinical ethics							
61	Freer JP et al. (2001)	USA, Medicine: Residents and year 4 medical students		15	Single group	Descriptive	PR	None presented; descriptive study content areas focused on communication skills, evidence-based medicine, and clinical palliative medicine decision making							
62	Kahn MJ et al. (1999)	USA, Medicine: Medical students on internal medicine clerkship		NS	Single group	Descriptive	PR	None presented; descriptive study content area focused on patient end-of-life care							
63	Morell VW et al. (2002)	USA, Medicine: medical students	Year 3	NS	Single group	Descriptive	PR	None presented; descriptive study content area focused on cultural competency							
64	O'Connor FW et al. (1999)	USA, Nursing: NP students		NS	Single group	Descriptive	PR+FB	None presented; descriptive study content area focused on psychosocial assessment							
65	Sack S et al. (2002)	USA, Medicine: medical students	Year 3	NS	Single group	Descriptive	PR	Self-reported satisfaction with experience; self-reported gains in comfort in communicating about sexuality	√	√					
66	Serwint JR (2002)	USA, Medicine: Pediatric residents		20	Single group	Descriptive	PR+FB	None presented; descriptive study content area focused on communicating bad news and empathy							
67	Sloan REG et al. (2003)	USA, Medicine: Practicing physicians		80	Single group	Descriptive	PR+FB	Self-reported satisfaction with experience; descriptive study content focused on clinical and communication skills	√						
68	Wagner PJ et al. (2002)	USA, Medicine: Medical students		NS	Single group	Descriptive	PR+FB	Self-reported gains in interviewing confidence; descriptive study content focused on communication skills				√			
69	Wakefield A et al. (2003)	UK, Multidisciplinary: Medical and nursing students		34	Single group	Descriptive	PR+FB	Self-reported satisfaction with experience; descriptive study content focused on delivering bad news	√						

*Randomized studies

**Results only applicable to one subject

PR= Patient Role

FB = Feedback

Inst = Instruction