

DO HEALTH PROFESSIONS STUDENTS RESPOND EMPATHETICALLY TO A VIRTUAL PATIENT?

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Background/Purpose: Virtual patients (VP) or computer-based simulations of real patients could enhance existing standardized patient (SP) programs at many institutions. Previous work validates the use of VPs to teach and assess content items related to history-taking and basic communication skills. Significant information exchange between a doctor and patient occurs through nonverbal means such as gestures, body position and eye gaze. In addition, physician empathy is an important trust-building element in a physician: patient relationship. Therefore, the purpose of this study was to determine if a virtual scenario could be used to teach and assess more complex communication skills such as nonverbal behaviors and empathy.

Methods: Medical and physicians assistant students at the Medical College of Georgia (MCG) ($n=20$) volunteered to undergo a videotaped interview with either a SP or a highly interactive VP with abdominal pain. In the scenario, a life-sized VP is projected on the wall of an exam room in a SP teaching and testing center (Figure 1, video on the web at <http://www.cise.ufl.edu/research/vegrou/VOSCE/vr2006Submitted.wmv>). Students conversed with the VP via gestures and a commercially available speech recognition engine (Dragon Naturally Speaking Professional 8.0). VP and SP scripted responses to student questions were identical. To prompt a possible empathetic student response (i.e. acknowledging the VPs feelings), a challenge was built into the scenario in which the VP states "I am scared can you help me?" Videotaped student interactions were rated by clinicians ($n=6$) with respect to nonverbal communication skills (eye-gaze, head nod and body lean). Student empathetic behaviors were measured using a Likert-type scale with anchored descriptors and a semantic differential to measure affective responses. Data=Mean±SEM. Data analyzed by Students t-test.

Results:

Figure 1



Table 1

Student Behaviors	Ratings of Videotaped Interaction	
	VP ($n=20$)	SP ($n=8$)
Eye Contact ¹	2.90±0.09	3.87±0.12
Head Nod ¹	1.97±0.17	3.37±0.42
Body Lean ¹	2.30±0.13	2.75±0.49
Verbal Empathetic Response to Challenge (%)		
Empathy Rating ¹	2.61±0.14	3.00±0.37
Semantic Differential Score ²		

¹5-pt. Likert-type scale (1=none, 5=appropriate at all times)

²Reactions to 9 elements using a 7-pt. bipolar scale (3 =good, 0=neutral, -3 =bad)

* $p<0.05$ VP versus SP

Students demonstrated similar verbal responses to the VP challenge including: "I understand that you are scared." and "I am sorry, this must be difficult but we will do our best." and "I am going to do my best to help you."

Conclusions: Health professions students demonstrate rapport building and respond empathetically to a VP in a virtual scenario. The quantity and quality of the nonverbal communication and empathy is less than that exhibited in a similar SP scenario. Student empathy in the context of the VP was less genuine and not as sincere as in the SP scenario. This difference may be due to the artificial nature of the VP interaction and improvements in the VP's expressiveness (i.e. voice volume, tone and facial expressions) may augment student empathetic responses. Virtual clinical scenarios could provide students a controllable, secure, and safe learning environment with the opportunity for repetitive practice with feedback and, as a result, VPs could augment existing SP programs at many institutions.

