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Training Residents to C.A.R.E. Using Videotaped Unannounced Standardized Patient Encounters

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A positive delta from Step 1 to Step 2 was found to be statistically significant when the value was 30 points or higher, 1.16 (1.07-1.26). Step 2 was found to be an independent predictor of passing the ABEM qualifying exam, 1.18 (1.02-1.31).

**Conclusions:** There was a positive trend in success rate with increasing delta. Step 2 was found to be an independent predictor of success for board passage. Our future studies will include a multi-center analysis with other emergency medicine residencies to further evaluate the significance of delta.

## 2 Does Video Playback Speed Affect Comprehension for Students Listening to Podcasts for Novel Curriculum Delivery?

*Song K, Chakraborty A, Dugan A, Adkins B, Dawson M, Doty C /University of Kentucky College of Medicine, Lexington, KY; Stanford University Department of Radiology, Palo Alto, CA*

**Background:** Medical education is a rapidly evolving field that has been utilizing new technology to enhance the learning of medical students. One new teaching modality is the video recorded lectures or podcasts. Recorded lectures not only allow the flexibility to pause and rewind, but also allows students to watch lectures at faster speeds. In a setting such as medical school where knowledge of minutiae and comprehension of concepts is paramount for success, the ability to watch lectures at faster speeds could be extremely beneficial. Though previous studies have shown subjective improvement in learning, no quantitative studies measuring information retention has yet been published.

**Objectives:** The purpose of this study is to determine if watching podcasts at 1.5x speed is more effective, equivalent to, or less effective to 1.0x speed for retention of new material by statistical comparison of the mean and median test scores.

**Design:** prospective, single-center, IRB approved, experimental study.

**Setting:** University of Kentucky College of Medicine.

54 medical students were randomized into two groups. Each group watched two separate videos at 1.5x and 1.0x speeds and took the respective assessments immediately after watching each video. The two videos shown were ultrasound artifacts and transducers. Neither topic is covered in the medical school curriculum. Group A watched artifacts video first at 1.5x speed then transducers at 1.0x speed; Group B watched transducers video first at 1.5x speed then artifacts at 1.0x speed. Mean and median test scores at different speeds were compared using the t-test.

**Results:** On artifacts test, there was a significant

difference (p=0.0188) in performance with 1.5x speed group (mean- 61.4; SD- 19.3) performing worse than the control group at 1.0x speed (mean-72.7; SD- 14.6). On transducers assessment, 1.5x speed group (mean- 66.9; SD- 17.6) again performed worse than the control group at 1.0x speed (mean- 73.8; SD-15.6), but the difference was not significant (p=0.1365).

**Conclusions:** Contrary to the previous studies showing subjective improvement in performance with sped up lectures compared to live lectures, our data shows worse test performance pertaining to new material at 1.5x speed compared to normal speed.

**Table 1.** Artifacts Quiz results- t-test- was used to compare the mean of 1.5x versus 1.0x speed. Group A viewed Artifacts at 1.5x speed and Group B viewed Artifacts at normal speed.

Artifacts podcast	Overall	1.0x Speed (Group B)	1.5x Speed (Group A)	P-value
No. of Participants	54	26	28	N/A
<b>Artifacts Scores</b>				
Mean (SD)	66.9 (18.0)	72.7 (14.6)	61.4 (19.3)	0.0188
Median (Quartiles)	65.0 (56.3, 80.0)	75.0 (65.0, 80.0)	60.0 (50.0, 75.0)	

**Table 2.** Transducers Quiz results- t-test- was used to compare the mean of 1.5x versus 1.0x speed. Group A viewed Transducers at normal speed and Group B viewed Transducers at 1.5x speed.

Transducers podcast	Overall	1.0x Speed (Group A)	1.5x Speed (Group B)	P-value
No. of Participants	54	28	26	N/A
<b>Transducer Scores</b>				
Mean (SD)	70.5 (16.8)	73.8 (15.6)	66.9 (17.6)	0.1365
Median (Quartiles)	69.6 (56.5, 87.0)	73.9 (64.1, 88.0)	69.6 (52.2, 81.5)	

## 3 Training Residents to C.A.R.E. Using Videotaped Unannounced Standardized Patient Encounters

*Chung A, Saloum D, Retino C, Brazg J, Weiner C, Pushkar I, Drapkin J, Likourezos A, Marshall J/Mount Sinai Emergency Medicine, New York, NY; Maimonides Medical Center, Brooklyn, NY*

**Background:** Physician empathy increases patient satisfaction, improves outcomes, and is integral to effective patient communication. We developed an innovative educational method using videotaped unannounced standardized patient (USP) encounters during real clinical shifts to train and assess our residents' empathic communication skills. In contrast to other assessment types, USP encounters do not suffer from low fidelity or the Hawthorne effect. Video provides valuable feedback on verbal and nonverbal behaviors.

**Objectives:** We hypothesized that the addition of video would improve our residents’ empathy skills more than a post-encounter assessment form alone.

**Methods:** First-year EM residents (n=16) participated in the study during one academic year. All residents completed two videotaped USP encounters during the first four months. After each encounter, the USP completed a CARE form, a validated empathy measure. All 16 interns were then individually debriefed. This included a self-assessment, review of the CARE forms, and goal-setting. The intervention group (n=8) also reviewed the videotapes of their USP encounters, while the control group (n=8) did not. All residents then completed two more encounters during the last four months of the year. USPs again filled out the CARE form after each encounter. At the end of the study, we invited all residents to review their videos. The CARE form has 10 questions with response options from 1 to 5 (1=poor, 2=fair, 3=good, 4=very good, 5=excellent). Student’s T-test was used to compare mean scores between the groups. A p value <0.05 denoted statistical significance between groups.

**Results:** CARE baseline scores were similar for the first two USP encounters (p>0.05 on all CARE items). After the debrief intervention, the intervention group had statistically significantly higher scores compared to the control group for the following questions: “How good was the doctor at explaining things clearly?” (4.5 vs. 3.13, p=0.012); “How good was the doctor at helping you to take control?” (4.13 vs. 2.38, p=0.038); “How good was the doctor at making a plan of action with you?” (4.13 vs. 2.38, p=0.038).

**Conclusions:** Video review of USP encounters during real clinical shifts had a significant impact on resident empathy. In the future, we envision this novel method to be particularly useful for interpersonal and communication skills remediation.

#### 4 Use of Multidisciplinary Simulation to Improve Communication Skills, Interpersonal Relationships, and Job Satisfaction in Emergency Medicine Residents

*Austin R, dela Cruz J, Kegg J, Jaeger C, Patel C, Helmerichs A, Helmerichs M, Norman Z/Southern Illinois University School of Medicine, Springfield, IL; Memorial Health System, Springfield, IL*

**Background:** Traditional simulation (TS) in residency training places the learner in a controlled environment and uses scripted confederates to assess for critical actions. Multidisciplinary simulation (MDS) which includes physicians, nurses, and ancillary staff as active participants has been shown to improve inter-professional communication. The use of MDS in which nurses and ancillary staff are active participants with resident learners has not been previously evaluated in its ability to effect

resident communication and interpersonal skills.

**Objectives:** The objective of the project was to evaluate resident perception of TS versus MDS in its ability to improve resident communication and interpersonal skills. We hypothesized that MDS would improve resident communication and interpersonal skills more than TS.

**Methods:** Ten Emergency Medicine PGY2-3 residents participated in a simulation curriculum involving TS ran by physician faculty and MDS including nurses and ancillary staff from their clinical workplaces. Cases were built upon high acuity scenarios. Residents were surveyed using a 5-point Likert scale on the effectiveness of each modality after 6 months of participation during which 4 multidisciplinary simulations and 4 traditional simulations were completed. Results were analyzed by an independent measures t-test.

**Results:** Residents felt MDS was more effective at improving communication (p=0.003), interpersonal relationships (p=0.007), and understanding the roles of nurses and technicians in critical situations (p <0.001) compared to TS. 10/10 (100%) respondents indicated that MDS improved workplace environment. Residents did not report a difference between MDS and TS in the effectiveness of improving confidence in caring for similar patients (p=0.29) which may be a result of high baseline confidence (Table 1).

**Conclusions:** Residents felt MDS enhanced communication skills, interpersonal relationships, and understanding of the roles of all team members better than TS. All respondents felt that participating in MDS improved their clinical workplace environment. MDS may also play a role in improving job satisfaction in the Emergency Department. The authors advocate a role for MDS in residency for assessing and training communication and interpersonal skills.

Question	Mean Likert Score	P-Value
How effective do you feel traditional simulation is at improving your communication skills during acute situations?	3.1	
How effective do you feel multidisciplinary simulation is at improving your communication skills during acute situations?	4.3	TS vs. MDS 0.003
How effective do you feel traditional simulation is at improving your interpersonal relationships?	3.1	
How effective do you feel multidisciplinary simulation is at improving your interpersonal relationships?	4.1	TS vs. MDS 0.007
How effective do you feel traditional simulation is at improving your communication skills during critical situations?	2.3	
How effective do you feel multidisciplinary simulation is at improving your communication skills during critical situations?	4.3	TS vs. MDS <0.001
<b>Likert Scale: 5-Very Effective, 4-Effective, 3-Somewhat Effective, 2-Not Very Effective, 1-Not at All Effective</b>		
Does participating in multidisciplinary simulation improve your workplace environment?	10/10 Yes	
Rate your confidence in caring for similar patients in acute situations after traditional simulation	4.1	
Rate your confidence in caring for similar patients in acute situations after multidisciplinary simulation	4.3	TS vs. MDS 0.29
<b>Likert Scale: 5-Very Confident, 4-Confident, 3-Somewhat Confident, 2-Not Very Confident, 1-Not at All Confident</b>		