Innovative Simulated Clinical Encounter Involving People Living With HIV/AIDS In Training Medical Students Improves Medical Student Comfort In HIV Care

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CHIME
COLLABORATION FOR HIV MEDICAL EDUCATION

Preparing Providers: Tools and Strategies to Enhance Health Services
November 19, 2013 – 11:10am

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CHANGING THE COURSE OF THE HIV PREVENTION, ENGAGEMENT AND TREATMENT CASCADE

Background

- The Collaboration for HIV Medication Education (CHIME) is a CIHR-funded community-based study
- Goals are to improve:
  - HIV training for medical students
  - medical student comfort and interest in providing HIV-related medical care

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Background: HIV & Medical Education

HIV education

- Medical training in HIV care often inadequate[1]
- Few feel comfortable with pre-test counseling or diagnosis[2]
- Preconceived attitudes & biases[3]

Experiential learning

- Increasing demand for experiential learning i.e. simulation or actual clinical practice
- Role of patients as teachers or instructors in medical education not established[4]

1. Feldman J et al AIDS Patient Care STDS 2004;18:395–404.
2. Estcourt C et al. Int J STD AIDS 2009;20:324–329.
3. Aultman J 2006. Med Educ Online 11.
4. Jha V et al. lMed Educ 2009;43(1):10–20.

Background: Simulated Clinical Encounter (SCE)

- CHIME developed a SCE in which medical students provided HIV pre- and post-test counseling along with a point-of-care HIV test for trained PHA-Patient Instructors
- Respecting Greater Involvement of People with HIV/AIDS (GIPA) Principles
- Each session included HIV positive and HIV negative testing scenarios
- Observed by a Clinical Preceptor

UNAIDS. 2007. The greater involvement of people living with HIV (GIPA): Policy brief. Geneva: UNAIDS.

Methods

- CHIME recruited medical students at the University of Toronto to participate in the Simulated Clinical Encounters.
- Data collection
  - Students completed pre- and post-SCE self-assessment surveys.
  - Pre data was captured online after consenting to the study (Select Survey)
  - Post data was captured on paper and entered online by the CHIME study co-ordinator
  - Data was downloaded for analysis and linked by an anonymous study ID
- Analysis
  - Descriptive summaries and results of paired t-tests are presented.
  - Repeated measures analysis was used for multivariate models and included an adjustment for correlated responses

Scales

- **Self-Assessment of HIV/AIDS knowledge** (Pre only)
  - Current level of knowledge (15 items, Likert scale)
  - HIV knowledge (12 items, True, False, Don't know)
  - Modes of HIV transmission (5 items, True, False, Don't know)
- **Scales** (Pre and Post)
  - Attitudes about HIV/AIDS (10 items, Likert scale)
  - Perceptions about HIV/AIDS in healthcare (30 items, Likert scale)
  - HIV Care (8 items, Likert scale)
  - General Medical Competencies (3 items, Likert scale)
- **Timing of pre-post measures**
  - 36% same day, 33% 1 day apart, 31% 2-5 days apart

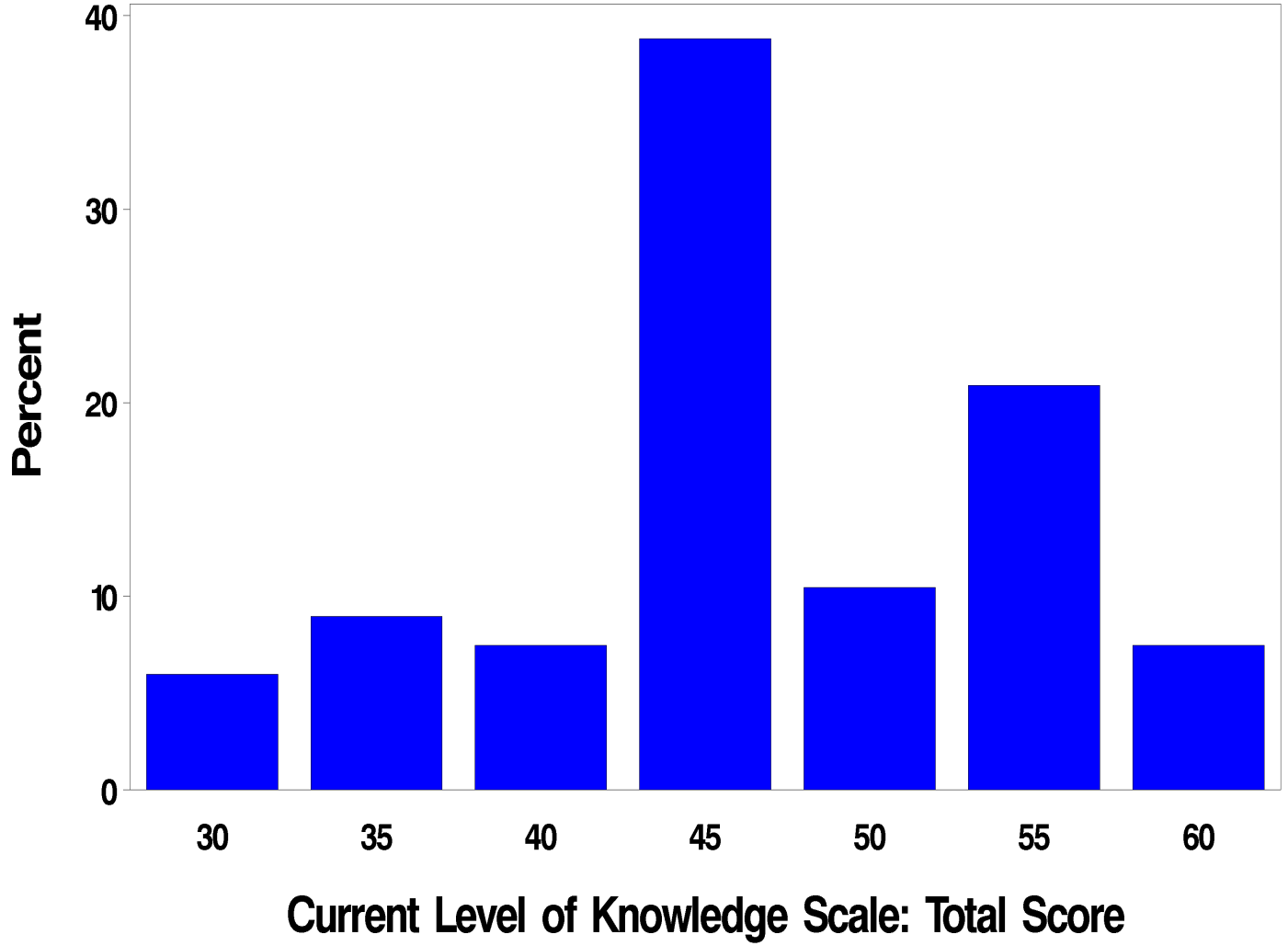
Simulated Clinical Encounters

- 10 sessions September 2012 to March 2013
- 4 to 9 students enrolled in each session
- 16 Patient Instructors and 22 supervising Clinical Preceptors participated in the Simulated Clinical Encounters.

Medical students

- 67 second year medical students
  - After excluding six students enrolled pilot (due to modification in data collection) and one student with post measures only
- Sex: 70% female, 30% male
- Age: 64% 18-24, 36% 25 or older
- Almost all, 99%, indicated it was their first experience in providing HIV counselling or testing

Pre-Simulated Clinical Encounter: HIV knowledge



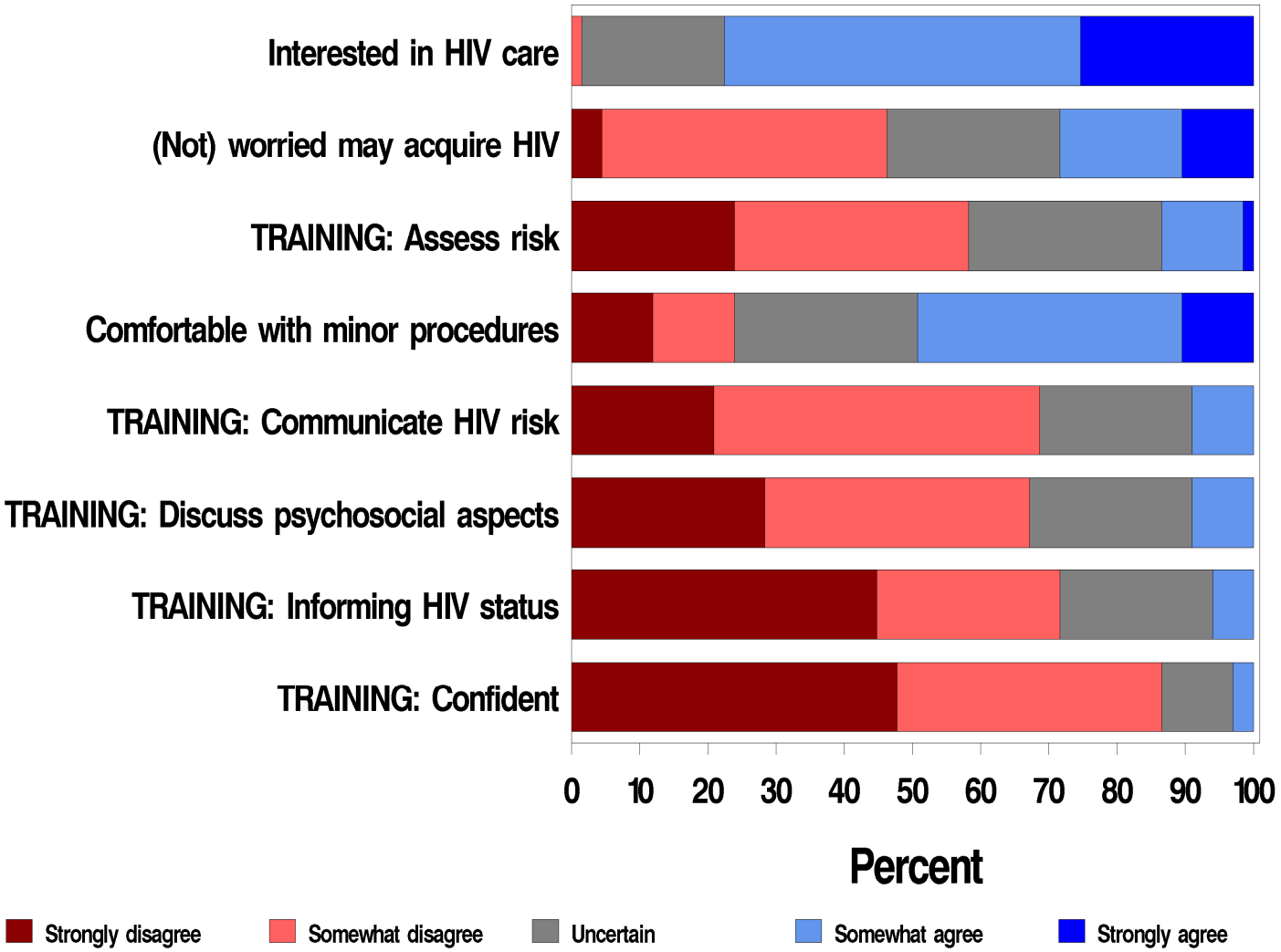
48% classified as low knowledge; 52% classified as high knowledge

HIV Care: Scale Items

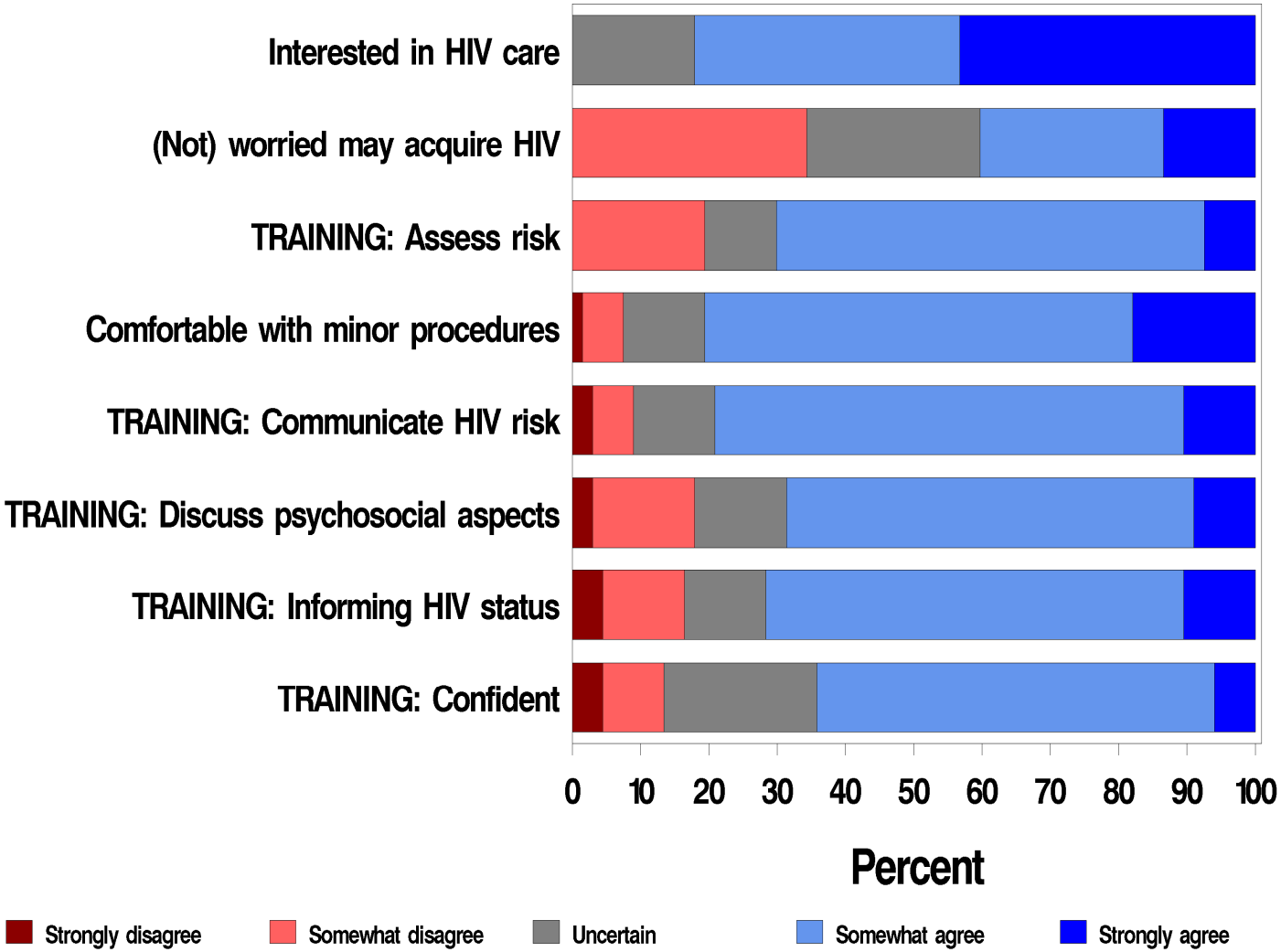
1. I am interested in providing medical care to people living with HIV/AIDS
2. I worry that I may acquire HIV infection when performing surgery or invasive procedures on people living with HIV (reverse scored)
3. I have sufficient training to assess a patient's risk for HIV infection
4. I feel comfortable performing minor procedures on people living with HIV
5. I have sufficient training to effectively communicate with a patient regarding HIV risk and testing options
6. I have sufficient training to discuss the psychosocial aspects of HIV infection with an individual affected by HIV
7. I have sufficient training and experience in informing a patient of their HIV status
8. I feel have I sufficient clinical skills to confidently provide HIV testing and counselling services as a healthcare professional

Items 3, 5, 6, 7, 8 are included in training subscale

Pre Simulated Clinical Encounter Responses



Post Simulated Clinical Encounter Responses



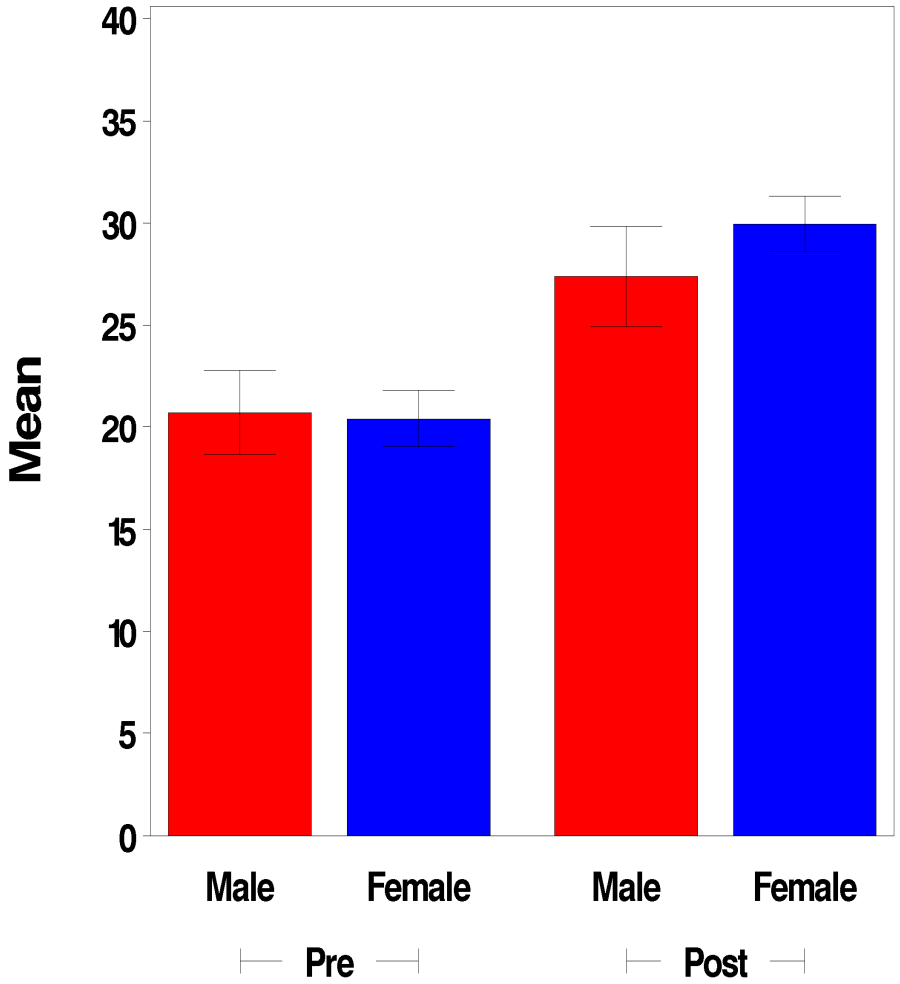
HIV Care: Overall mean scores

	Pre: mean (SD)	Post: mean (SD)	Mean difference[1]	95% Confidence interval	p-value	Correlation coefficient
Total scale[2]	20.4 (4.7)	29.4 (5.0)	9.0	(7.8, 10.3)	<.0001	0.45
Training subscale[2]	10.2 (3.6)	18.1 (3.9)	7.8	(6.8, 8.8)	<.0001	0.40

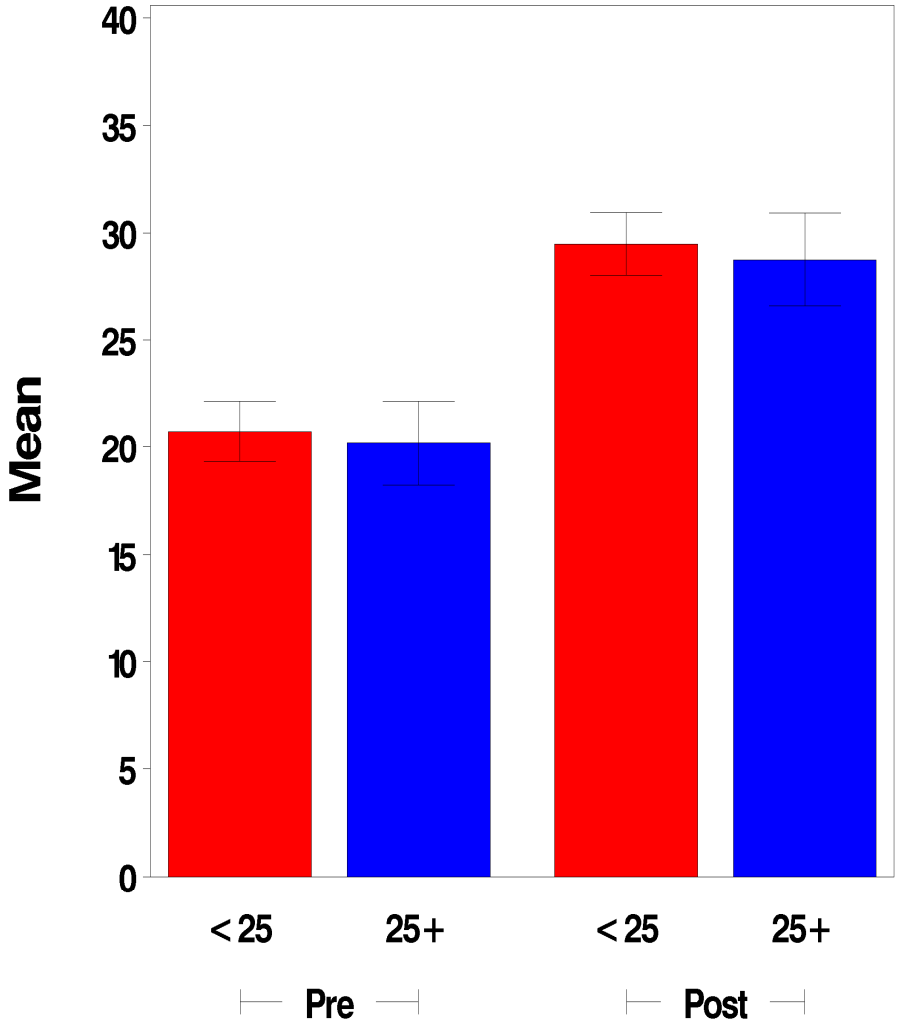
[1] paired t-test, N=67

[2] scale range 8-40, mid-range 24 (uncertain)
subscale range 5-25, mid-range 15 (uncertain)

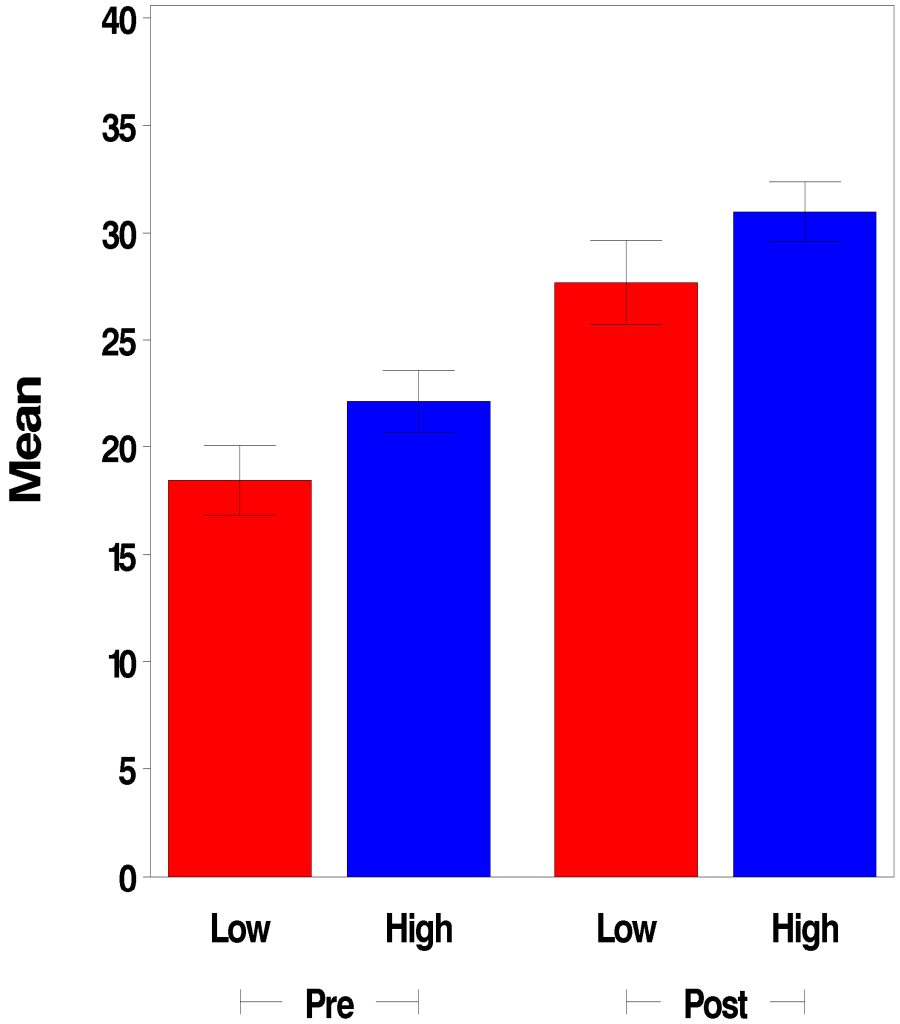
HIV Care: mean scores by sex



HIV Care: mean scores by age



HIV Care: mean scores by current knowledge



HIV Care: Multivariate model

	Effect size	95% Confidence Interval	p-value
Intercept	22.9	(20.1, 25.6)	<.0001
Time: Post vs. Pre	6.8	(4.6,8.9)	<.0001
Sex: Female vs. Male	-1.8	(-3.9, 0.4)	0.1081
Interaction: Time x Sex	3.3	(0.7,5.8)	0.0148
Age 25+ vs. <25	-1.3	(-3.0,0.5)	0.1447
HIV Knowledge: High vs. Low	3.9	(2.4,5.5)	<.0001

	Adjusted Mean	95% Confidence Interval
Post-Female	29.3	(28.0, 30.6)
Post-Male	27.8	(26.0, 29.7)
Pre-Female	19.3	(18.1, 20.5)
Pre-Male	21.1	(19.3, 22.8)

Model adjusted for session, df=9, p=0.0008

Conclusions

- Prior to the Simulated Clinical Encounter (SCE), students did not perceive that they had adequate training to provide HIV-related care.
- Following the SCE, students reported significant increases in their perceived preparedness to provide HIV-related care.
- Higher comfort with HIV-related care was associated with the females, post SCE and for those more knowledgeable about HIV prior to the SCE.

Future Implications

- This study demonstrates that interventions such as this simulated clinical encounter, which involves PHAs as Patient Instructors, can improve medical student comfort in providing HIV-related care.
- Future studies should
  - look at the sustained effects of similar interventions
  - compare effects with a control group
  - include objective evaluation of medical students' skills in addition to self-assessment.

Acknowledgements

CHIME study participants

CHIME Research Group

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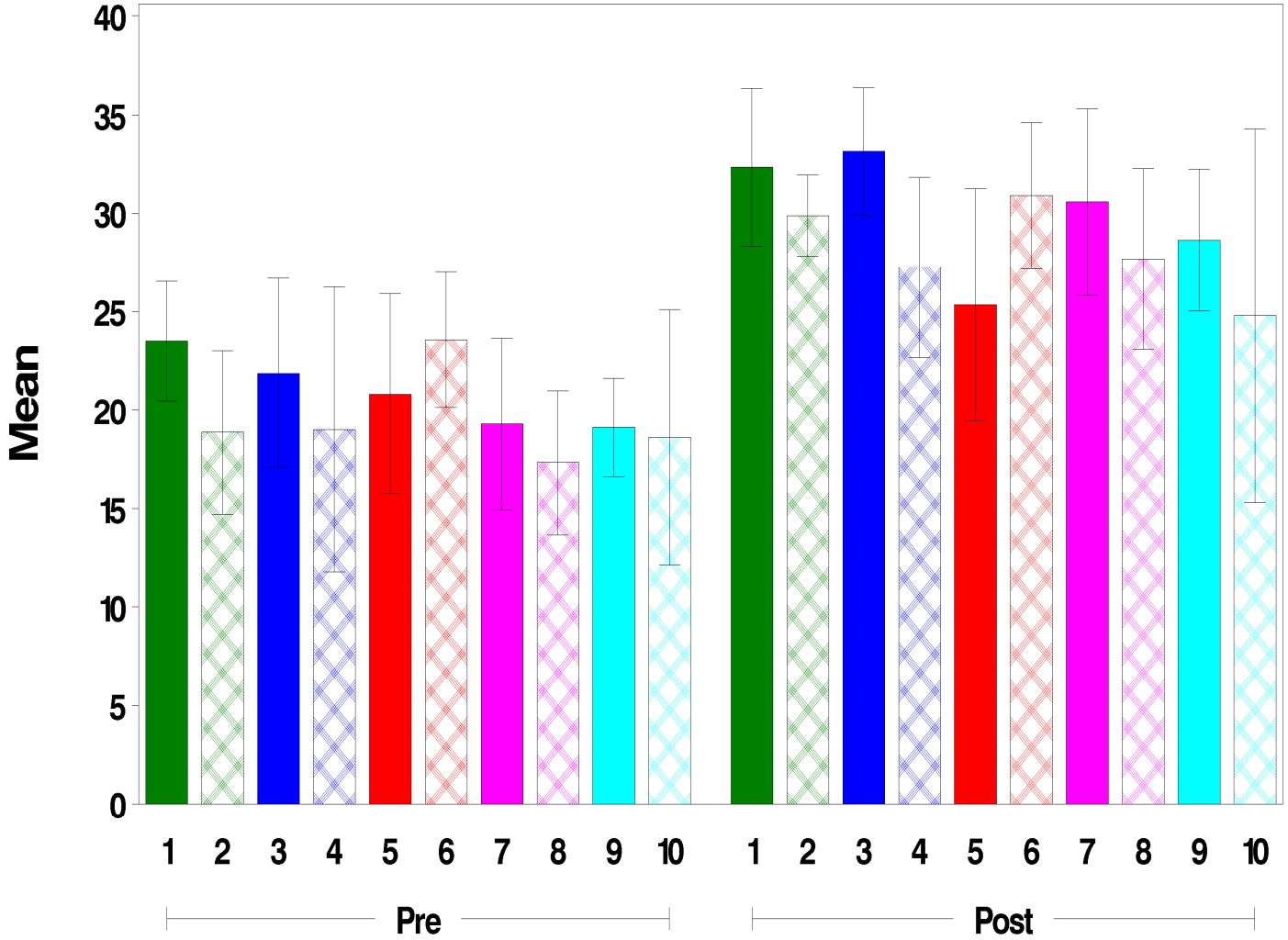
HIV Care: mean scores by session



Training Subscale: Multivariate model

	Effect size	95% Confidence Interval	p-value
Intercept	12.0	(9.8, 14.2)	<.0001
Time: Post vs Pre	6.0	(4.3,7.7)	<.0001
Sex: Female vs Male	-1.3	(-3.0, 0.5)	0.1670
Interaction: Time x Sex	2.6	(0.5,4.7)	0.0155
Age 25+ vs <25	-1.0	(-2.4,0.4)	0.1660
HIV Knowledge: High vs Low	2.6	(1.4,3.9)	<.0001

	Adjusted Mean	95% Confidence Interval
Post-Female	18.1	(17.1, 19.1)
Post-Male	16.7	(15.3, 18.2)
Pre-Female	9.5	(8.5, 10.5)
Pre-Male	10.7	(9.3, 12.2)

Model adjusted for session, df=9, p=0.0011