

## BACKGROUND

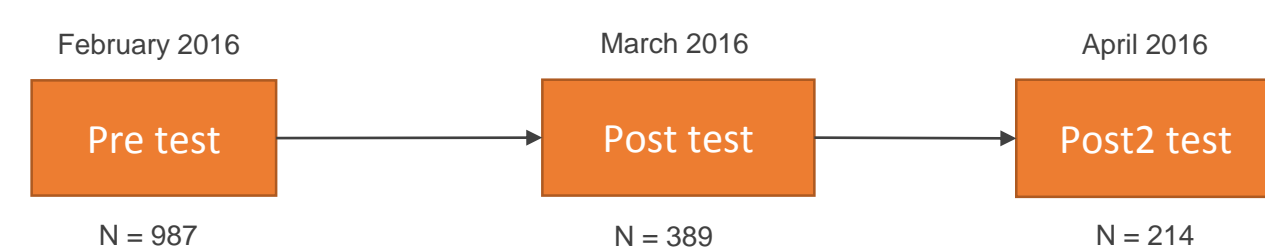
- Great need for social workers, nurses and other health professionals to train in adolescent substance use prevention/early intervention
- Various SBIRT training programs have been developed
- Limited research documenting the effectiveness of these programs on outcomes, e.g., knowledge, attitudes, competence, and confidence
- Less attention paid to psychometric properties

## CURRENT STUDY

Examines psychometric properties of training outcome measures in a large evaluation of competency-based SBIRT online simulation training program

Measures	Waves	Psychometric tests
Attitudes	Pre	Factor Analysis (EFA, CFA)
Competence	Post	Internal consistency
Confidence	Post2	Test-retest reliability
		Construct validity

## DATA AND SAMPLE



### Sample Description

	%
Gender (Male)	12.3%
Program: Nursing	7.3%
Social Work	92.7%
Full-time status	64.9%
Training level: Bachelor	12.7%
Masters	85.9%
Doctoral	1.4%

## MEASURES

	Question	Answer Categories
Attitudes about substance use and patients/clients who use substances	On a scale from Strongly Disagree to Strongly Agree, please indicate your response to the right for each of the statements below [13 items, see factor loadings]	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree
Competence to conduct adolescent SBIRT using MI skills	Please indicate how professionally competent you feel in performing these alcohol- and drug-related aspects when working with an adolescent [17 items, see factor loadings]	1. Not at all competent 2. Only a little competent 3. Moderately competent 4. Very competent
Confidence in conducting adolescent SBIRT using MI skills	Please indicate how confident you feel in performing these alcohol- and drug-related aspects when working with an adolescent [9 items, see factor loadings]	0-10 Likert scale

## ATTITUDES

### Eigenvalues



### Factor Loadings (1-factor solution was selected, including item 1,2,8,9,10,11,12)

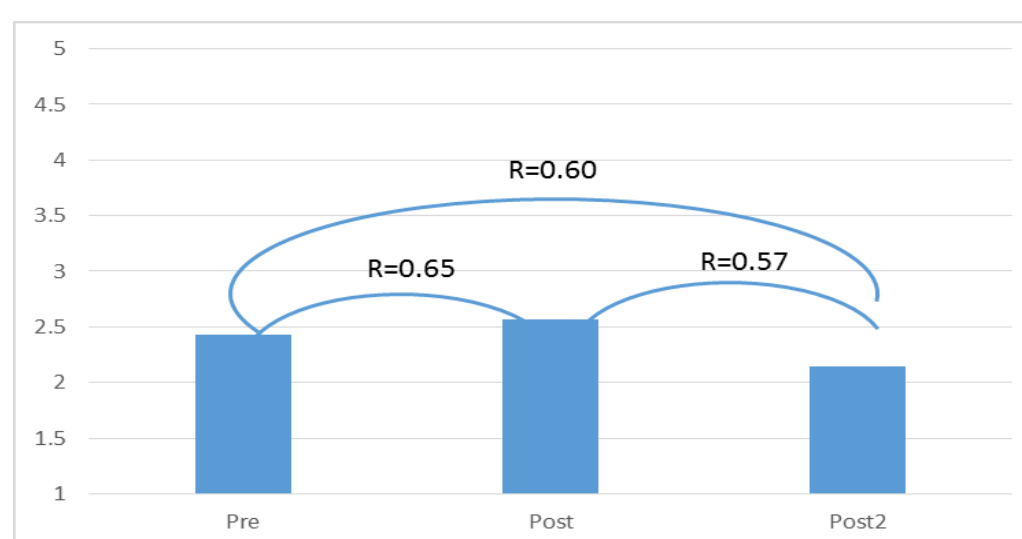
Item number	Item label	Distribution (pretest)	Factor Loadings								
			Pre test			Post test			Post2 test		
			1-factor	2-factor	3-factor	1-factor	2-factor	3-factor	1-factor	2-factor	3-factor
1	Alcoholism is associated with a weak will.	Over 80% disagree or strongly disagree	0.447*	0.500*	0.543*	0.583*	0.473*	0.483*	0.644*	0.476*	0.425*
2	An alcohol or drug dependent person cannot be helped until he/she has hit rock bottom.	Over 80% disagree or strongly disagree			0.436*	0.541*			0.627*	0.648*	0.753*
6	Daily use of one marijuana cigarette is not necessarily harmful.	50% disagree or strongly disagree			0.809*			0.829*		0.623*	0.754*
7	Marijuana use among teenagers can be a healthy experiment.	70% disagree or strongly disagree			0.593*			0.691*	0.504*	0.766*	0.892*
8	An alcohol or drug addicted person who has relapsed several times probably cannot be treated.	Over 90% disagree or strongly disagree	0.560*	0.438* (Cross-loading)	0.492*	0.631*	0.543*	0.536*	0.834*	0.755*	0.671*
9	Alcoholism is a treatable illness. [reverse coded]	Over 80% agree or strongly agree	0.924*	0.978*	0.987*	0.863*	0.940*	0.963*	0.678*	0.768*	0.862*
10	Drug addiction is a treatable illness. [reverse coded]	Over 80% agree or strongly agree	0.907*	0.972*	0.958*	0.801*	0.881*	0.910*	0.662*	0.750*	0.846*
11	Most alcohol dependent persons are unpleasant to work with as patients/clients.	80% disagree or strongly disagree	0.888*	0.939*	1.030*	0.955*	0.957*	0.988*	0.946*	0.976*	0.961*
12	Most drug dependent persons are unpleasant to work with as patients/clients.	70% disagree or strongly disagree	0.901*	0.923*	1.017*	0.947*	0.984*	0.977*	0.944*	0.968*	1.011*

Note: When an item loads significantly on more than one factor, only the strongest factor loading is shown. Different colors show strongest loadings on different factors. Item 3, 4, 5 and 13 did not load significantly on any of the factors, and, thus, they were omitted. \*P-value<.05.

### Internal Consistency by Subgroups

	Cronbach's Alpha		
	Pre	Post	Post2
Program: Nursing	0.70	0.79	0.89
Social Work	0.74	0.80	0.78
Gender: Male	0.73	0.79	0.78
Female	0.74	0.81	0.82
Level: Graduate students	0.74	0.79	0.78
Undergraduate students	0.73	0.81	0.87

### Test-retest Reliability



## COMPETENCE

### Eigenvalues



### Factor Loadings (1-factor solution was selected)

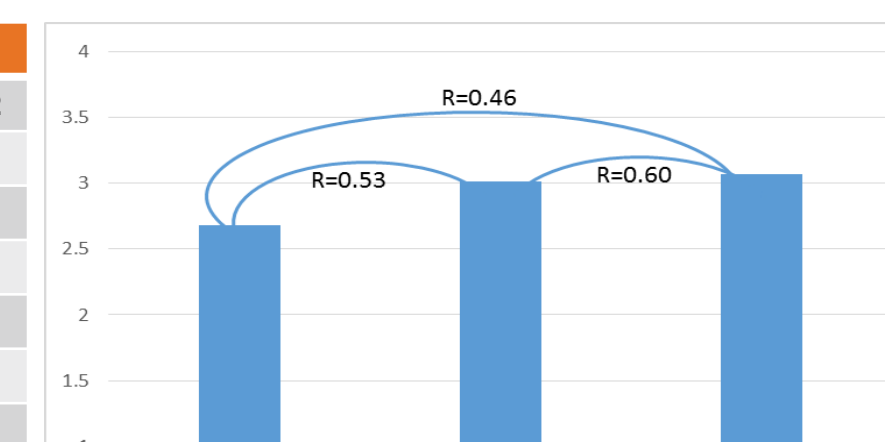
Item number	Item label	Competence		
		Factor Loadings		
		Pretest	Post test	Post test 2
1	Asking adolescents about their alcohol and drug use.	0.857*	0.914*	0.899*
2	Asking adolescents about quantity and frequency of alcohol and drug use.	0.867*	0.908*	0.899*
3	Screening adolescents for alcohol and drug problems using a formal standardized screening instrument.	0.759*	0.825*	0.780*
4	Assessing adolescent's readiness to change regarding their alcohol and drug use behavior.	0.857*	0.888*	0.917*
5	Discussing/advising adolescents to reduce or halt their drinking and drug use behavior.	0.867*	0.901*	0.958*
6	Providing personalized feedback to adolescents about their risk associated with drinking and drug use.	0.869*	0.893*	0.888*
7	Tailoring brief interventions to adolescent's motivational level.	0.846*	0.877*	0.878*
8	Using open-ended questioning with adolescents ambivalent about cutting back or stopping use of alcohol and drugs.	0.871*	0.855*	0.915*
9	Helping adolescents identify benefits of cutting back or stopping use of alcohol and drugs.	0.901*	0.928*	0.953*
10	Helping adolescents identify challenges/barriers in cutting back or stopping use of alcohol and drugs.	0.923*	0.924*	0.949*
11	Helping adolescents learn from prior attempts to cut back or stop using alcohol or drugs.	0.907*	0.905*	0.935*
12	Providing adolescents with educational materials and resources (web, print) that can help them cut back or quit alcohol and drug use.	0.811*	0.838*	0.833*
13	Helping adolescents develop a personal plan for cutting back or stopping alcohol and drug use.	0.887*	0.901*	0.954*
14	Referring adolescents with alcohol and drug problems to appropriate treatment sources based on their need.	0.861*	0.887*	0.873*
15	Conducting warm hand-offs to a colleague or specialist with adolescents with alcohol and drug problems.	0.844*	0.879*	0.830*
16	Engaging parents in the discussion about treatment.	0.831*	0.788*	0.851*
17	Arranging follow-up to help adolescents cut down or stop using alcohol and drugs.	0.887*	0.911*	0.964*

Note: When an item loads significantly on more than one factor, only the strongest factor loading is shown. \*P-value<.05.

### Internal Consistency by Subgroups

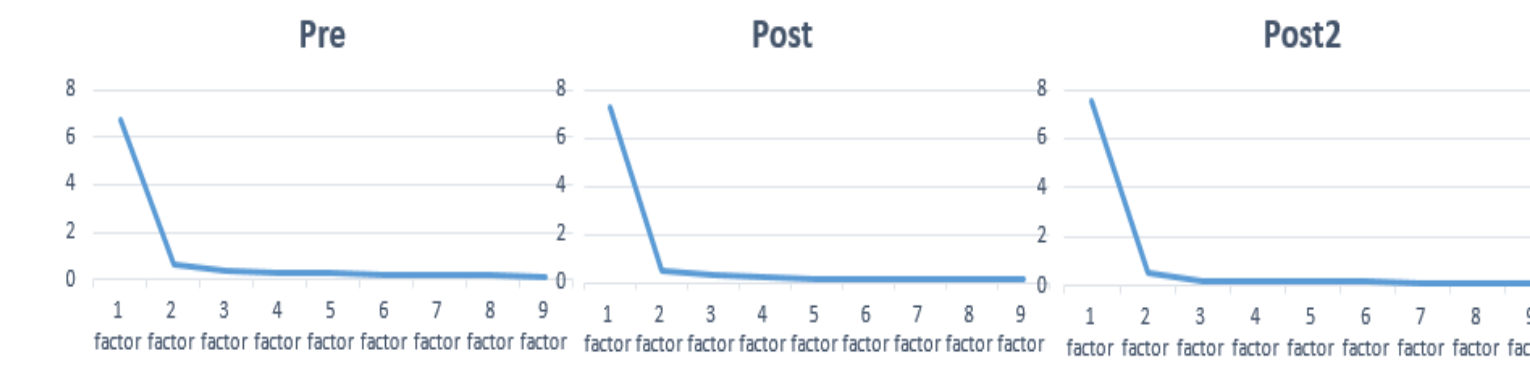
	Cronbach's Alpha		
	Pre	Post	Post2
Program: Nursing	0.98	0.97	0.97
Social Work	0.97	0.97	0.98
Gender: Male	0.98	0.98	0.99
Female	0.97	0.97	0.97
Level: Graduate students	0.97	0.97	0.98
Undergraduate students	0.97	0.97	0.98

### Test-retest Reliability



## CONFIDENCE

### Eigenvalues



### Factor Loadings (1-factor solution was selected)

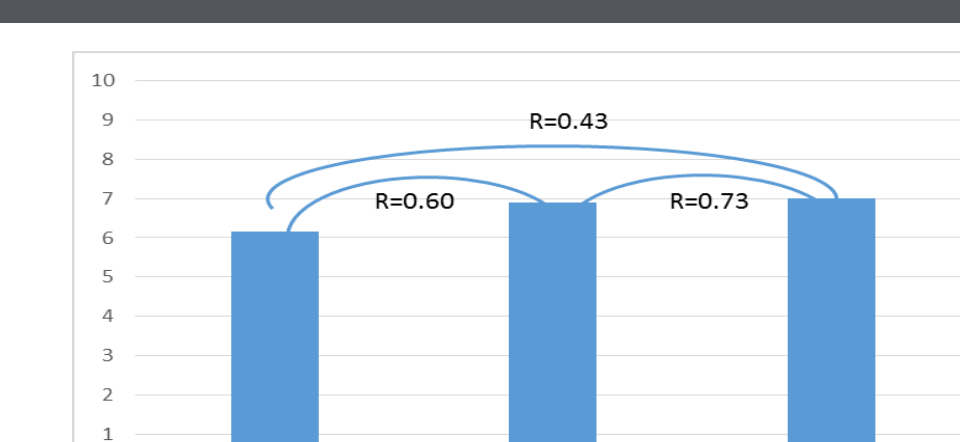
Item number	Item label	Confidence		
		Factor Loadings		
		Pretest	Post test	Post2 test
1	Reviewing the adolescent's previous substance use-related problems.	0.871*	0.897*	0.923*
2	Using information gathered about the adolescent's substance use to provide feedback.	0.904*	0.927*	0.931*
3	Reviewing possible reasons for decreasing substance use with the adolescent.	0.896*	0.903*	0.929*
4	Asking adolescents if they want to decrease their risk related to substance use.	0.861*	0.908*	0.913*
5	Helping an adolescent to agree to cut back or accept referral.	0.839*	0.902*	0.927*
6	Identifying adolescents who misuse prescription medications.	0.784*	0.810*	0.845*
7	Assessing an adolescent's readiness to change.	0.864*	0.906*	0.923*
8	Intervening with adolescents who misuse prescription medication.	0.828*	0.849*	0.869*
9	Expressing empathy and reflecting an adolescent's emotions during a brief intervention for substance use.	0.743*	0.834*	0.878*

Note: When an item loads significantly on more than one factor, only the strongest factor loading is shown. \*P-value<.05.

### Internal Consistency by Subgroups

	Cronbach's Alpha		
	Pre	Post	Post2
Program: Nursing	0.96	0.98	0.97
Social Work	0.96	0.97	0.97
Gender: Male	0.96	0.97	0.99
Female	0.96	0.97	0.97
Level: Graduate students	0.96	0.97	0.98
Undergraduate students	0.96	0.97	0.98

### Test-retest Reliability



## CONSTRUCT VALIDITY

Pre			
	Attitudes	Competence	Confidence
Attitudes	1.00		
Competence	0.22**	1.00	
Confidence	0.23**	0.80**	1.00
Post			
	Attitudes	Competence	Confidence
Attitudes	1.00		
Competence	0.21**	1.00	
Confidence	0.24**	0.82**	1.00
Post2			
	Attitudes	Competence	Confidence
Attitudes	1.00		
Competence	0.37**	1.00	
Confidence	0.36**	0.78**	1.00

\*\*P-value<.01.

## DISCUSSION

- Measures of attitudes, competence and confidence have high psychometric properties:
  - Factor analysis indicated a single factor model for all outcomes
  - Reasonably high internal consistency
  - High test-retest reliability for all outcomes
  - High construct validity across outcomes
- Future direction: test measures in other cohorts and settings

## PARTNERS AND FUNDER

Program Partners: **ireta** (Institute for Research, Education & Training in Addictions), **Kognito**, **CSWE** (Council on Social Work Education), **American Association of Colleges of Nursing**, **Center for Clinical Social Work**, **CONRAD N. Hilton FOUNDATION**

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## CONTACT INFORMATION

Presenter: **Weiwei Liu, Ph.D.** (Senior Research Scientist, Public Health, NORC at the University of Chicago, Liu-weiwei@norc.org)

Project Director: **Tracy L. McPherson, PhD** (Senior Research Scientist, Public Health, NORC at the University of Chicago, McPherson-Tracy@norc.org)