

# Psychometric testing of a self-administered, computerized adolescent drug and alcohol screening instrument

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# What is the ADASI-PC?

- **Adolescent Drug and Alcohol Screening Instrument for Primary Care**
- **Developed under a NIDA SBIR contract**
- **ADASI is a brief, self-administered, computerized drug and alcohol use and risk screening instrument.**
- **Target: Adolescents in community-based and healthcare settings (ages 12-15)**

# The ADASI Instrument

- **21 screening and 2 demographic questions (age and gender)**
- **Designed for use in waiting room or office**
- **Risk analysis: 10 questions highlight risk behaviors associated with drug and alcohol use (High and Low Risk)**
- **Drug and alcohol use levels: 11 questions screen for drug and alcohol use (No Use, Experimental Use, Dependence)**
- **Skip patterns**



## Risk Analysis Items

**In the past year:**

- **Has there been a significant period during which you were suspended, expelled, had multiple detentions, broke school rules, or had your parent(s)/guardian(s) contacted about your behavior?**
- **Have you regularly missed curfew, shoplifted, damaged property, or gotten into fights?**
- **Have your grades dropped a lot in two or more classes in school?**
- **Have people frequently offered you drugs or alcohol?**
- **Have you frequently gone to parties where there are drugs and/or alcohol?**

## Risk Analysis Items (cont'd)

- **Have some of your good friends enjoyed getting drunk or high?**
- **Did you feel sad, blue, or depressed much of the time?**
- **Have you ever gotten a ride from someone who was drinking or using drugs?**
- **If given the opportunity this year, do you think you would try: drugs; cigarettes; alcohol?**
- **Before you finish high school do you think you will: drink alcohol; do drugs; smoke cigarettes?**

- Motivational Messages (based on youth prioritization)
- Provider's Guide (with Fact Sheets and Brief Interventions)
- Introductory Video
- Online courses
- ADASI Spanish

# Specific Aims

The Specific Aims of this study were as follows:

- Determining the validity coefficient between consecutive administrations of the ADASI and a comparable youth drug use screening instrument (POSIT) with youth ages 12 to 15 years visiting health clinics and/or health education centers.
- Determining the coefficient of stability between test-retest administrations of the ADASI at two time points.
- Determining the effectiveness of ADASI on self-reported health-related changes in youth behavior, knowledge, and attitudes.
- Determining the acceptability of and satisfaction with ADASI among target youth.



# Inclusion Criteria

- Visiting one of the participating health clinics or health education centers
- Between the ages of 11.5 and 15
- Provided parental informed consent
- Able to provide locator information for tracking



<b>Time 1</b>	<b>Time 2 (1 week)</b>	<b>Time 3 (30 days)</b>
<ul style="list-style-type: none"> <li>■ Intake</li> <li>■ ADASI</li> <li>■ POSIT</li> <li>■ Parent background questionnaire</li> </ul>	<ul style="list-style-type: none"> <li>■ ADASI</li> <li>■ Motivational message</li> <li>■ Posttest survey (feedback and intentions)</li> </ul>	<ul style="list-style-type: none"> <li>■ Follow-up questionnaire (changes in substance use behavior or intentions, help-seeking, impact of ADASI)</li> </ul>

# Participant Demographics

<b>Youth Characteristics (n=166)</b>	
Mean age in years (s.d.)	13 (1.2)
% Female	50.6
Race/Ethnicity:	
• % Black/African American	95.8
• % White	0.6
• % Other	3.6
• % Hispanic/Latina	6.6
% Suspended during last school year	42.2
% Ever tried cigarettes	23.5
% Ever tried alcohol	23.5
% Ever tried marijuana	16.3
% Ever tried inhalants	2.4

# Reported Risk and Use Levels

ADASI Screening and Identified Risk Youth Levels		
Youth Risk Levels Identified by ADASI	T1 (N=166)	T2 (N=134)
	% (n)	% (n)
ADASI Risk Screener		
• High Risk for Substance Use	56.0 (93)	54.5 (73)
Substance Use/Abuse Screener		
• %No Use	31.9 (53)	32.8 (44)
• %Experimental Use	21.1 (35)	18.7 (25)
• %Moderate Use	0 (0)	<1 (1)
• %Dependence	3.0 (5)	2.2 (3)

Internal Consistency ( $\alpha$ ) of the ADASI Risk Screener					
Scale	No. of items	Time 1		Time 2	
		$N_{T1}$	$\alpha_{T1}$	$N_{T2}$	$\alpha_{T2}$
ADASI Risk Screener	10	150	0.727	126	0.746



# Test-retest Reliability

**Test-retest Reliability of the ADASI Scores Across T1 and T2**

	<b>N</b>	<b>Pearson product-moment correlation</b>	<b>ICC (95% CI)</b>
ADASI Risk Screener	166	0.603	0.432*** (0.287, 0.558)

\*\*\*p<.001

## Validity of the ADASI Scores as Measured Against the POSIT Total Risk Scale

	N	Pearson product-moment correlation
ADASI Risk Screener	166	0.511***

\*\*\* $p < .001$

External Validity of the ADASI Risk Score Versus Self-Reported Use from the POSIT, and Single-item Substance Use Scores				
	POSIT Substance Use Subscale	Ever Used Cigarettes	Ever Used Alcohol	Ever Used Marijuana
ADASI Risk Screener (T1)	0.227**	0.434***	0.348***	0.358***
p-value	0.003	0.000	0.000	0.000

\*\* p<0.01, \*\*\*p<.001

# Effectiveness Analyses - Perceived Risks of ATOD Use

Perceptions and Frequency of Thinking about ATOD Risks at Each Assessment			
Perceived ATOD Risks	Youth Intake	Post-test	30-Day Follow-Up
	Mean (s.d.)	Mean (s.d.) p-value	Mean (s.d.) p-value
<b>Total Perceived Risks</b>	<b>23.7 (9.5)</b>	<b>25.7 (8.2)*</b>	<b>26.3 (7.7)**</b>
		.015	.002
Smoke 1+ packs per day	3.1 (1.3)	3.3 (1.2)*	3.3 (1.0)*
		.040	.043
Drink alcohol 1-2x/week	2.7 (1.2)	2.9 (1.1)	2.9 (1.1)
		.114	.084
Smoke marijuana 1-2x/month	2.7 (1.2)	3.0 (1.1)*	3.0 (1.1)**
		.015	.004
Smoke marijuana 1-2x/week	2.8 (1.3)	3.0 (1.1)*	3.1 (1.1)**
		.040	.002

\*p<.050, \*\*p<.010, \*\*\*p<.001



# Perceived Risks of ATOD Use (cont'd)

Perceptions and Frequency of Thinking about ATOD Risks at Each Assessment			
Perceived ATOD Risks	Youth Intake	Post-test	30-Day Follow-Up
	Mean (s.d.)	Mean (s.d.) p-value	Mean (s.d.) p-value
Try illicit drugs once or twice	3.1 (1.3)	3.4 (1.1)	3.5 (1.1)**
		.051	.004
Use illicit drugs 1-2x/week	3.1 (1.3)	3.4 (1.1)*	3.5 (1.1)**
		.025	.001
Inject drugs once or twice	3.1 (1.3)	3.4 (1.1)*	3.5 (1.1)**
		.021	.002
Inject drugs 1-2x/week	3.1 (1.3)	3.4 (1.1)*	3.5 (1.1)**
		.011	.002
How often do you think about ATOD risks?	2.0 (1.1)	2.1 (1.1)	2.3 (1.1)*
		.347	.022

\*p<.050, \*\*p<.010, \*\*\*p<.001

# Health Care and Information Seeking Behaviors

Information and Health Care-Seeking Behaviors (n=97)		
	Youth Intake	30-day follow-up
	% (n)	% (n)
<b>Set up an appt to talk to health care provider about ATOD</b>		
<ul style="list-style-type: none"> <li>• Ever</li> <li>• In past 30 days</li> <li>• Considered setting up an appointment but didn't</li> </ul>	<p>24.7 (24)</p> <p>11.3 (11)</p>	<p>14.4 (14)</p> <p>9.3 (9)</p>
<b>Talked with health care provider about ATOD</b>		
<ul style="list-style-type: none"> <li>• Ever</li> <li>• In past 30 days</li> <li>• Considered talking with a provider</li> </ul>	<p>40.2 (39)</p> <p>18.6 (18)</p>	<p>16.5 (16)</p> <p>12.4 (12)</p>
<b>Tried to get more information about ATOD</b>		
<ul style="list-style-type: none"> <li>• Ever</li> <li>• In past 30 days</li> <li>• Considered trying to get more information</li> </ul>	<p>29.9 (29)</p> <p>21.6 (21)</p>	<p>27.8 (27)</p> <p>7.2 (7)</p>
<b>Talked with parent about problems or important things</b>		
<ul style="list-style-type: none"> <li>• Ever</li> <li>• In past 30 days</li> <li>• Considered talking with a parent about problems</li> </ul>	<p>74.2 (72)</p> <p>51.6 (50)</p>	<p>57.7 (56)</p> <p>18.6 (18)</p>

# Health Care and Information Seeking Behaviors (cont'd)

Information and Health Care-Seeking Behaviors (n=97)		
	Youth Intake	30-day follow-up
	% (n)	% (n)
<b>Talked with parent about ATOD</b>		
• Ever	55.7 (54)	
• In past 30 days	27.8 (27)	42.3 (41)*
• Considered talking with a parent about ATOD		10.3 (10)
<b>Talked with another adult about ATOD</b>		
• Ever	49.5 (48)	
• In past 30 days	26.8 (26)	43.3 (42)*
• Considered talking with another adult about ATOD		6.2 (6)
<b>Received substance abuse treatment</b>		
• Ever	1.0 (1)	
• In past 30 days	2.1 (2)	3.1 (3)
• Considered receiving substance use treatment		5.2 (5)

\*p<.050

# Substance Use Behaviors

Mean (s.d.) Substance Use and Thoughts About Use Frequencies in Past 30-Days		
Substance Use	Youth Intake	30-day Follow-Up
	Mean (s.d.)	Mean (s.d.) p-value
Total Current Substance Use	6.2 (1.1)	6.1 (.50)
• Smoked Cigarettes	1.09 (.46)	.458 1.06 (.44)
• Drank Alcohol	1.04 (.20)	.741 1.02 (.14)
• Smoked Marijuana	1.13 (.56)	.417 1.02 (.15)*
• Used Other Drugs	1.03 (.30)	.049 1.00 (.00)
		.320

\*p<.050



# Substance Use Intentions/Thoughts

Mean (s.d.) Substance Use and Thoughts About Use Frequencies in Past 30-Days		
Substance Use	Youth Intake	30-day Follow-Up
	Mean (s.d.)	Mean (s.d.) p-value
Total Current Thoughts About Substance Use	4.56 (2.1)	4.27 (.76)
• Thought about Smoking Cigarettes	1.26 (.87)	.204 1.15 (.55)
• Thought about Drinking Alcohol	1.12 (.60)	.241 1.01 (.10)
• Thought About Smoking Marijuana	1.19 (.73)	.096 1.07 (.30)
• Thought About Using Other Drugs	1.05 (.42)	.167 1.01 (.10)
		.348

# Satisfaction and Acceptability

Results (% responding yes) to the Posttest and 30--day Follow-Up Feedback Surveys	
ADASI Feedback	% (n)
<b>Post-test</b>	
Have you ever taken a questionnaire like the ADASI in a doctor's office?	17.5 (17)
Did you feel comfortable answering the questions in the ADASI?	84.5 (82)
Did you feel comfortable filling out the ADASI on the computer?	92.8 (90)
Would you/Did you share the results of a questionnaire like the ADASI with your health care provider?	71.1 (69)
Did you find the information you received after completing the questionnaire helpful?	90.7 (88)
Did you learn anything about cigarettes, alcohol, or other drugs that you did not know before the ADASI?	55.7 (54)
Would you be willing to take a questionnaire like this again in a doctor's office of community health center?	80.4 (78)

# Satisfaction and Acceptability (cont'd)

Results (% responding yes) to the Posttest and 30--day Follow-Up Feedback Surveys	
ADASI Feedback	% (n)
<b>30-day Follow-Up</b>	
Do you remember answering the ADASI questions on the computer about a month ago?	78.4 (76)
Do you remember any messages or recommendations the computer gave you after you answered the questions?	53.6 (52)
Did you follow any of the recommendations provided?	52.6 (51)
Did you use any of the referral information provided?	9.3 (9)
Did you find the information you received after you completed the questionnaire helpful?	80.4 (78)
Did the ADASI indicate that you should consider talking with your parents about ATOD?	37.1 (36)
Did you talk with your parent(s) about your ADASI results?	55.7 (54)
• If yes: Was discussing your results helpful?	49.5 (48)
• If yes: How comfortable did you feel discussing your results with your parents?	<sup>†</sup> 50.5 (49)
Did the ADASI indicate that you should consider talking with a health care provider about your results?	38.1 (37)
Did you talk with your health care provider about your ADASI results?	19.6 (19)

<sup>†</sup>[% responding "somewhat" or "very comfortable"]

# Conclusions

- Preliminary evidence for adequate psychometric properties
- Good internal consistency
- Fair to good test-retest reliability (small number of scale items, instability of the trait measured, relatively young age of participants)
- Strong concurrent and external validity with significant correlations to multi-domain youth risk screening questions
- Effective in increasing youths' perceived risks about ATOD use and their information-seeking behavior
- Significant reductions in current marijuana use



# What's Next?

Plans for the future include:

- Further evaluation of the ADASI with a more diverse sample
- Evaluation of the Brief Interventions
- Evaluation of ADASI Spanish
- Enhancements to the “look and feel” of the instrument
- Packaging of the ADASI with other Danya screening instruments.

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