**Validity and Reliability Summary
for the
Pride Questionnaire for Grades 6-12
2018**

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Introduction

The need for high-quality data on student behaviors that affect student well-being and achievement continues to be a priority for educators and administrators. The ISA Pride Questionnaire for Grades 6-12 has successfully collected these data since the early 1980s and, through vigorous research to identify evidence-based indicators, perceptions and effects of youth behaviors, its existing questionnaire reflects the most current scientific thinking on measuring these behaviors.

ISA has ensured that its collected data are of value and use thorough research attesting to validity and reliability of the questionnaire and resulting data. Over the years, ISA Pride Surveys has conducted several validity and reliability studies (1987, 1994, 2000) on its PRIDE Questionnaire for Grades 6-12. Since its inception in 1982, the questionnaire has been modified to reflect research in this field and the changing informational needs of parents, school officials and other concerned community leaders. Changes also have responded to national concerns with drug and alcohol use among school-age students and the patterns of risk and protective factors that influence student behaviors. In spring 2017, ISA conducted a validity and reliability study of its current-use questionnaire and its substance use scales.

In this report, we describe evidence from a large-scale administration of the survey conducted with 2000+ students from 13 geographically diverse schools in Alabama. Both data collection and analyses for this validation process were performed in the spring of 2017. The resulting information allows ISA to ensure the quality of its data while also providing a continual feedback loop on survey performance and data quality.

Survey Information

Core Attributes of the Pride 6-12 Survey: The survey assesses students' 12-month and 30-day history of substance use including tobacco use, alcohol, marijuana, prescription drugs (to get high), and hard drugs (e.g., heroin, ecstasy, cocaine, etc). In addition to substance use behavior, the survey asks about several related constructs including access to substances, perceptions about the frequency of peers' substance use, perceptions of peers' attitudes about substance use, perceptions of parents' attitudes about substance use, and perceptions of risk from substance use.

The Three Main Properties of Survey Design

Reliability: Reliability is the property related to whether the survey will consistently elicit similar results under similar conditions. A pre-requisite of validity is that the measure has adequate reliability. Reliability as assessed through coefficient alpha which is essentially a measure of how well the questions "hang together" to assess a singular underlying construct (i.e., substance use behavior). Coefficient alphas range from 0 to 1.0 with an alpha of .70 considered suitable and .80 is considered good. In the present sample, the coefficient alphas were .72 for 30 day and .80 for 12 month substance use. Thus, these measures of substance use would be considered reliable.

Structural Validity: Structural validity looks at the extent to which the items of each scale measure one underlying factor or multiple factors. To address structural validity, we show evidence of model fit through results from confirmatory factor analysis results (specifically the comparative fit index [CFI], the non-normed fit index [NNFI], and the root mean square error of approximation [RMSEA]). The choice of

confirmatory factor analysis to determine whether a given scale is accurately measuring a single latent construct allows for formal testing of the hypothesis that these items are measuring a unified construct. Additionally, it can identify specific questions that may not be adequately measuring the true underlying latent construct (in this case propensity for substance use) and therefore may not be ideal questions for the intended measurement purpose. A scale is considered to demonstrate the necessary structural validity when it yields a CFI and NNFI $\geq$ .90 and an RMSEA $\leq$ .08. All questions were considered to adequately "load" onto the factor if they had factor loading $\geq$ .40. As can be seen in **Table 2**, both the 30-day and 12-month use, CFI and NNFI were > .90, RMSEA < .08 suggesting that these measures demonstrate good structural validity. Additionally, the individual factor loadings for each of the substance use questions (see **Table 2A**) on their respective construct (i.e., 30 day and 12 month use) were all $\geq$ .80 indicating that each of these questions is ideal for assessing students' substance use.

Construct Validity: Construct validity refers to the degree to which the survey measures what it is intended to measure. Construct validity is demonstrated by calculating the correlation coefficient between the survey being validated and surveys designed to measure associated factors. Correlation coefficients are used in statistics to measure how strong a relationship is between two variables. Possible values for correlations coefficients range from -1.0 to +1.0. It is generally accepted that absolute values of .10, .30, and .50 reflect small, moderate, and large degrees of association, respectively, between sets of variables (Cohen, 1988). A coefficient value of +1.0 means that for every 1 unit increase in variable X (e.g., alcohol consumption), there is a 1 unit increase in variable Y (e.g., scores on a depression scale). A correlation coefficient of -1.0 means that for every one unit increase in variable X (e.g., parental supervision), there is a one unit decrease in variable Y (e.g., marijuana use). For example, we would expect youth experiencing mental health problems such as depression and trauma symptoms would report more frequent use of illicit substances (i.e., a positive correlation). Conversely, we expect that youth indicating their parents monitor their behavior, friends, and activities would report less frequent substance use (i.e., a negative correlation).

Given that illicit substance use in adolescence has been researched extensively and found to be associated with a myriad of cognitive, behavioral, experiential, and environmental risk and protective factors across the social ecology (e.g., Beato-Fernández et al., 2004; Belcher & Shinitzky, 1998; Beyers et al., 2004; Borawski et al., 2003; Bränström et al., 2007; Clevland et al., 2008; Cohn et al., 1995; Donovan, 2004; Feinstein et al., 2012; Ford et al., 2010; Kliewer & Murrelle, 2007; Oesterle et al., 2012; RachBeisel et al., 1999; Reidy et al., 2017a, 2017b; Shrier et al., 2001; Thompson & Auslander, 2007; Van Ryzin et al., 2012) we collected data on individual, relational, family, school, and community level risk and protective factors that have been substantiated in this vast literature to demonstrate the convergent of the PRIDE Survey for Grades 6-12. Based on this extensive body of research on adolescent substance use, we identified 14 pertinent constructs (see Measurement of Validation Indices section below) assessing students' perceptions/cognitions, behavior, mental health, relationships, and environment that have been shown to be related to substance use behavior. All correlations were significant and in the expected directions indicating that the survey demonstrated good construct validity. See Tables.

Study Procedures and Respondents Characteristics:

Students completed self-administered paper and pencil questionnaires in a classroom during a single class period. Passive consent procedures were used in accordance with recommended ethical guidelines (Santelli, J.S., Smith-Rogers, A., Rosenfeld, W.D., et al., 2003; Tigges, 2003): parents had the opportunity to refuse consent for their child's participation by returning a written form. Before survey administration, all students were provided the following instructions:

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"You are part of school survey to determine tobacco, alcohol, and other drug use and violence. This survey is confidential; meaning NO ONE will know how you answered the questionnaire. Although your participation is very important, it is, however, completely voluntary. It is also important that you be truthful in your answers. If there is any question you cannot or do not wish to answer just leave that question blank."

Teachers remained in the classroom during survey administration but were instructed to remain in their seats to avoid student suspicion and maintain anonymity of responses. To ensure anonymity of responses, teachers were asked not to collect completed surveys: a large envelope was provided for students to place their completed surveys. The respondents were 4,241 adolescents (M_{age} = 14.3; SD = 1.9; Range = 10 – 19 years) from a convenience sample of 13 schools (3 elementary schools; 4 middle schools; 5 high schools; and 1 K-12 school) in Alabama. See **Table 1** for sample characteristics of students.

Measurement of Substance Use

30 Day Substance Use. Students answered 7 questions assessing whether they had used illicit substances during the past 30 days. Response options were Yes or No. Items covered use of tobacco products, alcohol, marijuana, prescription drugs, and inhalants; α = .72.

12 Month Substance Use. Students answered 13 questions assessing the frequency with which they had used various illicit substances during the preceding year. Response options ranged from 0 ("did not use") to 7 ("every day"). Items covered use of tobacco products, alcohol, marijuana, synthetic drugs, prescription drugs, inhalants, and "hard" drugs (e.g., cocaine, heroin, methamphetamine, etc.); α = .80.

Measurement of Validation Indices

Perceived Risk. Students were asked to rate "how much people risk harming themselves physically or in other ways" by engaging in various substance use behaviors. Items included use of tobacco products, binge drinking, using marijuana, and prescription drugs to get high. Response options ranged from 0 ("no risk) to 3 ("great risk"); α = .92. People who perceive a high degree of risk in using nicotine, alcohol, and drugs are less likely to use such substances and we therefore expected we would see a negative correlation.

Access to Illicit Substances. Students responded to 4 items asking them "how easy" it is to get tobacco, alcohol, marijuana, and prescription drugs. Response options ranged from 0 ("don't know/can't get") to 4 ("very easy"); α = .88. A prerequisite for substance use is access and thus we expected to see a positive correlation between substance use and access.

Peer Substance Use. Students responded to 4 questions assessing their friends' use of tobacco, alcohol, marijuana, and prescription drugs. Response options ranged from 1 ("seldom") to 5 ("a lot"); α = 83. Students who have peers that use illicit substances are more likely to use tobacco, drugs, and alcohol. Therefore we expected a positive correlation between peer use and substance use.

Injunctive Peer Norms. Students answered 4 questions rating their perceptions their friends' approval of using illicit substances including tobacco products, alcohol, marijuana, and prescription drugs. The questions stem stated "How wrong do your friends feel it would be for you to…" and response options ranged from 0 ("not at all wrong") to 3 ("very wrong"); α = .93. Students who believe their peers are more accepting of nicotine, alcohol, and drug use are more likely to use such substances. Therefore we expected a positive correlation between injunctive peer norms and substance use.

Injunctive Parent Norms. Students answered 4 questions rating their perceptions their parents' approval of using illicit substances including tobacco products, alcohol, marijuana, and prescription drugs. The questions stem stated "How wrong do your friends feel it would be for you to…" and response options ranged from 0 ("not at all wrong") to 3 ("very wrong"); α = .91. Students who believe their parents are more accepting of nicotine, alcohol, and drug use are more likely to use such substances. Therefore we expected a positive correlation between injunctive peer norms and substance use.

Parental Monitoring. Parental monitoring was assessed using 9 indicators. Items assessed parental monitoring behaviors such as "my parents ask if I've gotten my homework done" and "my family has clear rules about alcohol and drug use" Response options were Yes or No. Research has consistently borne out that parents' monitoring of their children's behavior is associated with less substance use. Thus, we expected a negative correlation between substance use and parental monitoring.

School Safety. Students' feelings of safety in their school was assessed via 9 indicators. Items assessed perceptions of safety in various locations and situations within the school (e.g., at school events, in bathrooms and cafeteria, on buses, etc.). Response options ranged from 0 ("never) to 4 ("a lot"); α = .97. Among other things, students' perceptions of their own safety in school is generally positively correlated with substance use. Therefore, we expected to see a positive correlation between students' reported substance use and perceptions of school safety.

Trauma Symptoms. Trauma was measured via 17 indicators from the Child Post-traumatic Stress Disorder Symptom Scale (Foa, Johnson, Feeny, & Treadwell, 2001). Respondents rated how often symptoms related to "experiencing an upsetting event" had occurred in the past 2 weeks. Response options ranging from not at all to 5 or more times a week. Examples of the types of situations inquired about include, "Having upsetting thoughts or images about the event that came into your head when you didn't want them to," "Trying to avoid activities, people/places that remind you of the traumatic event," "Having much less interest or not doing things you used to do," and "Feeling irritable or having fits of anger."; α = .96. We expected a positive correlation between trauma symptoms and substance use.

Neighborhood Disorganization. Neighborhood disorganization was measured using the 14 indicators from the Rochester Youth Development Study scale (Thornberry, Krohn, Lizotte, Smith, & Tobin, 2003). Students were asked to respond to the question stem "thinking of your neighborhood, how much of a problem is…" rating 17 community factors from 0 (not a problem) to 2 (a big problem). Examples of items included "assaults and muggings," "street gangs or delinquent gangs," "drug use or drug dealing in the open," "abandoned houses or buildings," "vandalism," and "homeless street people."; α = .94. We expected a positive correlation between neighborhood disorganization and substance use.

Adverse Childhood Experiences (ACEs). ACEs were measured via 10 indicators derived from Dube et al. (2003) and Felitti et al. (1998). The 10 indicators tapped household dysfunction ("Did you live with a household member who was depressed or mentally ill?" "Did a household member go to prison?"), neglect ("Did you often feel that no one in your family loved you or thought you were important or special?"), physical ("Did a parent or other adult in the household ever hit you so hard that you had marks or were injured?"), emotional ("Did a parent or other adult in the household often swear at you, insult you, put you down, or humiliate you?"), and sexual abuse ("Did an adult or person at least 5 years older than you ever try to or actually have oral, anal, or vaginal sex with you?"). Students indicated with a dichotomous response ("yes," "no") whether they had experience each of the adversities; α = .82. We expected a positive correlation between ACEs and substance use.

Mood Disorder Symptoms. Mood disorder symptoms were measured using the K6. The K6 has been shown to discriminate individuals meeting DSM-IV diagnostic criteria for a mood disorder well from non-clinical levels of mood dysfunction (Kessler et al., 2002, 2003). Respondents were asked to indicate how often "IN THE LAST FOUR WEEKS" they felt "Nervous," "Hopeless," "Restless or fidgety," "So depressed nothing could cheer you up," "that everything was an effort," "Worthless," or "Angry" on a 5-point scale ranging from none of the time to all of the time; α = .88. We expected a positive correlations between Mood Disorder symptoms and substance use.

Hopelessness. Hopelessness was measured as a proxy for suicidality using 10 indicators from the Hopelessness Scale for Children (Kazdin et al., 1983). Participants were given response options of "yes" or "no" to reflect their personal attitudes regarding whether each of the ten statements described them (e.g., "I might as well give up because I can't make things better for myself," "I never get what I want, so it's dumb to want anything," and "Tomorrow seems unclear and confusing to me."); α = .71. We expected a positive correlations between hopelessness and substance use.

Suicidal Ideation. Suicidal ideation was assessed via a single item: "Have you thought about committing suicide?" The response option ranged from 0 ("never") to 4 ("a lot"). We expected a positive correlations between ideation and substance use.

Violence. Violent delinquency was measured via 7 indicators taken from the National Youth Survey (Elliot, Huizinga, & Ageton, 1985). The question stem for all items stated "About how many times did you do the following IN THE PAST YEAR?" Response options ranged from "never" to "10 or more times." Specific items pertained to 1) violence against peers, 2) violence against parents, 3) violence against teachers, 4) physical assault "with the idea of seriously hurting or killing" someone, 5) sexual assault, 6) gang violence, and 7) weapon carrying; α = .76. Given that violent youth frequently use illicit substances we expected a positive correlation between reported substance use and violent behavior here.

Data Analysis and Results

All analyses utilized structural equation modeling (SEM) in Mplus version 8 controlling for the clustering of data within schools using robust weighted least squares (WLSMV) for ordinal data (i.e., sandwich estimator). By default, Mplus uses pairwise present analysis for missing data with the WLSMV estimator. The amount of missing data for study variables was minimal (covariance coverage $\geq$ .95 for all manifest variables). Confirmatory factor analyses were first tested to determine the best fitting factor model for each of the latent variables independently. Model identification was derived by fixing the variance of all latent constructs to 1 with a mean of zero. Models were deemed to fit the underlying data adequately when RMSEA < .08 and CFI/TLI > .90.

See **Table 2** for results of measurement models indicating Structural Validity. Overall, the PRIDE Survey demonstrated good structural validity.

Once it was deemed that the measurement models adequately fit the data (i.e., structural validity was verified), we computed correlations among the substance use and the validity indices to assess construct validity. See **Table 3** for results of construct validity testing. All correlations were statistically significant and in the expected directions indicating the PRIDE Survey demonstrates excellent construct validity.

Table 1. Demographics of the Sample.

	N	%
Male	870	43.0
Female	933	46.1
DNR	219	10.8
Caucasian/White	3275	77.2
Black/African American	491	11.6
Hispanic/Latino	57	1.3
Native American	41	1.0
Asian American/Pacific Islander	49	1.2
Multi-Racial	194	4.6
"Other"	52	1.2
DNR	82	1.9
Sixth grade	409	20.2
Seventh grade	373	18.4
Eighth grade	362	17.9
Ninth grade	315	15.6
Tenth grade	266	13.2
Eleventh grade	249	12.3
Twelfth grade	48	2.4
Dual Parent Household	1350	66.8
Single Female Head of Household	320	15.8
Single Father Head of Household	70	3.5
Other Guardianship	255	12.6
DNR	27	1.3

Note. Based on a sample of 2,022 adolescents. DNR = Did not respond to the question.

Table 2. STRUCTURAL VALIDITY: Fit Indices for the Measurement Models of the Latent Constructs.

Latent Construct	Indicators	Correlated Residuals	RMSEA	90% CI	CFI	TLI	$\chi^2_{(df)}$	p	Loadings
30 Day	7	0	.065	.058 - .072	.94	.91	257.41 (14)	.00	$\geq$ .75
12 Month	13	0	.039	.036 - .043	1.0	.99	469.50 (65)	.00	$\geq$ .81
Risk	6	2	.051	.041 - .61	.99	.98	79.16 (7)	.00	$\geq$ .84
Access	4	1	.000	.000 - .038	1.0	1.0	0.58 (1)	.45	$\geq$ .83
Peer Use	4	1	.013	.000 - .046	1.0	1.0	1.73 (1)	.19	$\geq$ .75
Injunctive Peer Injunctive	4	1	.000	.000 - .021	1.0	1.0	0. 23 (1)	.88	$\geq$ .87
Parent	4	1	.000	.000 - .029	1.0	1.0	0.10 (1)	.75	$\geq$ .91
Monitoring	9	0	.046	.039 - .053	.97	.96	161. 23 (27)	.00	$\geq$ .53
Safety	9	0	.070	.065 - .075	1.0	1.0	553.45 (27)	.00	$\geq$ .90
Disorganization	14	0	.053	.049 - .058	.98	.98	566.31 (77)	.00	$\geq$ .72
ACEs	10	2	.052	.049 - .058	.96	.95	232.23 (33)	.00	$\geq$ .38
Violence	7	0	.044	.034 - .054	.99	.98	73.94 (14)	.00	$\geq$ .68
Trauma	17	0	.045	.042 - .049	.99	.99	644.50 (119)	.00	$\geq$ .75
Mood	7	0	.087	.078 - .097	.98	.97	255.71 (14)	.00	$\geq$ .60
Hopeless	10	3	.028	.021 - .035	.98	.97	89.38 (32)	.00	$\geq$ .47

Note. 30 Day = Students' substance use during the previous 30 days; 12 Month = Students' substance use over the preceding 12 months; Risk = Students' perceptions of health risk associated with substance use; Access = Students' perceptions of how easy it is to get access to tobacco, alcohol, and drugs; Peer Use = Students' perceptions of how often their peers use tobacco, alcohol, and drugs; Injunctive Peer = Students' perceptions of their peers' attitudes condoning or disapproving of substance use; Injunctive Parent = Students' perceptions of their parents' attitudes condoning or disapproving of substance use; Monitoring = Degree to which parents monitor students behavior; Safety = Students' perceptions about their personal safety while in their school; ACEs = Adverse Childhood Experiences; Trauma = PTSD symptoms; Disorganization = Neighborhood Disorganization; Hopeless = Hopelessness; Mood = Mood Disorder symptoms. Indicators = the number of indicators for each construct; Correlated Residuals = the number of pairs of error terms allowed to correlate; RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; TLI = Tucker Lewis Index; χ^2 = Chi-square value with degrees of freedom in parentheses; p = significance value; Loadings = Factor Loadings.

Table 2A. Factor Loadings for Substance Use Questions

Questions	Factor Loadings
12 Month Substance Use	
Within the past year how often have you Used tobacco (cigarettes, cigars, dip, etc.)?	0.87
Within the past year how often have you Drunk alcohol (beer, coolers, liquor, etc.)?	0.92
Within the past year how often have you Smoked marijuana (pot, hash, etc.)?	0.93
Within the past year how often have you Used cocaine (crack, etc.)?	0.96
Within the past year how often have you Used inhalants (glue, gas, etc.)?	0.95
Within the past year how often have you Used hallucinogens (PCP, LSD, etc.)?	0.99
Within the past year how often have you Used heroin (opiates)?	0.99
Within the past year how often have you Used steroids?	0.93
Within the past year how often have you Used ecstasy (MDMA, Molly)?	0.97
Within the past year how often have you Used meth (crystal, ice, crank, etc.)?	0.97
Within the past year how often have you Used prescription drugs not prescribed to you (such as Ritalin, Xanax or OxyContin)?	0.89
Within the past year how often have you Used over-the-counter drugs (to get high)?	0.92
Within the past year how often have you Used synthetic marijuana (K2, Spice, etc.)?	0.93
30 Day Substance Use	
During the past 30 days Did you smoke part or all of a cigarette?	0.80
During the past 30 days Did you smoke an e-cigarette, e-cigar, or e-hookah?	0.83
During the past 30 days Did you drink one or more drinks of an alcoholic beverage?	0.84
During the past 30 days Have you used marijuana or hashish?	0.97
During the past 30 days Have you used prescription drugs not prescribed to you?	0.82
During the past 30 days Have you used over-the-counter drugs (to get high)?	0.84
During the past 30 days Have you used inhalants (glue, gas, etc.)?	0.85

Table 3. CONSTRUCT VALIDITY: Correlations among 30 Day and 12 Month Substance Use.

	Age	Risk	Access	Peer Use	Injunctive Peer	Injunctive Parent	Monitor	Safety	Disorg	ACEs	Violence	Trauma	Mood	Hopeless	Suicidal Ideation
30 Day	.27	-.37	.66	.69	.58	.33	-.60	-.17	.22	.41	.54	.25	.23	.26	.25
12 Month	.24	-.33	.74	.66	.57	.43	-.54	-.24	.32	.38	.80	.39	.27	.33	.24

Note. 30 Day = Students' substance use during the previous 30 days; 12 Month = Students' substance use over the preceding 12 months; Risk = Students' perceptions of health risk associated with substance use; Access = Students' perceptions of how easy it is to get access to tobacco, alcohol, and drugs; Peer Use = Students' perceptions of how often their peers use tobacco, alcohol, and drugs; Injunctive Peer = Students' perceptions of their peers' attitudes condoning or disapproving of substance use; Injunctive Parents = Students' perceptions of their parents' attitudes condoning or disapproving of substance use; Monitor = Parental Monitoring (i.e., the degree to which parents monitor students behavior); Safety = Students' perceptions about their personal safety while in their school; ACEs = Adverse Childhood Experiences; Trauma = PTSD symptoms; Disorg = Neighborhood Disorganization; Hopeless = Hopelessness; Mood = Mood Disorder symptoms. All Correlations are significant at $p < .001$.

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