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The Factor Structure of Self Esteem and Its Association with Alcohol Use in American Indian Adolescents

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Abstract

Introduction: American Indian (AI) adolescents experience disproportionately higher rates of alcohol use and related consequences. While self-esteem has been found to be associated with alcohol use in non-AI samples, little is known about this relationship in AI adolescents. Further, there is a dearth of literature examining the psychometric properties of self-esteem measures for AI adolescents. The current study aims to examine the factor structure of the self-esteem items of the American Drug and Alcohol Survey (ADAS), and to better understand the relationships among self-esteem, alcohol use, and alcohol-related problems in AI adolescents.

Methods: The present study represents secondary analyses of cross-sectional data collected between 2009 and 2013. Participants (n = 3,498) were AI adolescents (M_{age}=14.8, 47.7% female) attending schools on or near reservations across 11 states. Participants completed the American Drug and Alcohol Survey.

Results: Factor analytic results suggested two factors, representing intrapersonal (from intrinsic sources) and interpersonal self-esteem (from extrinsic sources). Multilevel regression analyses revealed that, with both factors entered into the model, intrapersonal self-esteem was negatively associated with alcohol consumption and alcohol-related problems, while interpersonal self-esteem was positively associated with alcohol consumption and alcohol-related problems.

Discussion: Results suggest the importance of examining the properties of assessment tools before they are used with a community for whom they were not developed. Further, self-esteem does not appear to be universally protective. Rather, interventions should aim to consider sources from which AI adolescents are drawing self-esteem and focus on promoting more intrinsic sources rather than aiming to increase self-esteem in general.

Keywords

American Indian; adolescents; alcohol use; alcohol-related problems; self-esteem

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Introduction

Adolescent alcohol use presents a significant public health concern, as exposure to alcohol during the adolescent years is associated with increased risk for a variety of negative alcohol-related consequences and poor outcomes in adulthood (i.e., future substance use problems; (Grant et al., 2006). American Indian (AI) adolescents experience disproportionately higher rates of lifetime alcohol use: 39.7%, 52.9% and 72.5% for 8th, 10th, and 12th graders, respectively, as compared to the general population (i.e., from Monitoring the Future), who report lifetime alcohol use rates of 22.8%, 43.4%, and 61.2% for 8th, 10th, and 12th graders, respectively (Swaim & Stanley, 2018). AI youth also tend to initiate alcohol use earlier, drink more heavily, and experience increased consequences related to their alcohol use (King, Vidourek, & Hill, 2014; Schinke, Tepavac, & Cole, 2000; Whitesell et al., 2012). This is problematic given that earlier use of alcohol among AI youth is associated with later alcohol use, increased consequences related to use, and higher likelihood of developing an alcohol use disorder, even when considering the high degree of variability that exists across AI groups (Henry et al., 2011; Miller, Stanley, & Beauvais, 2012). On the other hand, some studies have also found that AI communities have higher rates of abstaining from alcohol altogether (US Department of Health and Human Services, 2010). This disparity makes clear that there may be some identifiable protective factors protecting some individuals against alcohol use and the consequences associated with it, while others are at higher risk for heavy drinking and its associated consequences.

Strengths-based approaches prioritize the identification of protective factors, and are consistent with values of AI communities, who tend to conceptualize health as being able, holistic, and encompassing the whole body (Craven et al., 2016). Moving towards a strengths-based approach to prevention and intervention for AI adolescent alcohol use and identifying positive factors that may mitigate risk is important and may be consistent with AI views (Craven et al., 2016). Moreover, such an approach may be more widely accepted in these communities, which have long seen researchers focus instead on deficits in their communities rather than what is working well (Beauvais, Jumper-Thurman, & Burnside, 2008; Hellerstedt, Peterson-Hickey, Rhodes, & Garwick, 2006; Potthoff et al., 1998). Prior work has found that a focus on risk factors may be less well accepted among AI communities than interventions focusing on increasing protective and resiliency factors, which may prove more effective (FitzGerald, Fullerton, Green, Hall, & Peñaloza, 2017) and more culturally consistent.

One such factor that may be protective against initiation of alcohol use is self-esteem, an individual's self-perception and evaluation of his or her own self-worth (Gray-Little, Williams, & Hancock, 1997). Among non-AI adolescents, self-esteem is associated with various positive outcomes, including relationship satisfaction, career success, positive self-rated health, and overall happiness (Baumeister, Campbell, Krueger, & Vohs, 2003; Orth & Robins, 2014). With regards to alcohol use in particular, a robust relationship has been observed between self-esteem and alcohol use, with higher levels of self-esteem indicating lower odds of initiating alcohol use in adolescents (Patrick & Schulenberg, 2010; Richardson, Kwon, & Ratner, 2013; Veselska et al., 2009). Further, self-esteem is also predictive of greater perception of risks related to alcohol, greater personal disapproval of

alcohol use and less alcohol consumption in 8th and 10th graders (Handren, Donaldson, & Crano, 2016). On the other hand, some research has found higher rates of alcohol use among those who report that their self-esteem is based on factors like physical appearance and peer approval (Crocker, 2002; Luhtanen & Crocker, 2002; Luhtanen & Crocker, 2005). There is also research to suggest that outcomes may differ as a result of what one's self-esteem is based upon. For example, those whose self-esteem develops based on factors such as physical appearance, peer acceptance, avoidance of rejection, and wealth drink more heavily and have poorer overall well-being compared to those whose self-esteem is based on such factors as productivity, virtue, and academic competence (Crocker, 2002; Luhtanen & Crocker, 2002; Luhtanen & Crocker, 2005).

An important limitation of the research examining the association between self-esteem and alcohol use has been its near exclusive focus on White individuals and White college students in particular. There is a relative dearth of literature examining this association in AI individuals. Further, little is known about the psychometric properties of measures of self-esteem that are currently used with AI populations despite longstanding arguments that it is poor practice to indiscriminately apply measures developed for majority group (i.e., White, Educated, Industrialized, Rich, and Democratic [WEIRD]) populations to individuals who are not members of those normative groups (Suzuki & Ponterotto, 2007). Research in this area is of particular importance, as extant literature has suggested that, while self-esteem is positively associated with overall well-being across cultures, the ways that individuals form their self-evaluations differs between individualistic and collectivistic cultures (Diener & Diener, 1995; Smith, Spillane, & Annus, 2006). Further, previous work has found support for multi- (versus uni-) dimensional measurement of self-esteem, including among non-White youth (Swaim & Wayman, 2004; Young, Werch, & Bakema, 1989). However, existing work examining the factor structure of self-esteem among non-White youth has been limited in that it has failed to include samples of AI youth (i.e., Swaim (2004) specifically used a sample of Mexican American and non-Hispanic White youth and found a three-factor model of self-esteem). Thus, to address these gaps in the extant literature, the current study aims to examine the factor structure of the self-esteem items of the American Drug and Alcohol Survey (Oetting, Edwards, & Beauvais, 1985), and to better understand the complex relationships among self-esteem, alcohol use, and alcohol-related problems in AI adolescents.

Methods

Participants and Procedures

The current study represents secondary analyses of cross-sectional data collected between 2009 and 2013 as part of a larger study examining levels of substance use, as well as risk and protective factors associated with substance use among adolescents who attend school on or near AI reservations. Schools were invited to participate if they were on or near an AI reservation and if at least 20% of their student body were American Indian. The schools were stratified into six geographic regions in which reservation-based American Indians live based on the 2000 United States Census (Snipp, 2005). Within those regions, tribal and/or school board authority approval were obtained. Parents were able to opt their children out of

participation by contacting the school, and students could decline to participate by leaving their surveys blank. Self-report surveys were administered during classes by school staff at 33 sampled schools. However, less than 1% of children at the sampled schools declined to participate or were opted out by their parents (Stanley, Harness, Swaim, & Beauvais, 2014). Participants included in the present study were a subsample of 7-12th graders who identified as American Indian (n = 3,498, 47.7% female) drawn from the larger sample of adolescents (N = 5,744, 47.0% female) that included non-AI participants. Demographic characteristics of the present sample are presented in Table 1.

Measures

Participants were administered the adolescent form of the American Drug and Alcohol Survey (ADAS), a well-validated measure of child and adolescent substance use (Oetting et al., 1985). The ADAS includes questions assessing types, frequencies, and levels of substance use as well as questions regarding normative influences to use substances, outcome expectancies related to substance use, family support, and other psychosocial characteristics, including personality factors.

Self-esteem was measured with 11 items assessing social acceptance (e.g., whether adolescents believe that other people like them), self-confidence (e.g., whether adolescents feel proud of their accomplishments), and competence (e.g., whether adolescents feel that they are able to do things well). Participants rate each item based on how much they believe each item generally described them using a 4-point scale (1 = *a lot*, 4 = *not at all*). Items were recoded (i.e., 0 = *not at all*, 3 = *a lot*) to create a meaningful zero and so that higher scores indicated more positive ratings of self-esteem. Following exploratory and confirmatory factor analyses, items loading onto each factor were summed to create total scale scores reflecting intrapersonal and interpersonal self-esteem (see Results for further detail on subscales).

Alcohol consumption was measured by creating a scale of five items assessing the frequency of engaging in various drinking behaviors. The first four questions assess frequency of drinking and frequency of drinking to get drunk in the last month and the last twelve months (e.g., “How often in the last month have you had alcohol to drink”) on a 5-point scale (1 = *none*, 5 = *20 or more times*). Scores on these first four items were recoded to establish a meaningful zero. Recoding of these four items resulted in response options on a 5-point scale (0 = *never*, 1 = *1-2 times*, 2 = *3-9 times*, 3 = *10-19 times*, 4 = *20 or more times*). The fifth question in this scale assesses frequency of binge drinking in the last two weeks (e.g., “During the last two weeks, how many times did you have 5 or more drinks in a two-hour period”) on an 11-point scale (0 = *0*, 10 = *10 or more*). Item scores were summed together to create a total alcohol consumption score with possible scores ranging from 0 – 30., with higher scores reflecting greater alcohol consumption. Cronbach’s alpha in the current sample was .88.

Alcohol-related problems were measured with 13 items assessing how frequently they had ever in their lifetime experienced specific problems as a result of their alcohol use (e.g., “Has your drinking alcohol ever caused you any of the following problems?”). Participants rate each item on a four-point frequency scale (0 = *no*, 1 = *1-2 times*, 2 = *3-9 times*, and 3

= *10 or more times*). Scores across the thirteen items were summed to create a total score reflecting frequency of participants having experienced alcohol-related problems in their lifetime.

Demographic characteristics including age, gender (0 = *male*, 1 = *female*), and grade in school were collected.

Analytic Plan

As a preliminary step, the factor structure of the self-esteem items on the ADAS was evaluated. The full sample was randomly split into two halves for exploratory and confirmatory factor analyses using IBM SPSS v 26. First, an exploratory factor analysis (EFA) using the principal axis factoring extraction method and promax oblique rotation (allowing factors to be correlated) was conducted on the 11 self-esteem items in a random half of the total AI sample (n = 1741). The scree test and parallel analysis were used as criterion for retaining factors (Cattell, 1966). The number of factors to be retained in parallel analysis was determined based on eigenvalues and by use of tables provided in Lautenschlager (1989). Next, a confirmatory factor analysis (CFA) was conducted in M*plus* version 7.1 (Muthén & Muthén, 1998) on the second random half of the present sample (n = 1699) using weighted least squares estimation method (WLSMV). WLSMV was utilized due to the ordinal nature of item responses (i.e., Likert-type scales) and has been shown to be less biased and more accurate than robust maximum likelihood in estimating factor loadings for ordinal data (Li, 2016). Overall model fit was assessed using the likelihood ratio test based on the chi-square value. A nonsignificant likelihood ratio test indicated good model fit. However, because the chi-square test rejects even adequately fitting models, especially with larger sample sizes (Hu & Bentler, 1999), fit indices based on the chi-square distribution were also used to assess model fit. Agreement among fit indices provides evidence that at least adequate model fit was achieved. The comparative fit index (CFI; Bentler, 1990), root mean square error of approximation (RMSEA; Steiger, 1990) with accompanying 90% confidence intervals (CIs), and standardized root mean square residual (SRMR) were examined. CFI values greater than .95 and RMSEA values below .10 and SRMR values below .08 indicated acceptable model fit.

Using the factors obtained from factor analyses, as recommended by Tabachnik, Fidell & Osterlind (2001), all study variables were assessed for assumptions of normality. Next, Pearson product-moment correlations were calculated between relevant study variables to explore their bivariate associations. Preliminary analyses examining intra- and interpersonal self-esteem (i.e., descriptive statistics, correlations) were conducted in IBM SPSS v 26. Finally, to examine the associations between the factors of self-esteem, alcohol consumption, and alcohol-related problems, we examined a multilevel regression model in M*plus* version 7.1 to examine the effects of both factors of self-esteem (modeled as latent variables) on alcohol consumption and alcohol-related problems, simultaneously. To account for the robust effects of age and gender on adolescent substance use, they were included in the model as covariates. While multilevel models were used to account for the nesting of participants (level 1) into communities (level 2), results focus only on level 1 variables in

the hopes of better understanding the associations among the factors of self-esteem, alcohol consumption, and alcohol-related consequences.

Results

Exploratory Factor Analysis

Exploratory factor analysis results (i.e., both scree test and parallel analysis) suggested retaining two factors. Assignment of items to the two factors was based on factor loadings of ≥ 0.40. Items with loadings below 0.40 were excluded from analyses, which led to one item being excluded from analyses: "I am good at games," with a factor score of 0.34. All remaining items exhibited factor loadings of ≥ 0.40 on one factor only. No items were identified which loaded onto both factors.

A second EFA using the principal axis factoring extraction method and promax oblique rotation was conducted on the remaining ten items to ensure that the factor loadings remained ≥ 0.40. Upon extraction, the remaining two factors accounted for 53.8% of the total variance of the variables (Initial Eigenvalues: Total = 6.19, % Variance = 61.90; Extraction Sums of Squares Loadings: Total = 5.38, % Variance = 53.80). The items that cluster on each factor indicate that factor 1 represents self-esteem stemming from intrinsic sources (i.e., intrapersonal self-esteem) and that factor 2 represents self-esteem stemming from extrinsic sources (i.e., interpersonal self-esteem).

Confirmatory Factor Analysis

For the self-esteem items of the ADAS, the two-factor model comprising factors representing intrapersonal and interpersonal self-esteem provided adequate fit to the data, $\chi^2(34) = 473.21$, $p < .001$, CFI = 0.94, RMSEA = .09, 90% CI [.09, .10], SRMR = .06. While the current standard regarding CFI is that values greater than .95 reflect good model fit and our CFI value neared, but did not reach this standard, we made the decision to retain this model as acceptably fitting given the acceptable RMSEA and SRMR values. See Table 2 for factor loadings derived from confirmatory factor analysis. Both intrapersonal and interpersonal self-esteem were found to have acceptable reliability in the present sample, Cronbach's α's = .83 and .84, respectively[1].

Bivariate Relationships

Pearson product-moment correlations revealed that intrapersonal self-esteem was significantly associated with lower alcohol consumption ($r = -.08$, $p < .001$) and lower alcohol-related problems ($r = -.09$, $p < .001$). Interpersonal self-esteem was found to be significantly associated with higher alcohol consumption ($r = .09$, $p < .001$) and higher alcohol-related problems ($r = .06$, $p = .002$). Intrapersonal and interpersonal self-esteem were significantly associated with one another ($r = .58$, $p < .001$). See Table 3 for all bivariate correlations.

[1]Based on prior literature suggesting a three-factor structure of self-esteem for Hispanic youth, we conducted a confirmatory factor analysis specifying three factors representing self-confidence, competence, and social acceptance. For this model, we found slightly worse model fit to the data, $\chi^2(41) = 662.85$, p < .001, CFI = 0.91, RMSEA = .10, 90% CI [.09, .11], SRMR = .07.

Regression Analyses

Regression analyses were conducted to examine the relationships between intrapersonal and interpersonal self-esteem (modeled as latent variables) and alcohol consumption and alcohol-related problems, controlling for the effects of age and gender; these analyses are summarized in Figure 1. Intrapersonal self-esteem was significantly associated with lower alcohol consumption, β= −1.09, *SE* = .13, $p < .001$ while interpersonal self-esteem was associated with greater alcohol consumption, β = 0.85, *SE* = 0.18, $p < .001$, after controlling for the effects of age and gender. Intrapersonal self-esteem was also significantly associated with less frequent alcohol-related problems, β = −0.31, *SE* = .13, $p = .02$, controlling for the effects of age, gender, and alcohol consumption. Interpersonal self-esteem, however, was not significantly related to alcohol-related problems, β = 0.15, *SE* = .09, $p = .12$.

Discussion

Given the simultaneous high rates of alcohol use and related consequences and high rates of abstinence from alcohol among AI adolescents (King et al., 2014; Stanley et al., 2014; US Department of Health and Human Services, 2010), it is of great importance to identify potentially malleable risk and protective factors to aid in prevention of adolescent alcohol use. Among adolescents in general, self-esteem is an important factor underlying the initiation and maintenance of alcohol use (Patrick & Schulenberg, 2010; Richardson et al., 2013; Veselska et al., 2009). One barrier to extending this line of research to AI adolescents is that, to date, no measures of self-esteem have been validated for use with this population. Thus, to address these gaps in the literature, the goals of this study were twofold: 1) to examine the factor structure of the ADAS self-esteem items (Oetting et al., 1985), and 2) to examine the role of different factors of self-esteem in American Indian adolescent alcohol use and alcohol-related problems.

Regarding the measurement of self-esteem, results of the current study suggested a two-factor structure of the self-esteem items of the ADAS, which included intrapersonal sources of self-esteem (e.g., “I like myself”) and interpersonal sources of self-esteem (e.g., “Other people like me”). These findings support a multi- (versus uni-) dimensional nature of self-esteem. Further, these subscales demonstrated high internal consistency, providing support for their reliability. This is well-aligned with previous self-esteem research, which has found evidence for the superiority of multidimensional models of self-esteem over models considering self-esteem to be a single factor (Swaim & Wayman, 2004; Young et al., 1989). This is of great importance as it may help to explain some of the mixed findings that are identified in the literature with regards to the association between self-esteem and adolescent alcohol use (Crocker, 2002; Richardson et al., 2013). If different domains of self-esteem are differentially related to alcohol use, the use of unidimensional measurement scales may fail to reflect those domains and therefore obscure the appearance of alcohol-related outcomes. Findings of the present study also differ from previous findings in that we found evidence for a two-factor model, whereas existing literature focused on dimensional measures of self-esteem among White and Hispanic youth found support for a three-factor structure: self-confidence, competence, and social acceptance (Harter, 1985; Swaim & Wayman, 2004). It may be that, for American Indian youth in the present sample, self-confidence

and competence are together reflected by intrapersonal self-esteem and social acceptance is reflected by interpersonal self-esteem. Furthermore, the idea that there are differences in cultural interpretations of the construct of self-esteem across racial/ethnic groups (including American Indians) has been supported in the literature (for a meta-analytic review, see Twenge & Crocker, 2002). For instance, the concept of self-esteem may be influenced by culturally different understandings of self-concept. Indeed, Twenge & Crocker (2002) found that there were significant differences across racial/ethnic groups in self-esteem and hypothesized that some of these differences may be due to different conceptualizations of self-concept influencing the construct of self-esteem (Twenge & Crocker, 2002). Previous research has found that Hispanic and White youth tend not to differ significantly in individualism (Oyserman, Coon, & Kemmelmeier, 2002), whereas American Indian youth tend to be significantly lower in individualism (Horse, 2001). However, there are likely other explanations for the observed difference between the factor structure of self-esteem identified for American Indian youth in the present study and the structure identified for other non-White youth in previous literature (Harter, 1985; Swaim & Wayman, 2004). Thus, future work should continue to explore these differences, perhaps through qualitative investigations of self-esteem with American Indian adolescents as there may be facets of self-esteem that are especially salient for these youth that are not being captured in the measure used in the present study.

Next, we examined how the two identified factors of self-esteem relate to alcohol use and alcohol-related problems. Both intrapersonal and interpersonal self-esteem were significantly related to alcohol consumption, with intrapersonal self-esteem being associated with lower use and interpersonal self-esteem being associated with higher use. Only intrapersonal self-esteem was associated with alcohol-related problems. These findings may help to further our understanding of the individual differences in AI adolescent alcohol use. For example, prior research has reported mixed findings regarding AI adolescent alcohol use rates compared to the general population (i.e., some studies conclude that AI adolescents drink alcohol at much higher rates than non-AI youth, while other studies find that they do not, and yet other studies find that AI youth simultaneously have higher rates of alcohol use and higher rates of abstinence than are seen in the general population; (Armenta, Sittner, & Whitbeck, 2016; Plunkett & Mitchell, 2000; Szlemko, Wood, & Thurman, 2006). Specifically, our findings suggest that different sources of self-esteem are differentially related to alcohol use such that youth who are higher in intrapersonal self-esteem may be more likely to abstain from alcohol use, whereas youth who are higher in interpersonal self-esteem are more likely to drink alcohol and experience negative alcohol-related problems. While speculative, it is possible that these studies were tapping into groups of adolescents who tend to be higher in either intra- or interpersonal self-esteem, which contributed to the observed disparate findings. These findings highlight the importance of future work examining trends in substance use including measurement of intra- and interpersonal self-esteem to allow for examination of whether these differences in alcohol use and alcohol-related problems could be explained by differences in self-esteem. Further, results of the present study suggest that, for American Indian youth, because self-esteem is not unidimensional and is instead comprised of multiple related factors, the scales are not universally protective. Interventions should aim to consider sources from which adolescents

are drawing their self-esteem and focus on promoting more intrapersonal sources rather than aiming to increase self-esteem in general. Our findings related to intrapersonal self-esteem may be reflective of other work finding self-esteem to be largely protective for adolescents (Richardson et al., 2013), while findings related to interpersonal self-esteem are well-aligned with previous literature finding that those whose basis for their self-esteem is related to peer approval and physical appearance tend to also report higher levels of alcohol use (Crocker, 2002). In a historical context, high levels of problematic alcohol use in American Indian communities may be stemming from stereotype threat, the phenomenon in which members of a marginalized group experience a "socially premised psychological threat that arises when one is in a situation for which a negative stereotype about one's group applies" (Steele & Aronson, 1995). Since the introduction of alcohol into their communities by European colonists (Duran, 2018), there have also existed stereotypes of "the drunken Indian." These harmful settler colonial portrayals have had a long-lasting impact on the self-perception of American Indian individuals who drink alcohol (Quintero, 2001). Promisingly, however, Rydell and Boucher (2010) found that positive self-esteem may buffer against the harmful effects of stereotype threat, similarly to our findings regarding the protective role of intrapersonal self-esteem. Consideration of sources from which adolescents are drawing their self-esteem also underline the notion that there may be other facets of self-esteem which are highly salient for American Indian youth that are not being measured in the present study. American Indian culture tends to emphasize cooperative living and place great importance on the extended family, group, or community, rather than the self (Garrett & Garrett, 1994). These cultural teachings might lead to a form of self-esteem that specifically arises from collective self-identity and may be especially protective against alcohol consumption and related problems given how ubiquitous these cultural teachings may be for American Indian youth. For instance, this alternative form of self-esteem may influence the types of activities that youth choose to engage in, whereby adolescents who report more of this collective self-esteem may choose to engage in more cultural activities, which will then create a positive feedback loop whereby those activities confer continued protection (Layous, Nelson, Kurtz, & Lyubomirsky, 2017). Previous work has demonstrated that other North American Indigenous (i.e., Canadian First Nation) youth cite cultural activities as being reinforcing and protective against alcohol use (Spillane et al., 2020); this has also been supported by empirical work (Goldstein, Schick, Nalven, & Spillane, under review; Spillane, Schick, Nalven, Hill, & Kahler, under review). Future work should investigate this possibility.

Limitations and Future Directions

While the present study adds important information to the body of literature regarding the measurement of self-esteem in AI adolescents, as well as the role of self-esteem in AI adolescent alcohol consumption and alcohol-related problems, the findings should be considered within the context of the study's limitations. First, the cross-sectional and correlational nature of the data precludes determination of the precise nature and direction of the associations of interest. For instance, although research suggests that self-esteem is protective against the initiation of alcohol use, it is likely that this association may be bidirectional, which adolescents' self-perceptions (including self-esteem) evolving as they begin to experience reinforcement and consequences related to alcohol use. Future studies

should address this concern through prospective, longitudinal investigations. Second, this study relied exclusively on self-report measures, which may underestimate actual substance use rates in adolescents (Brener, Billy, & Grady, 2003). Third, the nature of school-based samples precludes examination of these factors among adolescents who have dropped out of school (which includes those who may have dropped out of school as a consequence of severe patterns of alcohol use), for whom these associations may be important. Fourth, while the large sample of AI adolescents attending schools on or near reservation communities across eleven states is a notable strength, it warrants mention that this does not capture the experiences of all AI youth. For instance, it may be that disparate findings would be identified for urban versus rural AI youth, or for youth who are more or less acculturated. Future studies should consider these important contextual factors and examine the effect of acculturation on these associations. Finally, while our model demonstrated acceptable fit to the data, some values were lower than current standards (i.e., CFI of .94, slightly below the standard of .95). Thus, it is likely that this model is missing some important piece of the self-esteem construct for this population. In light of this, future research is needed to continue to elucidate factors underlying self-esteem in AI youth.

Despite these limitations, findings of the current study improve our understanding of the measurement of self-esteem among AI adolescents and of the role of self-esteem in AI adolescent alcohol consumption and alcohol-related consequences. Specifically, our results provided support for two distinct facets of self-esteem: intrapersonal (stemming from intrinsic sources, or how one feels about themselves) and interpersonal (stemming from extrinsic sources, or how one believes others see them). Moreover, they suggested that self-esteem broadly is not protective. Rather, those adolescents whose self-esteem is highly based on other's perceptions of them may be at greater risk for alcohol consumption and alcohol-related consequences. Thus, assisting adolescents with finding healthy sources of self-esteem and focusing on their personal beliefs about themselves may be an effective component of prevention and intervention programs targeting alcohol consumption and alcohol-related consequences for this high-risk population.

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Public Policy Relevance Statement:

Alcohol use is among the most pressing health disparities facing Indigenous communities. There is a call within these communities to consider factors which confer protection against the development of alcohol use and related problems. Results of the present study suggest the importance of understanding sources from which Indigenous adolescents draw self-esteem, as it is not universally protective.

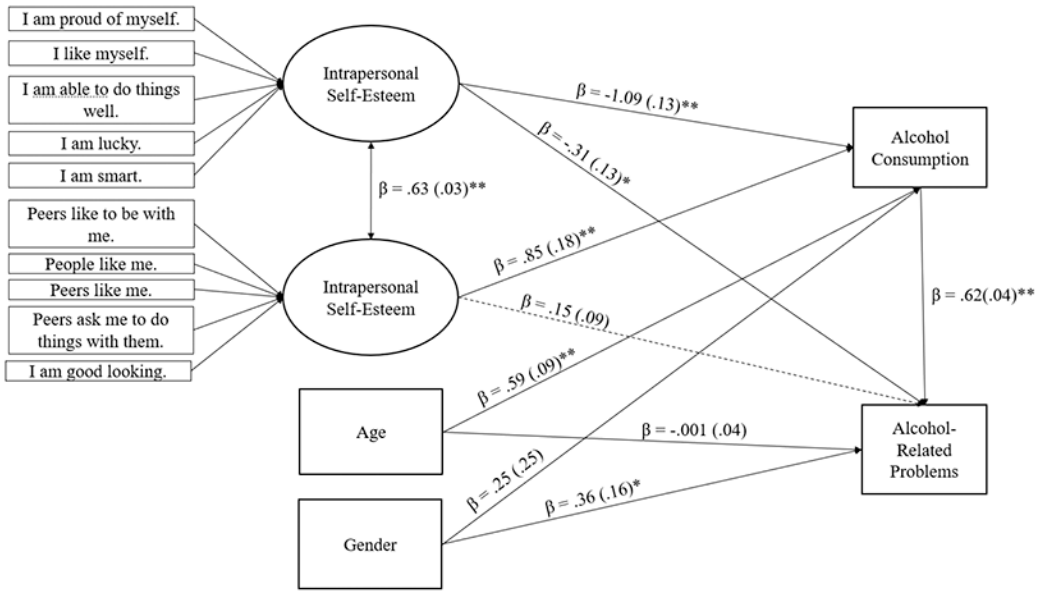

Figure 1. Summary of regression analyses

Note. *$p < .05$, **$p < .001$

Table 1.

Sample Characteristics

Variable	*M* (*SD*)	*N* (%)	Range
Age (years)	14.76 (1.70)		10-21
Gender			
Male		1708 (48.8%)	
Female		1672 (47.8%)	
Grade			
7th grade		775 (22.2%)	
8th grade		728 (20.8%)	
9th grade		601 (17.2%)	
10th grade		521 (14.9%)	
11th grade		508 (14.5%)	
12th grade		365 (10.4%)	
Ever drank alcohol		2082 (59.5%)	
Ever been drunk		1523 (43.5%)	
Alcohol Consumption	2.68 (4.51)		0-28 *
Alcohol-Related Problems	2.35 (4.23)		0-39
Intrapersonal Self-Esteem	11.08 (3.32)		0-15
Interpersonal Self-Esteem	10.53 (3.33)		0-15

Note.

* The total range of scores possible on the alcohol consumption scale was 0 – 30; ranges presented here reflect the observed scores in the present study.

Table 2.

Standardized Factors Loadings for 10 Self-Esteem Items Included in Confirmatory Factor Analysis

Item	Intrapersonal Self-Esteem	Interpersonal Self-Estem
I am proud of myself.	.70	
I like myself.	.71	
I am able to do things well.	.61	
I am lucky.	.46	
I am smart.	.57	
Peers like to be with me.		.68
People like me.		.75
Peers like me.		.60
Peers ask me to do things with them.		.57
I am good looking.		.46

Note: One item, “I am good at games,” exhibited factor loadings < .40 for both factors in exploratory factor analyses, so was dropped from further analyses.

Table 3.

Correlations Among Variables of Interest

		1	2	3	4	5	6
1.	Age	-					
2.	Gender	−.02	-				
3.	Intrapersonal self-esteem	.10**	.05*	-			
4.	Interpersonal self-esteem	.09**	−.07*	.58**	-		
5.	Alcohol consumption	.21**	.04*	.09**	−.08**	-	
6.	Alcohol-related problems	.13**	.07*	.06*	−.09**	.66**	-

Note:

* $p<.01$

** $p<.001$