

## Preventing Substance Use in American Indian Youth: The Case for Social Support and Community Connections

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### ABSTRACT

**Aims:** This study explored the relationship between social support, community connections, self-esteem, and culture on misuse in American Indian youth. **Methods:** The study team developed a culturally-responsive 16-question survey for American Indian youth ages 12–20 living in six American Indian communities in the Great Plains Region of the United States. The study was grounded in primary socialization theory and variables were explored using regression models. **Results:** A total of 565 American Indian youth completed the participant survey between January 2016 and August 2017. The present study found that community connections were negatively associated with marijuana use in American Indian youth. Higher community connection scores were associated with higher social support and self-esteem scores. **Conclusions:** Tribally-led prevention initiatives can fill an important socio-behavioral prevention gap by facilitating social support opportunities for American Indian youth who may not have adequate support from immediate family or friends.

### KEYWORDS

American Indian youth; substance use; community; social support; primary socialization theory

We are struggling so much with meth and drugs and prescription drugs ... no one ever tells them they can be someone to feel good about ... The kids, they get a lot out of these programs. We can get them surrounded by people who care and someone to connect with, and that makes them feel good.

– Prevention Initiative Elder, 2017

### Introduction

American Indian communities make up more than 567 tribal nations in the United States (BIA, 2016). They are vibrant, rich, and culturally diverse—with distinct languages, customs, kinship systems, and traditions. Spirituality and relationships are fundamental aspects of American Indian culture and kinship systems. Kinship systems encompass all aspects of family and extended relationships, providing support that is critical to the health and wellbeing of Indian Nations (Red Horse, 1997). As children become young adults, they are given roles in tribal, cultural, and ceremonial events with the guidance of their families. Kinship systems allow youth to learn lessons of responsibility and the value of helping others. In many tribes, when an American Indian youth strays from what they have been taught, their parents may call upon an adult,

family member or tribal elder to talk with them. Through these discussions, American Indian youth learn to value and respect life. This unique form of support provided through kinship systems can be used to address misuse in American Indian youth.

Misuse in American Indian youth is a significant challenge to public health and tribal communities. American Indian youth living on or near a reservation report significantly higher rates of misuse, including marijuana, prescription drugs, and alcohol (Sarche & Spicer, 2008). American Indian youth are more likely to initiate misuse at an earlier age, use multiple substances at one time, and have higher rates of traumatic exposure, an occurrence which has been identified with early misuse, and alcohol and substance use disorders (Boyd-Ball, Veronneau, Dishion, & Kavanagy, 2014; Dickerson et al., 2010; Whitesell, Beals, Mitchell, Manson, & Turner, 2009).

Substance use disorder is one of the most common psychiatric disorders among American Indian youth—one study found that 18.3% of American Indian youth surveyed were abusing substances or dependent on substances in the last six months (Sarche & Spicer, 2008). Other research has found that the consequences of youth misuse (substance use) often include: poor academic performance, delinquent activity, violent

behavior, suicide, and alcohol-related mortality (Stanley, Harness, Swaim, & Beauvais, 2014). American Indian youth are 2.5 times more likely to commit suicide than non-American Indian youth (Dickerson et al., 2010; Hyde, 2011). Alcohol, marijuana and other drug use is associated with attempted and completed suicide attempts in American Indian youth (Borowsky, Resnick, Ireland, & Blum, 1999; Grossman, Milligan, & Deyo, 1991).

Community connections and social support may reduce substance misuse in American Indian youth. Previous studies have found that the construct of social support is appropriate for understanding misuse and a multitude of health problems in American Indian communities (Oetzel, Duran, Jiang, & Lucerom, 2007). Previous research has also found that certain protective factors may reduce misuse in American Indian youth, these include: self-esteem (Patrick, Schulenberg, Maggs, & Maslowsky, 2014) community attachment (Hawkins, Cummins, & Marlatt, 2004) community connections (Wray-Lake et al., 2012), cultural connectedness (Snowshoe, Crooks, Tremblay, Craig, & Hinson, 2015), influence of peers (Patrick et al., 2014), drinking attitudes (Patrick et al., 2014), family communications (Oetting, Beauvais, & Edwards, 1988) and social support (Freedenthal & Stiffman, 2004). Further, previous research has found that social support is an important factor in reducing alcohol-exposed pregnancies in American Indian youth (Jensen, Baete Kenyon, & Hanson, 2016).

Given the prevalence of misuse in American Indian youth and the unique sociocultural context that serves as the foundation for American Indian communities in the United States, culturally based prevention programs have been funded in communities to reduce youth misuse. One example is the Substance Abuse and Mental Health Services Administration (SAMHSA) Partnerships for Success project based on the Strategic Prevention Framework (SPF). The SPF is a five step planning process for preventing misuse at the community level. Briefly, the SPF infuses cultural competence and sustainability into a five-step process: (1) assess needs, (2) build capacity, (3) plan, (4) implement, and (5) evaluate. (SAMHSA, 2015). A 5-year SPF initiative is being implemented in the Great Plains Region of the United States. The prevention team designed and authored the present study to learn more about the role of social support and community connections in the prevention of American Indian youth misuse.

### ***The prevention team***

The prevention initiative was developed based on the SPF and is a 5-year substance use prevention program for youth ages 12–20 and their families (SAMHSA, 2015). The purpose of the initiative is to expand prevention activities to reduce underage drinking while promoting a holistic wellness movement in six American Indian communities. The initiative is facilitated by a tribal consortium and team members, which include site coordinators in each community, a cultural resource coordinator, project director, evaluator, support staff, program consultants, and various tribal program partners.

### ***Theoretical support for the current study***

Chronic trauma and unresolved grief stemming from European conquest and genocide contributes to the social pathology of substance use, suicide, and other social problems in Native American populations (Brave Heart & DeBruyn, 1998). The US-Indian history is fraught with slavery, land theft, ethnocide, force relocation, invasion, and human rights violations (Brave-Heart-Jordan, 1995; Merjian, 2010). Examples include the Boarding School Era beginning in 1824 that forced Native American children to assimilate to the dominant culture. Children were punished for speaking their Native language and suffered physical, sexual, and emotional abuse (Evans-Campbell, 2008). In addition, the Dawes Act of 1887 forced Native people to live on reservations with limited resources—Native American people died from disease, starvation, and grief (Merjian, 2010). The intergenerational transmission of these traumas is evident today resulting in losses from suicide, alcoholism, violence, and abuse. American Indian youth have a unique culture and history that must be considered when exploring substance use risk and protective factors.

Multiple individual and community factors influence youth misuse. In a national longitudinal study of adolescent health (NLSAH), the role of families, schools and personal characteristics were identified as major factors influencing adolescents' health and behavior (Strand & Peacock, 2002). Given the complexity and fluidity of American Indian culture, community, and social interaction, Primary Socialization (PS) theory guided this study. PS theory builds on social learning theory that states individual behaviors are influenced by the attitudes and behaviors of the social group to which that individual belongs (Oetting & Donnermeyer, 1998).

Within American Indian communities, PS theory is useful for exploring social norms, youth behaviors, and primary socialization sources (Oetting, Donnermeyer, & Deffenbacher, 1998), yet socialization experiences in American Indian communities are different from non-American Indian communities. A key difference is that American Indian communities have oral histories, protocols, and traditions that outline how youth and tribal members should behave. These include specific rites of passage, ceremonies, communication protocols, and other customs that should be followed by American Indian youth. Many of these histories and protocols were transmitted through storytelling. Historically, grandmothers would tell stories to educate children about the values, behaviors, spiritual practices, and culture. Teaching through story conveys powerful messages that inspire healing, humor, education, and connection—story telling has been used by American Indian people for thousands of years. Primary socialization sources in American Indian reservation communities are the result of these stories and histories including immediate family and extended family members, kinship systems/clans, schools, peers, tribal elders, law enforcement, tribal health programs, and other agencies. Within PS theory, community characteristics such as poverty, and secondary socialization sources, such as ceremonies, traditions, kinship systems, churches, oral histories, and media, indirectly influence behavior. Those learned behaviors are the result of interactions between social, psychological, and cultural characteristics (Oetting et al., 1998). PS theory focuses on misuse and deviant behavior among youth and suggests that all community characteristics affect the primary socialization process because “they either influence the bonding between primary socialization sources and the youth or they influence the attitudinal and behavioral norms that are transmitted through primary socialization sources” (Oetting et al., 1998) (p. 1633). In essence, the primary socialization sources function as a system of social support that serves as a barrier through which connections between community characteristics and a youth’s behavior learning process are either strengthened or weakened (Oetting & Donnermeyer, 1998). PS theory reveals the potential strength of protective factors found in American Indian communities such as social support, kinship systems, cultural connections that influence American Indian youth, and the primary socialization process.

### **The current study**

Participation in cultural activities is associated with reduced misuse in American Indian youth (Walters,

Simoni, & Evans-Campbell, 2002). However, limited research has been published on American Indian youth living in the Great Plains Region of the United States.

The team worked with communities and youth to develop a culturally responsive 16-question survey for American Indian youth ages 12–20. This survey included the Rosenberg self-esteem scale. The prevention initiative supports various culturally based, community driven activities including sports, youth leadership workshops, cultural camps, beading and drumming classes, social dances, traditional values curriculum, Adverse Childhood Event trainings, Native H.O.P.E. (a proactive suicide prevention project), traditional storytelling, recreational activities, and a variety of community wide events.

This study examines the prevalence of misuse among American Indian reservation and urban youth involved in culturally based prevention activities. The primary research question the current study seeks to answer is, “What is the relationship among social support, community connections, self-esteem, and culture on misuse in American Indian youth?”

## **Methods**

### **Participants and procedures**

Participants in this study included 565 American Indian youth in six American Indian communities. The average age of American Indian youth was 14.30 years ( $SD = 1.66$ , range 12–20). More than 92.3% of the sample lived on reservations and 7.7% lived in an urban Indian community. The majority of the sample was American Indian (98.4%) and 1.6% selected other unspecified racial/ethnic group. No youth identified as Hispanic. Five of the prevention sites are on reservations and one is located in an urban Indian location. No areas are considered metropolitan and the reservation geography is rural, medically underserved, and isolated.

Data collection occurred between January 2016 and August 2017. Recruitment for the prevention initiative was completed by advertising in local community newspapers, distributing flyers, and posters across the community, and word-of-mouth. The prevention initiative employed passive parental consent procedures. Prior to the survey, prevention staff worked with tribal prevention site coordinators to follow parental consent procedures for survey participation based on tribal protocols. For example, in one community site coordinators discussed the prevention initiative with parents and the kinds of surveys that would be used

to evaluate the initiative. Parents had the opportunity to ask questions and opt-out. In another community, surveys were administered by a teacher of a local school who agreed to participate in the prevention initiative. The teacher followed school protocols for passive parental consent. In all instances, the prevention initiative honored the tribe's survey protocol. The prevention initiative followed IRB procedures for the IRB(s) of record. Youth who had implied parental consent and assented to participation completed the anonymous survey during various prevention activities.

### Measures

Descriptive statistics are provided for all study variables in Table 1.

#### Drug and alcohol use

To assess the prevalence of drug and alcohol use, the survey included three questions related to drug and alcohol use. (1) "In the past 30 days, how many days did you use a mind altering substance/illegal drug?" Response options were a number between 0 and 30. (2) "How many days did you have 5 or more alcoholic beverages on the same occasion in the past 30 days?" Response options were a number between 0 and 30. (3) "How many times in the past 30 days have you used the following drugs?" The response options included a list of drugs. Response options were marijuana, synthetic marijuana, prescription drugs, meth, other illegal drugs, and inhalants with the following frequencies: 0 (0 times), 1 (1 or 2 times), 2 (3 to 5 times), 3 (6 to 9 times), or 4 (10 or more times). Responses for all drug and alcohol use questions were combined to create an additional variable for all substance use (McDonald's  $\omega = .87$ ), where CFA accounting for number of days or ordinal responses about list of drugs showed adequate fit (RMSEA = .049, 90% CI = [.031, .068], CFI = .981, WRMR = 0.801).

#### Culture

To assess the importance of culture, youth were asked, "How important are spiritual values and practices in your daily life?" Response options were based on a 4-point scale of 1 (not important) to 4 (very important).

#### Community connections

Youth were presented with three statements developed by the community and asked their level of agreement for each: (1) My community honors traditional values and practices such as respect for elders and generosity ( $M = 4.3$ ,  $SD = 1.1$ ). (2) My community does not

**Table 1.** Descriptive statistics for all study variables.

| Variable               | N   | M (SD)/%     | Possible Range | Observed Range |
|------------------------|-----|--------------|----------------|----------------|
| Male                   | 245 | 42.50%       | n/a            | n/a            |
| Female                 | 330 | 57.30%       | n/a            | n/a            |
| American Indian        | 567 | 98.4%        | n/a            | n/a            |
| Other                  | 9   | 1.6%         | n/a            | n/a            |
| Age in years           | 565 | 14.30 (1.66) | 12–20          | 12–20          |
| Reservation            | 527 | 92.30%       | 0–1            | 0–1            |
| Urban Indian           | 44  | 7.70%        | 0–1            | 0–1            |
| Illegal Use            | 562 | 1.04 (4.05)  | 0–30           | 0–30           |
| Binge Drinking         | 569 | 0.35 (2.18)  | 0–30           | 0–30           |
| Marijuana              | 566 | 0.42 (1.05)  | 0–4            | 0–42           |
| Prescription Drugs     | 563 | 0.05 (.37)   | 0–4            | 0–.05          |
| Meth                   | 563 | 0.02 (.19)   | 0–4            | 0–.02          |
| Inhalants              | 563 | 0.05 (.34)   | 0–4            | 0–.05          |
| Social Support         | 443 | 19.70 (4.42) | 0–25           | 5–25           |
| Community Connections  | 463 | 12.58 (2.77) | 0–15           | 3–15           |
| Self-esteem            | 445 | 27.36 (6.12) | 0–35           | 7–35           |
| Culture Very Important | 547 | 30.5%        | 1–4            | 1–4            |
| Family Communication   | 553 | 47.20%       | 0–2            | 0–2            |

approve of people my age drinking alcohol or doing drugs ( $M = 4.1$ ,  $SD = 1.3$ ), and (3) In my community, when someone speaks our language they are respected and honored ( $M = 4.4$ ,  $SD = 1.0$ ). Response options were based on a 5-point scale of 1 (disagree) to 5 (strongly agree). Responses were combined to create an additional variable for community connections (Cronbach's  $\alpha = .736$ ). CFA revealed adequate fit of a one-factor solution (RMSEA = .034, 95% CI = [ $<.001$ , .098], CFI = .997, SRMR = .038).

#### Social support

Youth were asked a series of questions to describe their level of agreement with five statements related to social support (e.g., There is a special person who is around when I am in need). Participants responded using a 5-point scale, ranging from 1 (disagree) to 5 (strongly agree), a subscale of the Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988). Responses were combined to create an additional variable for social support (Cronbach's  $\alpha = .751$ ).

#### Influence of peers and family

Youth were asked, "How would your close friends feel about you drinking one or two alcoholic beverages almost every day?" Response options were 1 (neither approve nor disapprove), 2 (somewhat disapprove), 3 (strongly disapprove), and 4 (don't know). Youth were asked, "How would your family feel about you drinking one or two alcoholic beverages almost every day?" Response options were 1 (neither approve nor disapprove), 2 (somewhat disapprove), 3 (strongly disapprove), and 4 (don't know).

**Table 2.** Study variable correlations.

|                        | 1      | 2     | 3        | 4       | 5       | 6       | 7       | 8      | 9       | 10     | 11    | 12     |
|------------------------|--------|-------|----------|---------|---------|---------|---------|--------|---------|--------|-------|--------|
| 1. Age                 |        |       |          |         |         |         |         |        |         |        |       |        |
| 2. Gender              | -.061  |       |          |         |         |         |         |        |         |        |       |        |
| 3. Urban               | .034   | -.055 |          |         |         |         |         |        |         |        |       |        |
| 4. Reservation         | -.034  | .054  | -1.000** |         |         |         |         |        |         |        |       |        |
| 5. Illegal Drug Use    | .155** | .06   | .024     | -.035   |         |         |         |        |         |        |       |        |
| 6. Binge Drinking      | .089*  | -.055 | .106*    | -.109** | .531**  |         |         |        |         |        |       |        |
| 7. Marijuana           | .248** | .061  | -.01     | .006    | .483**  | .236**  |         |        |         |        |       |        |
| 8. Community           | -.106* | .004  | .013     | -.013   | -.06    | -.119*  | -.135** |        |         |        |       |        |
| 9. Social Support      | -.032  | -.069 | -.065    | .065    | -.146** | -.138** | -.195** | .313** |         |        |       |        |
| 10. Self-esteem        | -.038  | -.092 | .02      | -.02    | -.043   | -.103*  | -.081   | .369** | .503**  |        |       |        |
| 11. Pro drug attitudes | .024   | -.015 | -.036    | .038    | -.089   | .003    | -.058   | .108*  | .202**  | .031   |       |        |
| 12. Poly drug use      | .186** | .032  | .203**   | -.211** | .928**  | .770**  | .566**  | -.119* | -.202** | -.094  | -.065 |        |
| 13. Culture            | -.004  | .058  | .041     | -.040   | -.119** | -.101*  | -.043   | .324** | .311**  | .253** | .086  | -.116* |

\*Significant at  $p < .05$ .\*\*Significant at  $p < .01$ .**Table 3.** Summary of regression models predicting substance use.

|                      | B       | SE (B) | $\beta$ | B CI          |
|----------------------|---------|--------|---------|---------------|
| Intercept            | 9.88**  | 2.11   |         | [5.72, 14.05] |
| Social Support       | -.336** | .098   | -.208   | [-.53, -.14]  |
| Self-esteem          | .059    | .068   | .053    | [-.08, .19]   |
| Community Connection | -.117   | -.046  | -.046   | [-.40, .17]   |
| Culture              | -.428   | -.057  | -.057   | [-1.24, .39]  |

\*Significant at  $p < .05$ .\*\*Significant at  $p < .01$ .

### Drinking attitudes

Youth were asked, "How much are people at risk for harming themselves if they drink 5 or more alcoholic beverages once or twice a week?" Response options were 1 (no risk) to 4 (great risk) and 5 (don't know).

### Family communications

Youth were asked, "In the past 12 months, have you talked with at least one of your family members about the dangers of tobacco, alcohol, or drug use?" Response options were Yes or No.

### Self-esteem

The Rosenberg Self-Esteem Scale (Rosenberg, 1965) was used to assess self-esteem. Participants were asked their level of agreement with seven statements based on questions Rosenberg developed that were deemed effective and appropriate by the study team (e.g., I take a positive attitude toward myself). Response options were based on a 5-point scale of 1 (disagree) to 5 (agree). Responses were combined to create an additional variable for self-esteem (Cronbach's  $\alpha = .829$ ).

### Data analysis

Correlations were estimated to assess the bivariate association among study variables. After the preliminary analyses (Table 2), the research question was explored using a series of multivariable regression

models predicting the dependent variables of interest, all substance use and past 30-day marijuana use. SPSS were used to explore social support and community connections with low and high cut-point combined scale scores (high being above sample mean) for substance use and marijuana use.

There was some modest evidence of convergent validity for self-esteem scores with social support ( $r = .503$ ,  $p < .01$ ) and binge drinking ( $r = -.103$ ,  $p < .05$ ) in the expected directions of effects, and discriminant validity with age ( $r = -.038$ ,  $p \geq .05$ ) and urbanicity ( $r = .020$ ,  $p \geq .05$ ). Community connections and self-esteem were also associated with marijuana use frequency ( $r = -.135$  and  $r = -.195$ , respectively,  $p < .01$ ) in these bivariate analyses (Table 3).

A multiple regression was conducted to see if social support, culture, community connections, and self-esteem predicted misuse among American Indian youth. Using the enter method it was found that social support, culture, community connections and culture explained a significant amount of the variance in drug use ( $F(4,374) = 5.11$ ,  $p < .05$ ,  $R^2 = .052$ ,  $R^2_{Adjusted} = .042$ ). Regression results show that culture, community connections, and self-esteem did not significantly predict drug use, however social support was a significant predictor of drug use ( $\beta = -.34$  ( $t(-3.42) = -.21$ ,  $p < .05$ ). Lower levels of social support were related to higher misuse scores. Figure 1 presents the mean misuse scores and by high (above sample mean) and low social support.

A multiple regression was conducted to see if social support, culture, community connections, and self-esteem predicted marijuana use among American Indian youth. Using the enter method it was found that social support, culture, community connections and culture explained a significant amount of the variance in drug use ( $F(4,389) = 6.13$ ,  $p < .05$ ,  $R^2 = .059$ ,  $R^2_{Adjusted} = .050$ ). Regression results show that culture and self-esteem did not significantly predict marijuana use, however social support ( $\beta = -.210$  ( $t(-3.56) =$

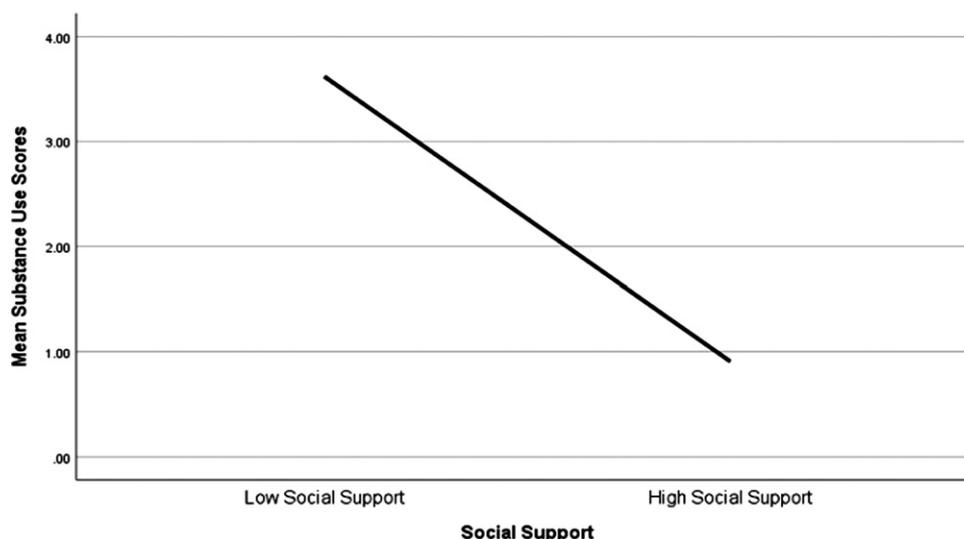


Figure 1. Substance Use and Social Support.

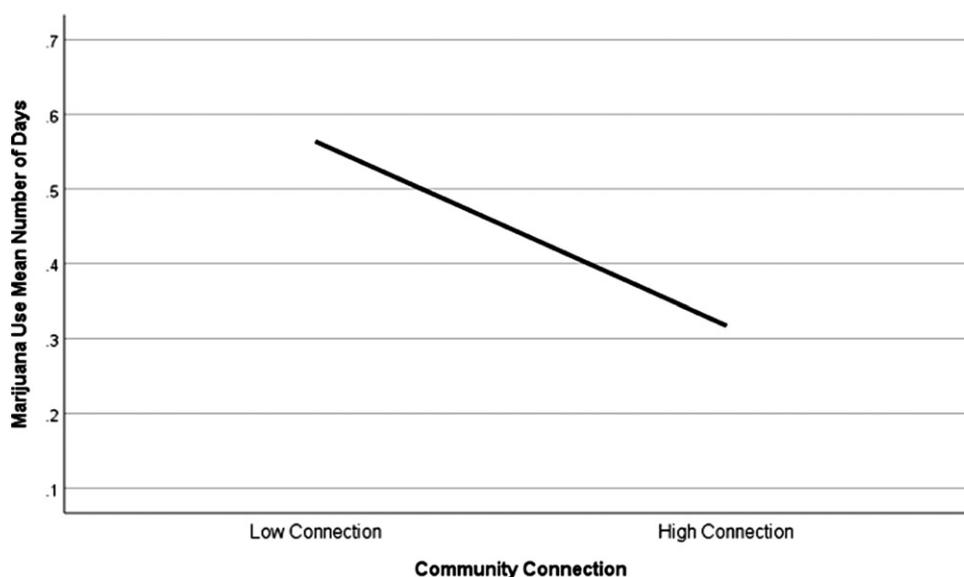


Figure 2. Marijuana Use and Community Connection.

Table 4. Summary of regression models predicting marijuana use.

|                      | <i>B</i> | SE ( <i>B</i> ) | $\beta$ | B CI         |
|----------------------|----------|-----------------|---------|--------------|
| Intercept            | 1.78**   | .321            |         | [1.15, 2.42] |
| Social Support       | -.052**  | .015            | -.210   | [-.08, -.02] |
| Self-esteem          | .005     | .010            | .029    | [-.01, .03]  |
| Community Connection | -.053**  | -.210           | .022    | [-.08, -.02] |
| Culture              | .079     | .062            | .069    | [-.04, .20]  |

\*Significant at  $p < .05$ .

\*\*Significant at  $p < .01$ .

-.015,  $p < .05$ ) and community connections ( $\beta = -.053$  ( $t(-2.41) = .022$ ,  $p < .05$ ) were significant predictors of marijuana use. Figure 2 shows that marijuana use decrease when youth report higher connection to their community (where higher is above sample mean) (Table 4).

## Discussion

This study explored the relationship among social support, self-esteem, community connections, culture, and misuse among American Indian youth in the Great Plains Region of the United States. Results reveal that social support and community connections are protective against misuse in American Indian youth.

### *Social support and community connections*

The present study defined community connections using a scale developed by the community-based prevention initiative. The 3-item scale included respect for language, respect for elders and traditional values, and disapproval of misuse. Community connections

as defined by this study are important because they set social norms and uphold community and cultural values. Environmental influences including community, family, and peers are important factors to consider in relation to misuse in American Indian youth (Hawkins et al., 2004). Previous research has found that factors such as community attachments, including spirituality, social trust, and social responsibility (secondary socialization sources) are negatively correlated with alcohol and drug use during adolescence (Wray-Lake et al., 2012). Studies have also found that American Indian youth who strongly identify with their communities and culture are less likely to use drugs (Zickler, 1999). Yet, other research has found that participation in cultural events is associated with marijuana and cigarette use (Petoskey, Stelle, & De Jong, 1998). Future research may consider differences in substance misuse and abuse by tribal community and location.

### **Marijuana use**

The present study found that community connections were negatively associated with marijuana use in American Indian youth. This was demonstrated in the regression model where American Indian youth who reported higher community connection scores reported less marijuana use. This is consistent with previous literature that has demonstrated the protective effects of community connections on misuse (Zickler, 1999). The present study also found that marijuana use was more prevalent than binge drinking or any other illegal drug (CBHSQ, 2016; Freedenthal & Stiffman, 2004). Previous research has found that American Indian youth prefer marijuana, followed by alcohol, stimulants, and cocaine (Novins, Fickenscher, & Manson, 2006). Stockdale et al. report that marijuana use among American Indian youth is "...a response to aversive social conditions arising from fundamental social causes, social stressors, and low levels of social support" (2007, p. 1867). In American Indian communities these conditions are more severe than non-American Indian communities and include high rates of poverty and unemployment, neighborhood social disorder, violence, lack of stability in the home, and disorientation of family relationships (Hawkins et al., 2004). Study results demonstrate that when American Indian youth have higher community connections they report less marijuana use (Figure 2).

### **Relationships among variables**

Bivariate correlations indicated that illegal drug use, binge drinking, and all misuse increases as youth age.

This is consistent with previous literature (Nelson, Ryzin, & Dishion, 2015). Results also demonstrate that community connections decrease as youth get older and reasons for this are not clear. Higher community connection scores were associated with higher social support and self-esteem scores. All misuse decreased when community connections and social support increased. These findings support the PS theory and are consistent with previous research that has found American Indian youth with higher levels of social support report less drug and alcohol use (Freedenthal & Stiffman, 2004). Although previous research and PS theory would suggest that peer use and peer views about drug use are associated with drug use, this study did not find that peer or family views about drug use were significantly associated with any of the variables of interest or drug use. Additional research is needed to understand the relationship between peer views and misuse.

### **Limitations**

This study adds new knowledge to the literature about misuse in American Indian youth, but it is not without limitations and the findings must be considered within these limitations. First, this study utilized a convenience sampling method, limiting the generalizability of the findings and making the findings vulnerable to bias. Second, the team used single-item survey measures opposed to complete measures that have been established in the field. The use of one measure to explore a construct was used because of funding agency requirements and community preferences for a "brief survey." Third, the sample was made up of American Indian youth from six American Indian communities that have been participating in the prevention initiative since 2016. Findings may not represent all American Indian reservation and urban youth. American Indian youth and communities are not a monolithic group and differ in their use and misuse of substances. Fourth, misuse prevalence may be lower in this sample because of current prevention efforts. Finally, the small sample size may also limit the generalizability of results.

### **Conclusion**

In summary, social support and community connections were negatively correlated with misuse in American Indian youth participating in the prevention initiative. These findings have important implications for reducing misuse in American Indian youth. First,

the results of this study show that as social support increases, misuse decreases. The implication of this finding is that prevention initiatives may focus on strengthening social support available to American Indian youth through culturally based prevention programs that include families, trust-worthy adults, and role models. Additional research is needed to explore the unique aspects of social support derived from American Indian kinship systems and traditions. Second, exploring the relationship among social support, community connections, and marijuana use is necessary. The unique combination of traditional values, language, and community disapproval of misuse and social support are important buffers that can contribute to a reduced rate of misuse. This finding highlights the importance of properly engaging tribal community members, suggesting that prevention initiatives consider how and when to engage the community in prevention initiatives, keeping in mind the critical developmental time points.

The research question that this study answered was, "What is the relationship among social support, community connections, self-esteem, and culture on misuse in American Indian youth?" This study found that social support is the strongest predictor of misuse in American Indian youth and that higher levels of social support were associated with lower levels of misuse. The implication of this finding is that tribally led prevention initiatives can fill an important socio-behavioral prevention gap by facilitating social support opportunities for American Indian youth who may not have adequate support from immediate family or friends. Finally, these findings are particularly important for American Indian youth who are at high risk for misuse. This study adds to the literature by documenting the relationship among social support and community connections and misuse among American Indian youth living in the Great Plains Region of the United States. Future work must focus on the resiliency of American Indian youth and community connections that facilitate social support to reduce misuse in American Indian youth.

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## Declaration of interest

The authors declare that they have no conflict of interest. The authors alone are responsible for the content and writing of the article.

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