Published in final edited form as:

Subst Use Misuse. 2020 ; 55(6): 886–895. doi:10.1080/10826084.2019.1710206.

Identifying Competing Life Reinforcers for Substance Use in First Nation Adolescents

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Abstract

Indigenous youth are at increased risk of initiating substance use at early ages and suffer greater negative consequences related to substance use as compared to non-Indigenous youth. The present study aimed to investigate risk and protective factors associated with substance use in one group of First Nation adolescents. Using a modified grounded theory approach, the present study conducted qualitative focus groups and individual interviews assessing categories of risk and protective factors based upon Behavioral Theories of Choice. Behavioral Theories of Choice suggests that substance use is contingent on the availability of substances and the availability of alternatives to substance use. Fifteen reserve-dwelling (75% female, *M*age = 15.2 years) First Nation adolescents identified peer influences, parental/family influences, and community influences and issues as risk and protective factors associated with substance use. Results highlight possible targets of culturally appropriate prevention strategies for Indigenous populations.

Keywords

Indigenous; adolescent; substance use; risk factors; protective factors

Indigenous youth living in North America, which includes American Indians (AI) in the United States and First Nations (FN) in Canada, are at significant risk for substance use disorders (Whitbeck, Yu, Johnson, Hoyt, & Walls, 2008). Although we know a great deal about the differences in drinking behaviors across different groups (Armenta, Sittner, & Whitbeck, 2016) and greater efforts have been made to understand risk and protective factors overall (Arthur, Hawkins, Pollard, Catalano, & Baglioni Jr, 2002; Handren, Donaldson, & Crano, 2016; Hawkins, Catalano, & Miller, 1992), we still have an incomplete picture of the risk and protective factors for substance use in these communities (Beals et al., 2005; Whitbeck, Hoyt, Johnson, & Chen, 2006).

One large epidemiological study of substance use among AI youth living on or near reservations found that AI youth have an increased likelihood of having been drunk, using

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Disclosure statement: The authors report no conflicts of interest.

marijuana, or inhalants compared to their and non-AI peers (Stanley & Swaim, 2015). Similarly, other studies *indicate* that AI youth begin to use substances at very young ages (Whitesell et al., 2014) and may progress more rapidly to regular use than non-Indigenous youth (Bachman et al., 1991). While variability is noted in the literature with respect to substance use rates, research agrees that AI youth suffer disproportionate negative effects associated with substance use (Indian Health Service, 2015; Szlemko et al., 2006). Further, early substance use is associated with higher risk of developing substance use disorders, which are also associated with other mental and physical health problems (Whitesell et al., 2012). For example, similar to other non-Indigenous youth, early alcohol intoxication by Indigenous youth by the age of 14 is related to a number of negative outcomes including higher rates of subsequent use and greater likelihood of a later substance use disorder (Henry et al., 2011; Novins & Baron, 2004; Spillane, Greenfield, Venner, & Kahler, 2015). AI adolescents also report higher rates of driving while intoxicated (Beauvais, 1992; Sarche & Spicer, 2008), health issues (e.g., liver disease or cirrhosis; Sarche & Spicer, 2008; Yu & Stiffman, 2007), and negative social consequences (e.g., relationship problems; Beauvais, 1992; Sarche & Spicer, 2008) due to substance use.

Understanding factors associated with increased substance use in Indigenous populations, especially among youth, is of great importance and public health concern. Several factors have been *identified as* important in Indigenous and non-Indigenous youth, including peer substance use (Oetting & Beauvais, 1986), exposure to stress (Whitesell et al., 2014), parental abuse/neglect and other family factors (Oetting, Beauvais, & Edwards, 1988; Wall, Garcia-Andrade, Wong, Lau, & Ehlers, 2000), and perceived discrimination (Whitbeck, Chen, Hoyt, & Adams, 2004). *Meanwhile*, there is a growing awareness of the important role that extracurricular or other activities play in buffering against engagement in substance use among *non-Indigenous* adolescents (Eccles & Barber, 1999; Seek Moon & Rao, 2011). However, *there remains a dearth of research focusing on potential alternative reinforcers to substance use, such as alternative activities*, with Indigenous adolescents.

According to Behavioral Theories of Choice (BTC; Vuchinich & Tucker, 1988), substance use behaviors are determined by the availability of substances and the availability of alternatives to engaging in substance use (Vuchinich & Tucker, 1983). This theory is critical to understanding substance use in this population, as it has long been described that Indigenous youth live in communities that are devoid of *alternative reinforcers*, and *may* drink or use substances out of boredom (Jervis, Spicer, & Manson, 2003), *presumably for the reinforcement that it might bring*. Despite the intuitive sense that this makes in congruence with BTC, to the best of our knowledge, there has been little systematic or empirical effort to study activities *or alternative reinforcers* of youth living in Indigenous communities. *Meanwhile*, among non-Indigenous samples, reduced substance availability, increased costs of substances, and greater availability of alternative activities have been associated with reduced drug and alcohol use (Correia, Simons, Carey, & Borsari, 1998; Vuchinich & Tucker, 1996). In one theoretical paper, Spillane and Smith (2007) describe how BTC could be adapted in adult Indigenous populations, theorizing that increased disparities in substance use in Indigenous communities could be explained by a lack of availability of alternative substance-free *reinforcers*, which lead to community members being more likely to rely on substance use for reinforcement. Additionally, some positive

reinforcers (e.g. housing, employment, etc.) in these communities may be relatively less contingent on avoiding substance use, so individuals' perception of the costs of use are relatively low (Spillane & Smith, 2007). Indeed, this was found to be true in a study of reserve-dwelling FN adults (Spillane, Smith, & Kahler, 2013). When compared to middle socioeconomic status (SES) Caucasians, the FN group had reduced expectations for access to so-called "Standard Life Reinforcers," or "SLRs," including employment, quality relationships, and sound financial status, and also reported expecting that drinking would not decrease access to SLRs (Spillane et al., 2013).

Though this work has demonstrated the applicability of BTC in adults, the theory has yet to be further adapted to Indigenous adolescents. To be applied to adolescents, the concept of SLRs may need to be modified *to be more developmentally appropriate*. We use the term Competing Life Reinforcers (CLRs), defined as things that are *consistent with values* and inconsistent with substance use among adolescents, and *are also* available on a FN reserve. We believe that BTC can be modified to help explain some of the variability in substance use among Indigenous youth. For adolescents, having substances available has already been found to be one of the strongest correlates of substance initiation and continued use (Broman, 2016; Gillespie, Neale, & Kendler, 2009; Gillmore et al., 1990; Kelli A. Komro, Maldonado-Molina, Tobler, Bonds, & Muller, 2007; Pemberton, Porter, Hawkins, Muhuri, & Gfroerer, 2014). *Regarding the effect of alternative reinforcers, a core component of BTC*, one longitudinal study of non-Indigenous youth *found* prosocial leisure activities (e.g. church activities or volunteering) *to be* protective against substance use (Eccles & Barber, 1999). Other activities, such as participation in sports or athletic teams, have shown mixed findings, with studies indicating both increases and decreases in substance use in relation to participation in sports (Eccles & Barber, 1999; Terry-McElrath, O'Malley, & Johnston, 2011). However, these findings may not necessarily generalize to Indigenous youth living on reserves, who have unique cultural experiences and many experiences of trauma, health, and economic disparities. *Existing* research has been limited to a few studies *examining* activities in relation to substance use. For example, *among Indigenous populations*, higher perceived availability of extracurricular activities, *team sports, and playing music*, and intensity of participation, *have been found to be associated with less substance use* (Osilla, Lonczak, Mail, Larimer, & Marlatt, 2007; Moilanen, Markstrom, & Jones, 2014). Among non-reserve dwelling FN youth, research has shown that participation in weekly recreational activities was associated with lower frequency of alcohol use and heavy drinking, while fewer school strengths and more tribal strengths were related to greater substance use (Rawana & Ames, 2012; Stiffman et al., 2007).

With the above mixed findings in mind, the present study aimed to *examine the application of BTC to FN adolescent substance use by exploring* activities and other culturally and developmentally appropriate *alternative* reinforcers (i.e., CLRs). We performed qualitative focus groups and individual interviews of FN youth to explore *risk factors for substance use*, how potential CLRs, *including family, peers, community, culture, and availability of alternative reinforcers*, appear in their lives, and how the CLRs relate to substance use. *These findings can help to inform future research that will focus on the role of alternative reinforcers to substance use among Indigenous youth.*

Method

Study Design and Ethical Considerations

This is a qualitative study involving semi-structured in-depth focus groups and individual interviews with FN adolescents between the ages of 14–17. In alignment with the tenants of community-based, participatory research (CBPR; Wallerstein & Duran, 2010), the researchers formed an advisory committee to help guide the study. The committee consisted of band and council members with experience in health and/or mental health, and substance use in adolescents, *who assisted with the development of the interview guide for focus groups and identification of strategies to recruit youth in the community within the target age range*. In addition, the study project's assistant is a member and resident of the FN community, and the principal investigator (PI) and first-author is a band member, though she does not live on the reserve. The semi-structured interview guides were reviewed and approved by the chief, council, and the advisory board. *All study procedures were reviewed and approved by the university Institutional Review Board prior to beginning data collection.*

Research Setting

The research was conducted in one rural FN community located in Eastern Canada. The qualitative interviews and focus groups were conducted at the Health Center located on the reserve.

Participants

Purposive sampling procedures were used to recruit participants between October 2012 and May 2013. We recruited FN adolescents by sending letters to *approximately forty* homes with youth between the ages of 14 and 17 *based on addresses obtained from chief and council*, inviting them to participate in focus groups and qualitative interviews. This age range was selected because FN adolescents are likely to be using substances or begin to experience substance related problems during these years. We included adolescents who reported both prior substance use and those who had not engaged in substance use in order to examine the potential risk and protective factors related to substance use within this high-risk community. A total of 15 FN adolescents participated in the focus groups, and 11 of these adolescents participated in the individual interviews.

We conducted a total of two focus groups, which included one boys' focus group consisting of 5 youth, and one girls' focus group consisting of 10 youth. Because youth were under the legal age of consent, parents and/or guardians were sought for informed consent. Parents/guardians were provided with study information, including a description of the study, the procedures, the potential risks, and confidentiality, and given time to ask any questions. When parental/guardian consent was obtained, youth were approached to assess their willingness to be a part of the study. Written assent was received from the youth prior to proceeding with the focus groups and individual interviews. Participants completed a questionnaire reporting demographics, followed by a 60-minute semi-structured focus group. Each participant was paid \$20 for focus group participation. After completion of the focus groups, each participant was invited to participate in a follow-up, one-on-one

interview with the first-author. Eleven participants agreed to participate in the follow-up interview and were paid an additional \$25 for individual interviews.

Procedure

The present study used a modified grounded theory design to develop a semi-structured interview protocol to examine socio-cultural influences on substance use among reserve dwelling FN youth (Corbin & Strauss, 1990; Strauss & Corbin, 1994). We conducted 45–60-minute semi-structured focus group and individual interviews with Indigenous youth over an 8-month period from October 2012 to May 2013. The interview protocol was created based on the BTC in that participants were asked to identify various aspects, activities, and influences in their environment that are both supportive of and inconsistent with substance use. Grounded theory stresses the importance of the development of a theoretical model (Creswell, 2014; Strauss & Corbin, 1994) and to allow themes and categories to derive from the data as content analysis takes place (Charmaz, 1996). A modified grounded theory methodology was used as we aimed to develop culturally appropriate constructs that related to the BTC model. While we utilized predetermined categories (Substance Use, Peer Influences, Family/Parental Issues, Community Influences/Issues, Culture, Future Goals, Stereotypes/Discrimination, Alternative Activities to Substance Use; *Bickel, Johnson, Koffarnus, MacKillop, & Murphy, 2014; Correia, Benson, & Carey, 2005; Correia, Murphy, Irons, & Vasi, 2010; García-Rodríguez, Suárez-Vázquez, Secades-Villa, & Fernández-Hermida, 2010; Spillane & Smith, 2007; Spillane et al., 2013; Zapolski, Pedersen, McCarthy, & Smith, 2014*) based on BTC, we employed *practices consistent with grounded theory, including the use of open coding techniques, memo-making, and simultaneous data collection and analysis* (Charmaz, 1996; Creswell, 2014) to generate specific codes and themes within each predetermined category.

Using a directed, or deductive, approach for collection of data, we used open ended questions with directed follow-up questions based on the predetermined categories (Hsieh & Shannon, 2005). Interviews, both in focus group and individual formats, allowed the PI to guide the questions asked during interviews (*e.g., “I want to start today by thinking about what sorts of problems you and your peers, people in your age group face,” “Tell me about other important adults in your lives? Who are they?” and “How do members of your community view youth who drink alcohol?”*), as is appropriate when the behaviors of interest cannot be directly observed by the research team (Creswell, 2014), such as potential adolescent substance use and various activities adolescents engage in. Focus groups and interviews were audiotaped.

Data Management and Data Analysis

Audio recordings from focus group and individual interviews were transcribed by a professional transcribing company and checked by the first author for accuracy *as suggested by* (Creswell, 2014). The electronic and hard copy of transcripts were retained for analysis. Transcripts of group interviews were then reviewed by the principal investigator for a preliminary identification of *preliminary repeated ideas* that arose using the interview guide to inform *individual* participant interviews *as indicated by Hays, Wood, Dahl, & Kirk-Jenkins, 2016*. Next, *based on guidelines of the consensus process set forth by Hill,*

Thompson, & Williams, 1997, a doctoral student research assistant read all of the transcripts to independently identify broad themes that arose, and coded the data using directed content analysis. *Consistent with guidelines by Charmaz (1996), memo-making procedures were utilized, writing analytic notes to elucidate categories and break categories down into their components, at each stage of coding transcripts.* As suggested by Elo and Kyngäs (2008), we approached analysis using a predetermined theoretical model, BTC, where we analyzed the content through the identification of general *a priori* categories. We then identified main codes and themes derived from the data, as suggested for grounded theory (Charmaz, 1996) and by Auerbach and Silverstein (2003). With this approach, we highlighted/color-coded the *relevant* text that fell within each of the eight categories, followed by open coding within each category to identify *repeating ideas, followed by grouping the repeated ideas into recurring themes and theoretical constructs.* Transcripts were then reviewed and analyzed using *the same processes described above* by a second doctoral student research assistant. Upon completion of the second coder, both research assistants met with the PI to discuss the themes that emerged from the data (Creswell, 2014) *until consensus was reached* (Hill et al., 1997).

Findings

Participants' Thoughts about Substance Use

Focus-group participants were asked about the types of problems they noticed within their community or for peers their age. When asked this question, a member of the girls' group stated:

These are pretty broad questions because there is so much. Stuff like drinking, smoking dope, other drugs, confidence, racism, ignorance. There's just so much. I don't know. You could just elaborate on and on and on, I think.

Similarly, a member of the boys' group simply stated: "Drugs." Using a directed approach, the focus groups were asked to elaborate on these responses. Both groups identified alcohol and marijuana use as specific substances which are heavily used by adolescents in their community, with the boys' group additionally identifying cigarette use as a major concern. During both the focus-group sessions and the individual follow-up sessions, several negative consequences of substance use were identified. Specifically, adolescents identified substance use as often leading to school dropout, negative consequences within their families, and substantial health risks. It was further noted that one potential reason for such severe consequences and high rates of use was due to the availability of substances both on, and off, the reserve. Thus, substance availability was identified as another major problem faced by these adolescents.

Risk Factors

Participants identified three major risk factors for youth substance use: 1) peer influences, 2) family/parent influences, and 3) community influences/issues.

Peer Influences.—A common theme influencing adolescent initiation of substance use that was identified during the focus-group interviews and individual interviews was peer and

social influences and the desire to “fit in” with peers. Specifically, these adolescents indicated that substance use, particularly marijuana, alcohol, and cigarette use, was very common among their peers, both on and off the reserve. One boy stated:

If you go to a party and you’re the only one that’s not there not smoking weed or not smoking or drinking, then you kinda feel outta place and you kinda feel pressurized into doing it. If you feel pressurized, then you’re more susceptible to doing it and then that leads to [*background noise*] that happening, too.

Furthermore, one 16-year-old female reported that substance use is common both on the reserve with her Indigenous friends and off the reserve with her non-Indigenous friends from school:

My friends, they smoke drugs, like they smoke dope and they do what they do. They can just relate to the same stuff. My friends at school they drink and stuff, but they’re not people I hang out with every day...I have my high school people and then I have my at home people. My high school people are different than my home people, but they smoke and stuff too.

A male participant echoed the idea that adolescents are exposed to substances in their social environments stating that students often smoke on school grounds as the “no-smoking” policy is not typically enforced. Additionally, members of the boys’ focus group described kids first beginning to engage in substance use, such as smoking cigarettes, at very young ages while at school. They stated: “A lotta kids do it in elementary school. They start in the bathroom,” and “About more than half the kids that are coming in grade nine from middle school smoke cigarettes and they start smoking dope, start drinking...”

What is more, these substances were often easily accessible through their peer networks. When asked who provides substances, adolescents explained: “Who’s ever old enough, you just ask them to go...,” and “...go tell someone to go pick it up, yeah. You can just, yeah, basically text or something like that, whatever,” as well as, “Because it’s easy access, people are getting older. They have older friends so they can get it that way.” One 16-year-old girl stated: “Yeah, everybody knows. Even little kids know where to get. It’s crazy easy. Kids these days know way too much for their age.”

Family/Parent Influences.—Family and parental influences also were raised as common risk factors for adolescent substance use. It was reported by the majority of participants that youth are often exposed to alcohol and cigarette use, and may even begin using, at very young ages when parents or important family members engage in such behaviors. Moreover, five individual interview participants stated that parents often engage in substance use with their children, supply their children with substances, or that children begin experimenting with substance use after parents or important family members model the behavior. One 16-year-old girl recounted:

Exactly, as I’ve grown up with my parents, like my dad, was an alcoholic always. He’s always drank. When I was growing up I’d go to parties with him. I’ve seen everybody. I don’t know I just grew up way too quick, I can just say that. I’ve seen people do this so I thought it was okay to do. When I did do it, it backfired on me.

Another adolescent explained:

You have parents around here getting drunk, walking down the street with a joint in their hands that smoke dope. People around here selling coke and you just know that. If you grow up with a parent or a parental figure doing that, you're going to think that's okay, and that's not okay.

Additionally, respondents reported that they felt as if parents often “don’t care” if youth are using substances, and feel there is a lack of discipline from parents and family members, as well as a lack of monitoring of children’s behaviors. One girl, aged 15, explained she first began smoking at the age of seven and a half when she “had the house to myself” while her father worked.

Interestingly, many participants, including three individual interviewees, reported viewing parents as hypocrites when they do not condone their children’s substance use. One participant described how it is not meaningful when adults tell youth to stop smoking: “You can’t go telling your kids ‘Stop smoking,’ or ‘Don’t smoke,’ while you’re sitting there puffing away too.” At the same time, several adolescents further reported that they do not look up to adults who engage in alcohol or drug use as role models.

Community Influences/Issues.—Beyond immediate family and peer influences, adolescents further identified their community as a whole as a potential influence for engaging in substance use while on the reserve. The adolescents reported that many individuals engage in substance use because “There is nothing else to do.” At the same time, ten of the 11 individual interviewees endorsed the belief that their community, as whole, does not care if kids are using substances, and that youth do not tend to experience any legal discipline for underage substance use. Moreover, when events are held in the community, engaging in substance use while participating is often the norm. For example, numerous participants reported that smoking cigarettes in public was extremely common, and that when the community engaged in various celebrations, public intoxication was readily occurring. One participant recounted:

I’ve heard it happening on [cultural feast days]. That’s the thing, community events, when we were younger, I thought they were awesome. We had so much, like, rides and stuff. Then now, it’s like, “Oh, [at a specific community gathering—redacted to maintain confidentiality of the community]. Everyone get drunk tonight. Where’s the party?” I never realized what it was about when we were young.

Another 15-year-old girl described community events, such as ballgames, involving “everyone” getting “drunk.” Substances were reported to also be easy to obtain from adults and because the behavior is normalized through interactions with adults in the community. For instance, one 16-year-old girl stated:

I drink and smoke with adults all the time. I mean at first it was weird because I just started and stuff, but now it’s just normal. It’s just like one of the friends, just gonna go get drunk or high. It’s just normal. It’s nothing bad, everybody does it.

Competing Life Reinforcers

Participants elaborated on six protective factors against substance use, based on BTC: 1) future goals, 2) peer influences, 3) family/parent influences, 4) community influences/issues, 5) alternative activities, and 6) culture.

Future Goals.—During the interviews, the adolescents were asked about their future goals. Many responses focused on goals that would help the participants stay away from substance use, or to not have substance use problems. These youth reported that having supportive adults in their life would help with achieving future goals, with over half of the individual interviewees suggesting ways in which parents and family could provide support for children's futures. More specifically, two individual participants indicated that having supportive adults in their life that specifically checked in with them regarding school attendance and their hopes for the future would be beneficial in helping them obtain their goals, as well as to stay away from substances. This idea of having support in obtaining their goals was largely tied into adolescents' aims and plans to finish their high school education, and for many, to go on to post-secondary education. Furthermore, four individual participants identified having an education as being important in general, and other youth indicated that education was vital in helping them obtain a lucrative job or career. For example, when asked what her goals were for the next five years, a 16-year-old reported:

I see myself, I don't know I don't want to be here. I hope I'm not gonna be here in five years. I want to be out getting a job, maybe have my own family in five years. I don't know, I want better for myself. I want to graduate. I want to get a good paying job that I love.

When she was further asked how using alcohol fit into this plan, she stated:

I hope I'm not into those at all. I think about trying to give them up for Christmas or whatever, but I hope not. Knock on wood that I'm not doing drugs or alcohol in five years. Other than that I don't know.

Having a job was identified as a major future goal amongst this group, and being involved with substance use was identified as a potential barrier to achieving that goal. Thus, having goals about the future, specifically regarding education and jobs, likely may serve as a CLR given that adolescents are provided with appropriate support systems.

Peer Influences.—While many participants remarked that peer and social influences were often contributing factors to adolescents' use of substances, one participant described her boyfriend encouraging her to quit smoking, stating "I'm trying to quit. My boyfriend's making me. He doesn't do it and he hates it. He hates it with a passion." This description reveals that for some youth, having relationships with peers who do not use substances may serve as an important CLR against starting, or continuing to use, substances.

Family/Parent Influences.—Many participants described that for some adolescents, there was a feeling of lack of support or guidance from parents or family, often resulting in youth substance use not being monitored or discouraged. However, six participants noted ways in which their parents and families could be supportive of them, which in turn may be

protective against substance use. Specifically, one participant described his mom pushing him to succeed in school:

My mom, she was kind of—she’s been really hard on me in terms of school because she knew it was so important and stuff. She kind of—when I was going out—was always like education first and everything else behind that. I’ve been kind of living off of that for my life. Other than that, even other people in my family are like, you got to have your education. You got to go somewhere. You got to have a successful life. Basically, that’s what I did...

Additionally, extended family members were reported to be helpful when individuals felt they did not have support from their immediate family members. In particular, grandparents, aunts, and uncles, were indicated as especially helpful people to look up to.

Although, a common theme about substance use was that adolescents often begin to miss or drop-out of school when using substances, particularly marijuana, these adolescents identified ways in which they would like to receive support. It was suggested that having parents or parental figures that would help them get out of bed to go to school or providing supportive messages while growing up may lead to a decrease in substance use related problems. For example, when asked what could work for prevention, one participant stated:

I just see a lot of parents giving up on their kids. You can’t give up on your kids... Or just letting them—just let them start sleeping in, start sleeping in, start missing school more and more, then the next thing you know—...Every kid on there needs someone that will make sure he gets up for school every day, and make sure they’re up, ready. I don’t know, going to school every day.

Community Influences/Issues.—Throughout the qualitative interviews, it became apparent that respondents had difficulty identifying positive community influences, including role models, which were useful in protecting against engagement in substance use. However, when the interviewer used guided questioning, participants were able to identify characteristics that they would like to see in an adult role model. Interestingly, but perhaps not surprisingly, a recurring sentiment was that a role model is an adult who does not use substances and has “bettered” themselves. More specifically, a role model is someone who is not a “hypocrite,” meaning that not only are they encouraging youth to abstain from substance use, but also are sober themselves, specifically regarding alcohol, marijuana, and other drugs. One 16-year-old female described a role model as:

...they didn’t do drugs or alcohol or if they did, like if they recovered about it or doing better for themselves. Because I don’t know I see that being a role model for me... Yeah, and to stay clean that whole time and did better for themselves...I don’t know, it just shows that they can overcome something that was—having a drug addiction is hard. I don’t know I just think it’s good that they did because it shows how strong they are I guess.

These adolescents noted that having positive, caring, role models that provided structure and discipline in their lives would be beneficial and protective against substance use and help with achieving their goals. Potential role models included friends’ parents, extended family

members, parents, teachers, and elders in the community. While many agreed that role models should be sober, that having used in the past but currently being “clean,” demonstrated resilience and could be helpful to youth.

At the same time, participants were also able to identify potential activities they would like to see available within their community—activities they believed would help protect against problems with substance use. A recurring theme that arose was the desire for increased community celebrations or activities that are “sober.” Interestingly, based on these interviews, there are mixed messages and ideas as to whether tobacco use is appropriate for a role model as well as within the community.

Alternative Activities as Reinforcers.—Beyond identifying characteristics of people who can serve as CLRs, the participants were asked to identify various activities that are already in place serving as CLRs to substance use. One of the most cited activities, endorsed by over half of the individual interview participants, was organized sports, particularly hockey, soccer, rugby, and baseball. However, beyond organized sports, many adolescents had difficulty identifying protective activities currently available. Moreover, this sample expressed that they wished there were a greater number and variety of alternative activities available within their community. First, it was suggested that having various organized sports available during the “off-season” would be useful as the climate in this location gets cold and people tend to stay inside, which may lead to substance use. Next, these youth reported, both during the group and individual interviews that organized, age-specific, youth groups and events would provide an alternative to engaging in substance use. Some examples included outdoor/camping trips and an organized recreation program and/or recreation center. During the girls’ group, one individual mentioned past recreation trips to amusement parks, and another girl agreed that trips could be protective, stating, “Trips be bomb. That’s an amazing idea. I can see how kids would be more interactive and do stuff and stop drugs and stuff.” Other adolescents stated that they would enjoy engaging in volunteer opportunities within the community, while some noted that other groups, such as a videogame league, could be a good option.

Specifically regarding youth groups, these adolescents indicated that starting organized programs and consistent youth groups at a young age would be a welcomed idea. During her individual interview, a 17-year-old expressed:

I think that the youth group, I think if we made that better—like if people stayed committed to that, I think it would keep them from drinking. It’s almost like they won’t enjoy what they did and stuff. If they make plans, like trips and all, I think it’d be really fun just to get away and it’d keep other people from doing drugs and alcohol.

The participants further suggested that adolescents may be more likely to continue to engage in such groups if they were age-specific and provided age-appropriate activities.

Two individual interviewees reported that there are activities available through the schools off-reserve, yet it appears that most FN youth within this community do not participate. This further suggests that community based alternative activities to substance use and appropriate

influences may be of greater importance to this population than having such resources available off the reserve.

Culture.—While describing desired alternative activities, the theme of culturally based activities arose. Both the boys' and girls' focus groups, as well as three individual interviewees, reported feeling a lack of culturally based activities and programming within their community. Participants described having the desire to learn more about their culture, as well as to learn cultural practices such as Indigenous arts including beading, basket weaving, learning their native language, engaging in sweats, dancing and drumming, and other traditions. Regarding cultural traditions, one girl in the focus group mentioned, "I don't think that it's taught. It's not being passed down from parents, but they don't really know either." Moreover, respondents endorsed wanting to learn about these activities and engage in their practice alongside of parents and adults from within the community, including elders. One girl in the group further emphasized this point by indicating she would like to see parents and other adults committing to cultural practices. These qualitative responses reveal that increased cultural traditions and practice within the community would likely act as appropriate CLRs.

Of note, while we had hypothesized that stereotyping and discrimination would be a recurrent theme linked to substance use, we found this to not be the case. While some participants mentioned stereotypes and discrimination as occurring from non-Indigenous peers, these factors were not frequently cited as reasons why these youth decide to engage or not engage in substance use.

Discussion

The purpose of the current study was to begin the process of understanding risk and protective factors for substance use and problems for Indigenous youth in order to design prevention programs that are tailored to their unique cultural needs *within the framework of BTC*. Our results paint a complex picture with multiple factors that likely interact, as we noted sub-themes being brought up in multiple sections.

First and foremost, youth identified substance use as a problem for both adults and youth in their community. Within that environment, youth discussed peer, family, and community level factors that they believed places them at risk for substance use. Regarding peer influences, consistent with previous research, there was an overwhelming sense that youth engage in substance use to fit in with their peers (Allen, Chango, Szewedo, Schad, & Marston, 2012; Santor, Messervey, & Kusumakar, 2000). Our results further indicate that because youth are not only using or being exposed to substances in their community, but in school as well, school-based programs may be appropriate. Perhaps feeling connected to the school community may offer an incentive to participate in school activities and thus could serve as a CLR *to engaging in substance use, acting as an alternative reinforcer in alignment with BTC*. Such school-based programs should be considered in addition to those received within adolescents' immediate community. Other possible interventions, including multilevel interventions may need to be considered that focus on both individual and community factors (Moore et al., 2018).

Consistent with research suggesting that family management practices such as parental monitoring and limit setting are highly correlated with the extent of adolescent substance use (Chassin, Pillow, Curran, Molina, & Barrera, 1993), youth in our sample felt that parents were not setting boundaries around substance use. This led to youth receiving inconsistent messages with regards to acceptability of *using substances*. When discussing family-based protective factors, one individual stated that having parents who push you in school is a protective factor. Strengthening *prosocial family dynamics* and adapting/developing family-based prevention programs that maybe include a broad definition of the family structure may be one strategy to implement.

Perhaps of more importance is the finding that family members were often the source of substances and often modeled excessive use. This indicates that substances are readily available from multiple sources at times, and consistent with BTC (Vuchinich & Tucker, 1983), would suggest that availability is one key determinant in the decision to use substances. *Some* programs, such as those that focus on alcohol sales, have been effective in targeting alcohol availability through liquor stores (Komro et al., 2017; Moore et al., 2012), but may not be as effective for these youth and others who report primarily obtaining substances from others in their community. Therefore, our results suggest that prevention programs targeting multiple sources from which adolescents can obtain substances is warranted. *Our findings also suggest subtle nuances that have not been captured in other studies of Indigenous substance use. Youth reported that having role models available to them would be an important CLR. When probed into their definition of a role model, it became clear that, while it would be all right if individuals had used substances in the past, these are individuals whom do not currently use substances at all, and are sober. Related to this point, they expressed that parents are seen as permissive in their substance use norms (i.e., injunctive norms) because they did not want to be seen as hypocritical.* These are important distinctions that highlight the necessity for those who work with youth (e.g., community advocates, health and wellness employees, teachers, etc.), to have awareness of how their own behavior may be perceived. Additionally, increasing opportunities to engage with positive adults identified by youth as role models (e.g., teachers, tribal elders), is likely to *serve as a CLR as it would provide substance-free alternatives within their community.*

The lack of alternative activities within the community was a prevalent community level factor that youth reported as contributing to the risk of substance use, consistent with principles of BTC (Vuchinich & Tucker, 1983). The lack of activities, or experienced boredom, has also been examined in other studies as a reason for the increased substance use rates observed among Indigenous youth (Jervis, Spicer, & Manson, 2003). Therefore, a critical substance use prevention strategy could be targeting the lack of *CLRs*, such as increasing *the* availability of structured, substance-free, extracurricular or community activities, for youth living in Indigenous communities.

Participants were further asked about potential protective factors against substance use. *However*, individuals had a difficult time coming up with factors in their community that they saw as being protective. This is likely one example of how historical trauma and forced colonization may be related to the perpetuation of substance use in *Indigenous* communities (Nutton & Fast, 2015; Walters, Simoni, & Evans-Campbell, 2002). The restoration of culture

could provide Indigenous communities with healing by offering cultural activities and strengthening an attachment among youth and the community. Indeed, research *suggests* that adolescents who are high in community attachment show negative associations with cigarettes, alcohol, marijuana, and other drugs (Wray-Lake et al., 2012). Strengthening community attachment in these youth, perhaps through culturally-based practices and activities, could be a potential prevention strategy given the protective effect it has shown for other groups. *For instance, FN communities could be encouraged to increase youth access to, or interest in, valued community activities which could include traditional crafts, powwows, talking circles, sweats, and learning about their culture. Interestingly, there was some overlap in the factors that were ultimately identified: future aspirations, peers, family, community-level factors, alternative activities, and cultural factors. Youth expressed some future aspirations, but these were limited. Some expressed wanting to finish high school, fewer expressed college aspirations, many wanted to be employed with little specifics as to what type of job, or what they would like to be when they grow up. This may reflect the limited opportunities that exist within Indigenous communities (The White House Office of the Press Secretary, 2013), and the sentiment that leaving the community to attend college or find a job is unacceptable. Previous research found college aspirations to be the most influential protective factor against tobacco use in one Indigenous sample of American Indian and Alaskan Natives (Osilla et al., 2007), and our findings suggest that these Indigenous adolescents may also view academic aspirations as a protective factor against substance use.*

Based on previous work in Indigenous populations, we anticipated that perceived discrimination would be highlighted as a dominant theme in relation to substance use (Whitbeck, Hoyt, McMorris, Chen, & Stubben, 2001). Therefore, it was somewhat surprising that we did not find this to be the case. However, this finding is consistent with other research that has not found perceived discrimination to be significantly related to substance use (Dickerson et al., 2019). It may be that perceived discrimination is less likely to be related to substance use for those living in an *Indigenous* community than for those living outside of reserve/reservation communities, simply because their primary influential social contact may be with others from *their* community.

While the present study provides important knowledge regarding risk and protective factors for substance use and CLRs against substance use for FN youth, they should be considered within the context of the studies limitations. First, because we only sampled from one FN community, findings from the present study cannot be assumed to be generalizable to other communities or populations. Second, the present study consisted of a small sample size, again limiting generalizability. These occurrences are often the case with qualitative research investigations, therefore future studies should aim to replicate findings in other communities. Third, the hypothesized theories derived from this qualitative study need to be complemented by quantitative research to examine the ways in which these themes relate to substance use behavior.

In line with the BTC, our sample of youth identified a number of important factors that they would perceive as reinforcing, and that would influence their likelihood of using substances. The results of the present study highlight several important areas of substance use prevention

to target among Indigenous groups. These risk and protective factors are particularly important targets for designing prevention strategies given that they were identified by Indigenous youth as contributing factors for and against substance use within *their* environment. It is likely going to take an effort at multiple levels in numerous settings to decrease substance use in this population.

Acknowledgments

Funding: This work was supported by the National Institute on Drug Abuse (NIDA) under grant number K08DA029094.

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