First Peoples Child & Family Review
A Journal on Innovation and Best Practices in Aboriginal Child Welfare Administration, Research, Policy & Practice

Volume 3, Number 1, 2007, Special Issue, pp. 17-26

An Alcohol Abuse Early Intervention Approach with Mi'kmaq Adolescents

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Abstract

This paper describes the development of and pilot results for an alcohol abuse early intervention program targeting at-risk Mi'kmaq youth conducted in partnership with the communities in which these youth live and the schools which they attend. This intervention was based on a previously-established, successful psychoeducational and cognitive-behavioral approach for at-risk adolescent drinkers from the majority culture that focuses on different personality pathways to alcohol abuse in youth (Conrod, Stewart, Comeau, & MacLean, 2006). Through partnership and collaboration with two Mi'kmaq communities, the original intervention was adapted to be culturally appropriate for Mi'kmaq youth. The culturally-adapted intervention included traditional Mi'kmaq knowledge and teachings in order to make the program as meaningful and relevant as possible in the partner communities (Comeau et al., 2005). The pilot results were encouraging. Compared to pre-intervention, students who participated in the intervention drank less, engaged in less binge-drinking episodes (i.e., 5 drinks or more/occasion), had fewer alcohol-related problems, and were more likely to abstain from alcohol use. Moreover, students who participated in the intervention also reduced their marijuana use at four-month post-intervention, even though the intervention was specifically designed to target alcohol misuse. No such significant changes were observed in a non-random control group of eligible students who did not participate in the intervention. Future research should determine if this intervention is effective for at-risk youth in other First Nations communities across Canada, and whether the promising, but preliminary results with marijuana mean that the benefits of the intervention might extend to adolescents' use of substances other than alcohol.

Introduction

The goal of this research partnership was to develop an alcohol intervention for Mi'kmaq adolescents that integrated traditional Mi'kmaq symbols to convey knowledge gained through experience with cognitive behavioral strategies. That is, the intention was to create a truly culturally relevant alcohol intervention for use in schools in Mi'kmaq communities in Nova Scotia. This was achieved by developing a respectful dialogue, and drawing key learnings from the research team – community members (adolescents, Elders, school personnel, RCMP, etc.) partnership. A key foundation was the emphasis on the journey inward toward personal gifts of the Spirit and the power of self-healing. This article describes the development of and pilot outcome data for the "Nemi'simk, Seeing Oneself" intervention program (see Comeau, Stewart, Mushquash, et al., 2005).

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In Canada, there are high levels of alcohol abuse and its associated suffering and tragedy among Aboriginal peoples, especially youth (Kirmayer, Brass, & Tait, 2001). The abuse of alcohol is consistently reported as a major problem in Aboriginal communities (Chandler, Lalonde, Sokol, & Hallett 2003; Health

Canada, 2003). As such, there is a need for culturally-appropriate interventions that target reasons why First Nation youth drink.

This project began as an invitation to Dr. Comeau by the principal of a community high school and the local detachment commander of the RCMP. They wanted to discuss ways of dealing with issues of alcohol and other substance abuse and related issues among the youth in their community. From these early discussions came a partnership with a resolve of working together to create a program that could be meaningful to the lives of the youth in the community. From there, a novel methodology was implemented to first assess quantitatively the relationships between personality and motives for drinking, then to speak to the high-risk youth through qualitative interviews to gain insight into to the teens' understanding of why they drink and, finally, to tailor interventions by basing stories and images in the intervention manuals on these combined multi-method findings (see Comeau et al. 2005; Comeau, Stewart, Loba, & Theakston, 2004, for additional information on this methodology).

The specific pathways to alcohol misuse related to intervention programming in this project have been described in detail elsewhere (e.g., Conrod, Pihl, Stewart, & Dongier, 2000a). Briefly, it has been proposed that individual differences in personality are linked to sensitivity to various reinforcing properties of alcohol (Cooper, Frone, Russell, & Mudar, 1995; Conrod et al., 2000a). For example, one effect of alcohol use is tension reduction. For adolescents who are sensitive to anxiety, it is reinforcing to escape from the unpleasant feeling of tension, which strengthens their likelihood of turning to alcohol when feeling tension. Further, these specific personality factors are related differentially to various motives for alcohol use (i.e., enhancement, coping, social, and conformity (Comeau et al., Comeau, 2004; Conrod, Stewart, Pihl, Côté, Fontaine, & Dongier, 2000b; Mushquash, Stewart, Comeau, & McGrath, 2007; Theakston, Stewart, Dawson, Knowlden, & Lehman, 2004; Stewart, & Devine, 2000; Stewart, Loughlin, & Rhyno, 2001). Essentially, individuals have different personality types and not everyone drinks for the same reason(s). Taking these factors into account at the level of the delivery of the intervention should create a better-matched approach for different teens.

The empirical background for the intervention approach used here classifies adolescents based on their specific personality types and motives for alcohol use in order to target specific programming to address these issues. Targeting these specific personality types and drinking motives has been shown to have positive benefits in terms of changing drinking behaviours among adolescents in the majority culture (Conrod et al., 2006; for more on the cognitive-behavioural techniques used in the intervention see Watt, Stewart, Conrod, & Schmidt, in press). There are at least three distinct personality types related to at-risk alcohol use patterns: anxiety sensitivity (i.e., fear of anxiety symptoms, like sweating, panicky feelings, racing heart), sensation seeking (i.e., preference and searching for novel, intense experiences), and hopelessness/negative thinking (i.e., proneness to feelings of worthlessness and sadness).

Anxiety sensitive individuals show sensitivity to the anxiolytic (anxiety-reducing) effects of alcohol (Conrod, Pihl, & Vassileva, 1998; MacDonald, Baker, Stewart, & Skinner, 2000; MacDonald, Stewart, Hutson, Loughlin, & Rhyno, 2001; Stewart & Pihl, 1994) and are at an increased risk for anxiety disorders, including panic (Maller & Reiss, 1992; Schmidt, Lerew, & Jackson, 1997). Anxiety sensitive persons show increased rates of alcohol consumption (Stewart, Peterson, & Pihl, 1995; Stewart, Zvolensky, & Eifert, 2001), drink to cope with negative emotions (Conrod et al., 1998; Stewart, Karp, Pihl, & Peterson, 1997), and drink to reduce or avoid social criticism (Comeau et al., 2001; Stewart et al., 2001; Stewart, Zvolensky, & Eifert, 2002). Sensation seeking individuals show elevated alcohol use and drink to experience euphoric/intoxicating effects (Comeau et al., 2001; Conrod, Peterson, & Pihl, 1997; Ohannessian & Hesselbrock, 1994; Stewart & Devine, 2000). Finally, hopeless/negative thinking individuals may particularly appreciate the pain-reducing properties of alcohol. Alcohol alleviates pain and hurt (Gray, 1987) and depression is predictive of the eventual development of alcohol problems (Hartka et al., 1991; Helzer & Pryzbeck, 1988).

As predicted by previous findings in the area of personality and drinking motives, the youth in these First Nations communities showed similar relationships between specific personality types (i.e., sensation seeking, anxiety sensitivity, and hopelessness/negative thinking) and risky motives for alcohol use (i.e. enhancement, conformity, and coping). Specifically, those who were identified as sensation seekers tended

toward drinking for enhancement reasons (e.g., to feel high), those who were anxiety sensitive tended to drink for conformity reasons (e.g., to fit in), and those who were hopelessness/negative thinking tended to drink to cope with their negative feelings (e.g., to forget worries; Stewart, English, & Comeau, 2005).

This initial quantitative work was followed by a qualitative phase where youth were interviewed and were asked to describe their diverse experiences with alcohol, as well as the contexts in which they tended to drink. The complexities of their social and personal relationships with others and alcohol, as well as their capacity for healthy ways of dealing with their struggles were key sharing points. Analyses focussed on the identification of themes and sample stories (directly from the voices of the youth) that were used in the intervention manuals (Comeau, Stewart, & Conrod, 2004 a, b, c). This ensured that the situations described were as meaningful as possible to the lives of the youth involved. As well, artwork based on story themes from the qualitative interviews, were included in the intervention manuals. The artwork was contributed by several First Nations youth artists who were living in the participating communities. Working with Elders and other spiritual teachers from the community, the intervention manuals were adapted to include teachings from the Mi'kmaq culture. For example, artists were asked to try and integrate colours into their artwork to represent the Mi'kmaq concepts Mese'k (wholeness), Sa'se'wika'sik (change), and Tetpaqjoqtesk (balance), to convey their spiritual response to the youths' stories and their themes.

An important addition to the cognitive behavioural strategies used within the intervention was the inclusion of traditional sacred Medicine Wheel teachings. The focus of the intervention was on a greater wholeness; the Medicine Wheel helped to convey the aspects of personality we were teaching the youth in the psychoeducational portion of the intervention. The commonalities between certain aspects of the cognitive-behavioural model (i.e. relationships between thoughts, feelings, and behaviours) and the Medicine Wheel, prepared the youth for the cognitive-behavioural exercises which were designed to help keep the various aspects of personality in balance (e.g., balance between thoughts and feelings) – an important teaching shared from the Medicine Wheel. While some additional factors (e.g. history of maltreatment) were not explored (see Zahradnik et al., this volume, for additional information on the role of maltreatment in the alcohol misuse of Aboriginal adolescents), this broader approach was conceptually meaningful to the youth involved in the intervention. This intervention integrated both the cultural and evidence-based science approaches into the programming.

Method

Participants

The sample consisted of adolescents within two Mi'kmaq First Nations communities in Nova Scotia. The age range was 14-18 years (M = 16) and the grade range was from 8-12 (M = 10). The screening sample was comprised of 169 students (87 females, 82 males) and a total of 41 (26 females, 15 males) youth were identified as eligible and willing to participate. Of those, 29 (20 females, 9 males) presented for and received the interventions. The remaining 12 (6 females, 6 males) willing and eligible students were assigned later as controls because they did not participate in the intervention for various reasons (e.g., illness on first day of intervention).

Measures

Various standardized and author-compiled measures were used to gather information related to demographics and personality-risk-type at baseline (pre-intervention), as well as a variety of alcohol outcomes at baseline and four months post-treatment. For selecting kids into the interventions based on personality risk, we used a validated measure of the three personality factors of interest. Specifically, the Substance Use Risk Profile Scale (SURPS; Conrod & Woicik, 2002) is a 23-item assessment tool that measures levels of several specific personality risk factors for alcohol abuse/dependence including Anxiety Sensitivity, Hopelessness, and Sensation Seeking. A demographics questionnaire (Stewart & Devine, 2000) gathered age, gender, and grade level information, as well as asked students to report whether they had consumed alcohol within the last four months. The latter item was used to select students into the interventions (i.e., to select for current drinkers) and was also administered at follow up as one of several outcome measures. Another outcome measure tapped drinking problems. Specifically, the Rutgers Alcohol Problem Index (RAPI; White & Labouvie, 1989) is a 23-item self-report questionnaire that measures adolescent problem drinking symptoms. We also included

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measures of drinking frequency (i.e., "How often do you usually drink?") and of frequency of binge drinking (i.e., "How often do you have six (five if you are female) or more drinks on one occasion?"), both of which were answered on five point scales. Finally, in order to determine if the results were specific to alcohol, we included a measure of recent marijuana use which asked participants to indicate whether or not they had engaged in any use of marijuana in the past 30 days (scored dichotomously as recent use vs. no recent use).

Using primarily published measures allows for the locating of the current findings within the broader literature on teen alcohol/substance use, as many of these will have used the same questionnaires. This strategy also helps to build a knowledge base on First Nations youth, where common points of comparison to non-Aboriginal and other Aboriginal teens are facilitated. Such questionnaires are readily available with access to the published scientific literature.

Procedure

Data was collected during school-wide screenings in 2 sites (4 schools). Eligible students (i.e., Mi'kmaq First Nation teen drinkers who displayed elevations on at least one of the three personality risk factors of the SURPS) were invited to participate in one of three personality-matched brief intervention groups (i.e., one for anxiety sensitive drinkers, a second for sensation seeking drinkers, and a third for negative thinking drinkers). Personality elevations were defined as scoring at least one standard deviation above the screening sample mean, for their gender, on any of the three SURPS subscales of interest. If students showed elevations on more than one of the three SURPS subscales, they were assigned to the personality group where they showed the greatest deviation from the norm (i.e. if they were elevated on both sensation seeking and negative thinking/hopelessness subscales but their elevation was higher relative to their peers on the sensation seeking subscale, they were assigned to the sensation seekers group). Elevations on more than one personality risk factor were common. For example, of the original 41 students, 17 met criteria for significant elevations in negative thinking/hopelessness, 16 met criteria for significant elevations on anxiety sensitivity, and 20 met criteria for significant elevations in sensation seeking. But based on their most significant deviations on the SURPS subscales of interest, of the original 41 students, 14 were classified as anxiety sensitive, 13 as sensation seekers, and 14 as negative thinkers. Of these, 9 anxiety sensitive, 9 sensation seekers, and 11 negative thinkers, completed the interventions, and 5 anxiety sensitive, 4 sensation seekers, and 3 negative thinkers did not complete the interventions.

The intervention was brief; it occurred across 2 x 90-minute sessions, in mixed gender groups with trained facilitators (guidance counselors and police officers) leading the programming. The training on this intervention, using the developed manual, was provided by a licensed clinical psychologist (SS) and a doctoral level researcher with substantial experience in school-based substance abuse prevention programming (NC). Outcome measures were collected at a four-month post-treatment follow-up.

We had originally planned to conduct this pilot as an open trial. An open trial is often the first-step test in the evaluation of an intervention prior to a larger randomized controlled trial (RCT). In an open trial, all participants are assigned to the active intervention and there is no control group. Instead, pre- to post-treatment changes on important outcome measures are examined to determine the change in drinking measures that accompanies this intervention among those who completed the intervention. It is important to note that whether or not the treatment actually causes the observed changes cannot be determined definitively using this method. However, for a variety of reasons (e.g., illness, family issues), several willing and eligible students did not attend school on the days the intervention was offered. These students also completed the pre- and post-treatment outcome measures and thus served as a control group (albeit not a randomized control group), against which we could compare the intervention group effects. We were able to follow up with 25 (experimental and controls combined) of the original 41 (i.e., 61%). Analyses were completer analyses (i.e., only conducted on the data for the adolescents who completed both the pre and post measures), rather than intent-to-treat (i.e., where those not present at follow-up are conservatively assigned the same scores at follow-up that they had at baseline), because there was no reason to assume that those who did not show for the four month follow up benefited less from the intervention than those who appeared for the follow-up (Watt, Stewart, Birch, & Bernier, 2006). In fact, there were many reasons for

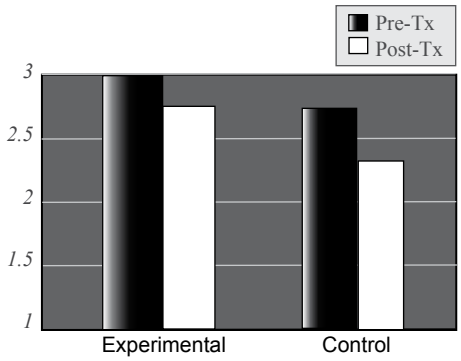

Figure 1: Drinking frequency as a function of group (experimental vs. control) and time (pre-treatment baseline v. four-month post-treatment follow up).

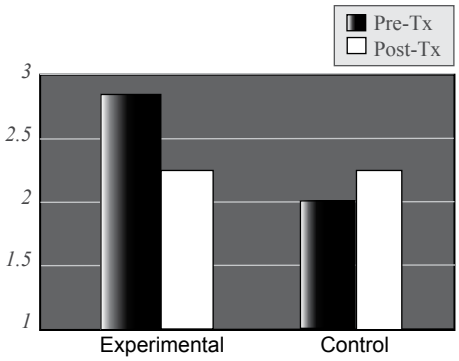

Figure 2: Frequency of Binge Drinking as a function of group (experimental vs. control) and time (pre-treatment baseline v. four-month post-treatment follow up).

students failing to show up on the day of the follow-up assessment including missing school due to illness.

Results

In order to assess the efficacy of this intervention, several outcome indicators were used: frequency of recent alcohol use; frequency of binge drinking; alcohol-related problems as measured by the RAPI; alcohol abstinence; and recent marijuana consumption. Figures 1-5 show results for each of the two groups (experimental and control) on several of the outcome measures at pre-treatment baseline and post-treatment follow-up. Although there were trends for the experimental group to show greater problems on several of the outcome measures at baseline (see Figures 1-3), none of these baseline group differences proved statistically significant. Figure 1 shows the drinking frequency pre- and post- intervention for both the experimental and control groups. A significant decrease in usual drinking frequency was observed for the experimental group ($p < .05$), but not for the control group, from pre- to post-intervention. Figure 2 shows frequency of binge-drinking data for both groups at pre- and post- treatment. The experimental group's binge drinking frequency decreased marginally from pre- to post-treatment ($p < .06$), while the control group's binge drinking frequency did not change over this same interval (Note: Statistical significance is usually taken at a .05 level or less. For $p = .05$, it means that the positive finding is probably true 95% of the time, occurring due to chance or a non-real difference, 5% of the time. Levels just short of $< .05$ [e.g., $p = .06$] are usually considered trends, which are important to report especially when the area of study is new, as in this case).

Figure 3 presents alcohol-related problems outcomes which were quantified as total scores on the RAPI. The experimental group experienced significantly less alcohol-related problems post-treatment compared to their levels pre-treatment ($p < .005$) while the control group showed no change over the same interval. Figure 4 shows that only the experimental group ($p < .005$), but not the control group, showed a significant increase from pre- to post-treatment in the proportion of youth who had abstained from alcohol in the previous four months. Finally, although the target of the intervention was alcohol misuse, it was expected that the intervention might also have effects on misuse of other substances; this possibility was tested with respect to marijuana use. Figure 5 shows that recent marijuana consumption (in the past 30 days) decreased from 55% to 30% in the experimental group from pre- to post-treatment ($p < .05$), while the proportion using marijuana in the control group remained the same at about 50% at both pre- and post-treatment.

Discussion

In the present project, we developed and pilot-tested an early intervention for alcohol misuse among First Nations adolescents from two Mi'kmaq communities in Nova Scotia. This intervention targeted specific at-risk personality types and associated risky drinking motives and is among some promising new developments in prevention and early intervention for alcohol abuse in youth (Stewart et al., 2005). While this type of intervention has been shown to be

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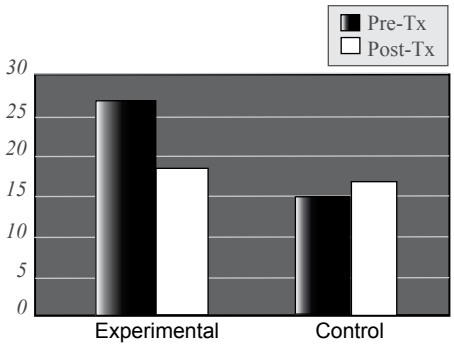

Figure 3: Alcohol related problems on the RAPI as a function of group (experimental vs. control) and time (pre-treatment baseline v. four-month post-treatment follow up).

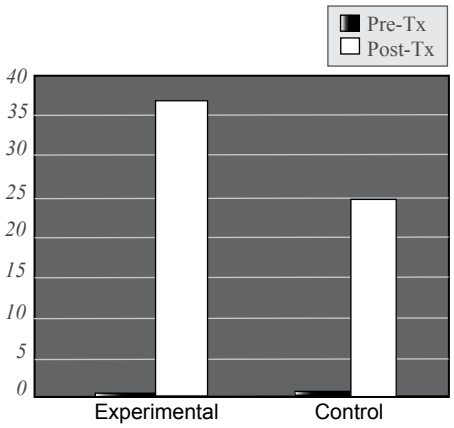

Figure 4: Alcohol abstinence (% last 4 months) as a function of group (experimental vs. control) and time (pre-treatment baseline v. four-month post-treatment follow up).

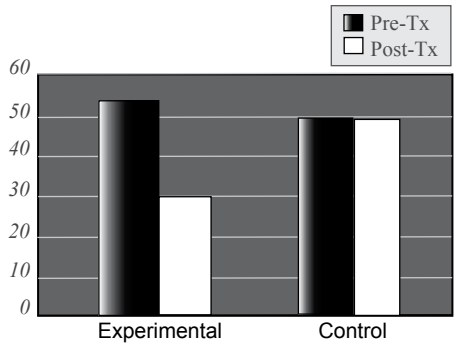

Figure 5: Recent Marijuana Use (% last 30 days) as a function of group (experimental vs. control) and time (pre-treatment baseline v. four-month post-treatment follow up).

effective in the majority population (see Conrod et al., 2006), it had not been previously tested with First Nations youth. The present pilot study suggests that this type of intervention is a promising approach for intervening early with First Nations adolescent drinkers, that is worthy of further research.

The intervention was received well in the communities for many reasons. First and foremost, community acceptance of the intervention was in large part due to the communities' identification that alcohol misuse was an issue for their adolescents. Acceptance of the interventions was also enhanced by the collaborative working alliance that was developed between the research team and key members of the community, in all aspects of the project (see Comeau, Stewart, Mushquash, et al., 2005, for additional detail on the community collaboration involved in setting up and implementing this early intervention program). Furthermore, students at the four schools involved were actively engaged in setting up the interventions through such varied types of involvement as participating in the quantitative survey, contributing their own experiences to the qualitative interviews, and/or contributing to the artwork that was used in the manuals.

In sum, these pilot results show that the "Nemi'simk, Seeing Oneself" intervention program is a promising method for reducing drinking behaviour and early signs of drinking problems in adolescent drinkers from this cultural group. Compared to eligible students who did not participate in the intervention program who showed no significant change, intervention completers drank less frequently, engaged in fewer binge-drinking episodes, had lower levels of alcohol-related problems, were more likely to abstain from alcohol use, and reduced their marijuana use at four months following the interventions relative to their levels at pre-treatment baseline.

Due to our small sample size, we were unable to determine whether there were differential responses of the various personality groups to the interventions. This could be important because Conrod et al. (2006) showed, for example, that anxiety sensitive students from the majority culture respond to interventions through increased abstinence rates and decreased RAPI scores, whereas sensation seeking students from the majority culture respond to the interventions through decreased binge drinking. It will be important to conduct a larger-scale study to determine if such personality-specific findings extend to Mi'kmaq

youth. As well, future research should determine if this intervention is effective for at-risk youth in other First Nations communities across Canada by actively collaborating to apply this methodology to be respectful and assure meaningfulness for the youth that comprise Canada's diverse First Nations population. Future studies should also explore whether the reduced rate of marijuana use means that the benefits of the intervention might extend to adolescents' use of other substances, particularly since the personality risk model extends beyond alcohol abuse to the misuse of a variety of addictive substances (e.g., Conrod et al., 2000a). Finally, future research needs to consider factors including gender, exposure to violence, or maltreatment, which might further differentiate those who can benefit maximally from this intervention. Future interventions might be modified to include a focus on dealing with exposure to violence to increase their impact and efficacy (for more on exposure to violence and its relevance to substance misuse in Aboriginal youth, see Zahradnik et al., this volume). Teens in the qualitative interview spontaneously discussed dating violence (Comeau, Stewart, & Collins, 2004) and there is a substantial overlap between various forms of interpersonal violence and substance abuse (Stewart, 1996; Wekerle & Wall, 2002, Brewin, Andrews, & Valentine, 2000). As well, some adolescents scored high on more than one personality risk-factor or motive for alcohol use and thus may use alcohol (and other drugs) for a variety reasons. In our intervention, we addressed only the primary personality risk factor and associated motive for alcohol use. Future research will need to determine whether multiple targets of intervention are any more effective for those youth who are multiply affected.

While the blended approach of combining traditional knowledge with cognitive-behavioural treatment techniques is not necessarily new, what is novel with this particular intervention approach is (a) applying the personality based model to First Nations alcohol misuse and (b) doing this in a culturally-sensitive manner through community-based collaboration that allowed us to capture the meaning of alcohol within the lives of the youth.

With respect to differences between the experimental and control groups in this study, we employed the only analytic approach that is justifiable under these circumstances (i.e., where the assignment to groups was not random): separate pre-post tests in each group. We demonstrated that the intervention group showed reductions in alcohol and marijuana use over the same interval as the control group did not experience these same reductions. The two groups did not differ significantly at baseline on any measures. The control group always appeared to be less (rather than more) severely affected than the intervention group, arguing against the idea that the most severely affected (e.g., those with the most alcohol related problems) are least likely to participate in the interventions.

Finally, because these personality traits have been shown to be risk factors for alcohol misuse and problems associated with misuse, our intervention specifically focused on early intervention with alcohol misuse; however, we recognize that the intervention theoretically has promise for other substances of abuse as well (see Conrod et al., 2000a). Moreover, rarely is alcohol misused in isolation from other substances (Barrett, Gross, Garand, & Pihl, 2005; Barrett, Darredeau & Pihl, 2006). Thus, there are some exciting new directions for this intervention approach. Additionally, the strength and promise of this approach are in its model of partnering research expertise with youth service expertise and traditional cultural health

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expertise with the common goal of improving the health of youth in the community.

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