New Developments in Prevention and Early Intervention for Alcohol Abuse in Youths

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This article summarizes a symposium held at the 2004 Annual Meeting of the Research Society on Alcoholism in Vancouver, British Columbia, Canada. It was prepared by the conference co-organizers/co-chairs with substantial input from each of the symposium participants. Increasingly, alcohol abuse interventions focus on preventing alcohol problems or intervening early before risky drinking behavior becomes ingrained. Universal prevention programs have produced no or only modest effects on the drinking behavior of youths. Although some existing targeted prevention programs have proved effective, they have not tapped the full range of potential intervention targets, such as the underlying motivations for alcohol misuse in youths who are at greatest risk. The set of papers presented in this symposium outline exciting new developments in the field of targeted prevention and early intervention programs for adolescent drinking problems, presented by an international panel of researchers. These developments include attention to making interventions relevant to adolescents’ lives, focus on personality and motivational factors underlying alcohol misuse, and combining existing cognitive behavioral programs with expectancy challenge and motivational interviewing techniques.

Key Words: Adolescence, Alcohol Abuse, Prevention, Early Intervention, Targeted Prevention Programs.

ALCOHOL IS USUALLY the first substance used during adolescence and its use is often associated with progressive experimentation with other illicit drugs (Scheier and Botvin, 1998). Research also indicates that youths who initiate drinking at an early age are more likely to increase their drinking and to experience alcohol-related problems during adolescence and are at greater risk for lifetime alcohol abuse or alcoholism (Grant and Dawson, 1997; Hawkins et al., 1997). In fact, alcohol use disorder is one of the most prevalent psychiatric disorders in young people (Bijl et al., 1998). In addition to its prevalence, heavy alcohol use in teenagers carries significant risk for adverse physical health, psychological, and/or social consequences (Cooper, 1994; Kaminer, 1999; Kandel et al., 1986). Alcohol abuse among adolescents increases the probability of forced and unsafe sex, contracting a sexually transmitted disease, making a suicide attempt, dropping out of school, unemployment, social isolation, depression, and neuropsychological impairment (e.g., Newcomb and Bentler, 1989; see review by Clark, 2004). Hence, drinking among teenagers is a serious health risk that warrants major attention. It is clearly necessary to develop effective programs to prevent alcohol abuse in adolescents.

Increasingly, alcohol abuse interventions focus on preventing alcohol problems or intervening early before risky drinking behavior becomes ingrained. Development of effective preventive and early interventions for alcohol abuse in youths is important for a number of reasons, including the high clinical demand for such programs, the possibility of influencing the typically negative course of early-onset drinking (Grant and Dawson, 1997; Hawkins et al., 1997), and the possibility of preventing the early onset of associated psychological problems such as depression (Newcomb and Bentler, 1989).

In general, prevention programs can be divided into those that are universal and those that are targeted. Universal prevention programs have included those in which youths are educated about the harms associated with alcohol use; unfortunately, this is not enough to discourage teens from drinking (Darkes and Goldman, 1993). Cognitive-behavioral programs involving teaching students life skills to resist social influences to engage in substance use (e.g., Botvin and Griffin, 2001) have been shown to be effective, but, in general, existing universal prevention programs show no effects or only weak effects in decreasing or preventing heavy alcohol use and alcohol-related problems in youths (Foxcroft et al., 2002; Wagner et al., 1999).

Targeted prevention programs are geared toward prevention in youths who are at high risk for problematic...
alcohol use. Existing targeted prevention programs have included therapeutic focuses such as changing distorted perceptions about drinking norms or increasing motivation for change by increasing youth awareness of how their alcohol use has negative consequences for them (Monti et al., 2001; O’Leary Teyyaw and Monti, 2004). There are, however, some limitations to existing targeted prevention programs for youths. For example, these existing programs seem to be most effective for those who are already demonstrating heavier substance use patterns, and few have tapped the entire range of possible effective targets such as focusing on underlying reasons for alcohol misuse [i.e., “drinking motives” (Cooper, 1994)] among those who are most at risk. Moreover, because most of these approaches target youths who already show heavy or problematic alcohol use, these programs thus are limited in their ability to be “preventive” and might be better viewed as “early intervention” programs.

The set of papers presented in this symposium focused on exciting new developments in the field of prevention and early intervention approaches for alcohol misuse in youths. These new developments include attention to making interventions relevant to adolescents’ lives, focus on relevant personality and motivational factors underlying alcohol misuse in youths, combining existing cognitive behavioral programs with expectancy challenge and motivational interviewing techniques, and attention to needs of particular high-risk populations such as Native youths. This symposium consisted of an introduction to the area by one of the symposium co-chairs/co-organizers, Dr. Sherry Stewart, and presentations from an international panel of researchers from the United States, Canada, the United Kingdom, and the Netherlands (Dr. G. Alan Marlatt, Dr. M. Nancy Comeau, Dr. Patricia Conrod, and Carolien Thush, doctoral candidate). These talks were followed by an integrative discussion by adolescent alcohol abuse research expert Dr. Marvin Krank. The content of each of the four presentations is summarized below, followed by a summary of Dr. Krank’s integrative discussion.

THE JOURNEYS OF THE CIRCLE PROJECT: PREVENTION OF ALCOHOL PROBLEMS AMONG ADOLESCENT NATIVE YOUTHS

G. Alan Marlatt, June LaMarr, Lillian Cummins, Patricia D. Mail, Sandra Radin, Elizabeth Hawkins, Arthur Blume, and Heather Lonczak

Although today’s Indian youths have discouragingly high rates of alcohol, tobacco, and other drug use, attempts to intervene in and reduce misuse of alcohol and other drugs have not had great success. Despite the barrier, Native communities have managed to develop and support innovative programs with a strong emphasis on historic cultural traditions and modern realities. For the Pacific Northwest, coastal Canadian, and Southeast Alaskan natives, a major tradition recently revived is the Canoe Journey tradition. Although Puget Sound and Vancouver Island Native peoples have revived the canoe tradition as a positive year-round experience for youths, until recently, this tradition has not been integrated into a broader prevention program for youths who are at high risk for alcohol and drug problems. For addressing this need, a collaborative project was established between the University of Washington Addictive Behaviors Research Center and the Seattle Indian Health Board to develop a life-skills curriculum based on two powerful Native traditions: the canoe journey and the medicine wheel.

The major focus of the project was the development of the Journeys of the Circle curriculum, designed as a group-based intervention for high-risk Native youths. This curriculum was authored by Dr. June LaMarr, one of the Native American members of the research team, with input from other members of the team and youth participants in a series of focus groups. As it was developed, several aims for the project were also identified. These aims included recognizing the relevance of Native tradition in contemporary life, adapting culturally congruent traditional symbols in presenting basic life skills, introducing urban youths to historic traditions now being revived, reducing alcohol and substance misuse and its harmful consequences among urban Indian youths, and providing youth opportunities for positive recreational activities.

The Journeys of the Circle curriculum consists of an eight-session group-based life-skills training course that draws on aspects of the canoe journey taken each summer by Native youths in the Pacific coastal region. In addition to the canoe journey, a traditional symbol that is congruent with a larger Native cultural construct was used: the medicine wheel. Different tribal groups refer to the wheel by various terms, such as the “four directions” or the “circle of life.” The Native symbolism and activities were combined with other skills and values, including effective communication, decision making, and goal setting. Stories from Indian elders also enrich the curriculum. The intervention was administered by psychology graduate students and staff members from the Seattle Indian Health Board.

Participants included urban Indian teens, aged 13 to 19, who were recruited from both Seattle Public Schools and the Seattle Indian Health Board. A total of 122 Native adolescents (55% female) were screened successfully for pre- and posttest assessment. Among those who received the course, 50 completed a 3-month follow-up and 21 completed the 6-month follow-up. Comparing baseline outcomes to 3- and 6-month follow-up averages, a significant reduction in the Rutgers Alcohol Problem Index (RAPI) (White and Labouvie, 1989), a measure of harmful consequences of drinking, was evident at follow-up ($p < 0.05$). In addition, trends for reductions in past-month alcohol use, marijuana use, and all drugs except tobacco were evident. Female adolescents may have responded more positively to the intervention for some outcomes. Also, a nearly signifi-
icant effect is noted for the intrapersonal social confidence measure (self-efficacy ratings) to resist alcohol abuse among female adolescents ($p = 0.05$) but not among male adolescents ($p = 0.14$). The results suggest that the intervention holds promise for improving the quality of life for Native adolescents, but continued analyses are needed to examine further differential treatment effects by sex.

The preliminary findings of the Journeys of the Circle project indicate that a culturally and developmentally appropriate intervention drawing on culturally congruent symbolism and emphasizing ways to improve life skills may be a promising approach to the prevention of alcohol and other drug misuse among urban Native adolescents. The program facilitator’s guide also includes a discussion of ways to adapt the curriculum for communities that are unfamiliar with canoes as a major form of transportation. The central theme of the program, the preparation for and practice of life skills for a successful life’s journey, is one that can easily be made congruent with a variety of Native cultures. Our use of the medicine wheel as a tool for summary and reflection has wide applicability across various cultural traditions, as the circle is a broadly recognized and accepted symbol for balance, harmony, and wholeness. Obviously, the use of the canoe as a metaphor for life’s journey is not as easily translatable. Native communities are encouraged to look into their past for appropriate substitutes, such as the dog sled or horse riding. That Native communities continue to use traditional symbolism in their interventions indicates both the need and the desire for life lessons that are embedded in the familiar and are valued as ways of life and traditions that must be preserved.

**A NOVEL METHOD FOR THE DEVELOPMENT OF ADOLESCENT ALCOHOL ABUSE PREVENTIVE INTERVENTIONS**

Nancy N. Comeau, Sherry H. Stewart, Pamela Loba, and Jennifer Theakston

The purpose of this presentation was to outline a novel method for the development of an alcohol abuse brief intervention program aimed toward teens who are at high personality risk for alcohol abuse. This presentation detailed how the authors have combined results from quantitative and qualitative investigations to develop a novel set of interventions for preventing alcohol misuse in at-risk teens that are meaningful to the lives of these adolescents.

Motivational theories of substance abuse variability generally propose that individual differences in personality reflect different susceptibility to certain reinforcing properties of drugs of abuse (Conrod et al., 2000a; Cooper et al., 1995; Pihl and Peterson, 1995). Certain personality factors have been associated with unique reasons or motives for alcohol use (Stewart and Devine, 2000; Stewart et al., 2001; Theakston et al., 2004). Two such personality vulnerability factors are anxiety sensitivity (AS) and sensation seeking (SS). Recent research suggests that these personality factors are associated with unique reasons or motives for alcohol use (Comeau et al., 2001; Stewart and Devine, 2000; Stewart et al., 2001; Theakston et al., 2004). Quantitative research provides an empirical case for targeting personality factors as a means for reducing “risky” drinking motives in adolescents (Cooper, 1994). Coping, conformity, and enhancement motives are considered “risky” because of their established associations with heavy drinking and/or drinking-related problems in youths (Comeau et al., 2001; Cooper, 1994) and adults (Conrod et al., 1998, 2000b; Stewart et al., 1997, 2001; Stewart and Zeitlin, 1995). These maladaptive motives in turn put a young person at risk for alcohol problems (i.e., specific types of harm resulting from alcohol use).

In our first (quantitative) study, we investigated associations between personality factors and drinking motives using Cooper’s (Cooper, 1994) categories of alcohol use motivations as applied to teens’ use of alcohol (Comeau et al., 2001). Results indicated a distinction between two particular pathways of personality factors that increase the likelihood that a young person will consume alcohol for specific maladaptive drinking motives (enhancement, coping, and conformity; Cooper, 1994) that in turn put a young person at risk for alcohol problems. Overall, findings supported differential pathways of SS to enhancement motives and AS to negative reinforcement motives. Study 1 also showed that previously documented relations between high SS and enhancement drinking in youths (cf. Cooper, 1994) seem to be limited to the intensity-seeking (as opposed to novelty-seeking) component of SS (Arnett, 1994). Thus, when we use the term SS to characterize the teens, we are referring specifically to the intensity-seeking component of sensation seeking (Arnett, 1994).

A second (qualitative) investigation further enlisted the engagement of teens at high personality risk for alcohol abuse (i.e., SS or AS). In study 2, we expected that open-ended, semistructured interviews would yield results consistent with previous questionnaire-based research (Comeau et al., 2001) on the motives underlying alcohol use behavior in AS and SS adolescents. Results of interviews on teens’ motives for alcohol use, alcohol use contexts, and perceived relations of personality to drinking behavior were consistent with and substantially extended our previous questionnaire-based (quantitative) study findings. For example, predominant themes in terms of SS-specific motives for drinking were letting loose and enhancing their enjoyment of the moment. In contrast, AS teens reported appreciating the sedating effects of alcohol because it helped them feel less anxiety about fitting in or other immediate concerns. There was a strong theme of negative affect reduction in the AS youths but positive affect enhancement in the SS teens.

The enriched understanding of connections between the personality factors and drinking motivations that resulted from study 2 informed the development of novel motive-specific interventions. These early interventions were de-
rived from community-based personality-matched treatments for addictive disorders in AS and SS adult women (Conrod et al., 2000b). Conrod et al. (2000b) demonstrated that substance-abusing women, classified according to specific personality profiles (e.g., AS versus SS), manifested distinct patterns of addictive and nonaddictive psychopathology and coping skills deficits. Moreover, treatment that was focused on provision of subtype-specific coping skills was found to reduce substance use problems in these women relative to control interventions, particularly when the coping skills were provided in a “matched” manner (i.e., when an AS women received an intervention targeting AS). These findings highlighted the importance of developing intervention strategies that differentially target subtype-specific personality, motivational, and coping skills profiles (Conrod et al., 2000b). The researchers involved in the present intervention reasoned that it should be possible to extend this earlier treatment approach for use in early intervention with at-risk groups of AS and SS teenage drinkers. However, it first was necessary to make the interventions developmentally sensitive and relevant to the lives of at-risk teens.

The early interventions were developed in handbook form involving a manual for the facilitators and a workbook for the participants that is a subset of the material found in the facilitator manual. The facilitator manuals include the participant workbook plus instructions for the facilitators. The manuals and workbooks made use of images that, like the scenarios, were informed by the results of our qualitative study. Several of the scenarios tried to capture the complexities of teens’ social and personal relationships with alcohol as the youths defined these relations. Some scenarios focused on maladaptive coping strategies in an attempt to document the interviewed teens’ diverse experiences with and contexts of alcohol use. The personality constructs of AS and SS and their relationship to drinking motives were both supported and broadened in the qualitative data.

The brief intervention program developed is therapeutic in nature and as such can be classified as an indicated intervention or tertiary prevention program (cf., Amaro et al., 2001; Kaminer, 1999) with a goal to stem the progression of alcohol use and/or reduce alcohol involvement among at-risk individuals. A primary assumption of the approach is that by intervening at the level of personality vulnerability, one can change or help manage adolescents’ maladaptive drinking motives (e.g., coping, conformity, enhancement; Cooper, 1994) and ultimately reduce heavy drinking and alcohol-related problems. Results of a randomized controlled trial on the effectiveness of this intervention approach were presented by Conrod in the next talk in this symposium.

On the basis of the results of these multimethod findings, it is possible that a similar method could be used in meeting the specific early intervention needs of minority groups. These groups of adolescents will likely have differences in life experiences that are salient in reality. In the previous talk in this symposium, Marlatt discussed the at-risk status of Aboriginal youths in terms of potential for alcohol abuse. Targeting personality risk for substance abuse may represent a promising prevention or early intervention strategy among Aboriginal teens. Currently under investigation are associations between personality factors (e.g., AS and SS) and drinking motives (Cooper, 1994) among youths in First Nations communities in Nova Scotia. This pilot study is based on the recently proven method informing the development and testing of intervention techniques among non-Aboriginal adolescents as described by Conrod in the next talk in this symposium. This novel method may have significance for future program development to meet diverse cultural and health-related needs of a variety of groups of at-risk adolescents.

PREVENTIVE EFFICACY OF COGNITIVE BEHAVIORAL STRATEGIES THAT TARGET PERSONALITY RISK FACTORS FOR YOUTH ALCOHOL MISUSE

Patricia J. Conrod, Sherry H. Stewart, Nancy N. Comeau, and Michael Maclean

Personality is a construct that exists cross-culturally and that is important for understanding alcohol/drug use among adults and adolescents (Comeau et al., 2001; Conrod et al., 2000a; Cooper et al., 1995). Some personality risk factors have been linked to specific motivational processes implicated in alcohol use and misuse (Comeau et al., 2001; Conrod et al., 2000a; Cooper et al., 1995). For example, AS, hopelessness (H), and SS are personality risk factors for alcohol misuse, each associated with specific substance misuse patterns, maladaptive motives for use, and vulnerability to specific forms of comorbid psychopathology in both adolescents and adults (Comeau et al., 2001; Conrod et al., 2000a). On the basis of a set of personality-matched interventions developed by Conrod et al. (2000b) and shown to be effective in reducing substance misuse among adult substance abusers, we developed a set of interventions and manuals that were designed to intervene at the level of personality risk and associated risky motives for alcohol use in youths. The specific method used in the development of these interventions was described in the previous talk in this symposium by Comeau. Manuals contained psychoeducational information on the target personality risk factor and how it is understood to be associated with maladaptive coping and exercises targeting maladaptive cognitive strategies specific to each personality type. We tested the preventive efficacy of these novel interventions in Canadian high schools.

The participants in this study were recruited from a larger screening sample of high school students between the ages of 14 and 17 years (2592 in British Columbia and 2290 in Nova Scotia). Eligible teens were “drinkers” (i.e., those who reported consuming at least one drink in the past 4 months) who also scored at least 1 SD above the norm on the Arnett Inventory of Sensation Seeking, Intensity sub-
scale (AISS-I) (Arnett, 1994), the Childhood Anxiety Sensitivity Index (CASI) (Silverman et al., 1991), or the Hopelessness subscale of the Substance Use Risk Profile Scale (SURPS) (Conrod and Woicik, 2002) in school-wide screenings. Participants were randomly assigned either to the appropriate personality-matched intervention or to a control group. Single-sex, group-based interventions took place over two 90-min sessions. During screening, participants completed personality measures. Selected participants in both the experimental and the control groups completed outcome measures before treatment (i.e., during the screening) and at 4 months after treatment, including quantity and frequency measures of alcohol consumption, binge drinking, and alcohol problems. Quantity of alcohol consumption was assessed by asking students to indicate the average number of standard alcoholic beverages (one drink equals one 12-oz bottle/can of beer, or one small 4-oz glass of wine, or one 1-oz shot of hard liquor, either straight or with a mixer) that they typically consumed on a single drinking occasion over the last 4 months according to a five-point scale with the following anchors: 1 = 1 or 2 drinks, 2 = 3 or 4 drinks, 3 = 5 or 6 drinks, 4 = 7 to 9 drinks, and 5 = 10 or more drinks per typical drinking occasion. Students reported how often they usually drank alcohol over the same 4-month period according to a five-point Likert scale with the following anchors: 1 = less than monthly, 2 = once a month, 3 = 2 or 3 times a month, 4 = weekly, and 5 = daily or almost daily. The RAPI (White and Labouvie, 1989) was used to assess adolescent problem drinking symptoms.

In total, 111 high AS youths, 146 high SS youths, and 40 high H youths were selected and voluntarily participated in the intervention phase of the study and were randomly assigned to receive a personality-targeted, two-session intervention (N = 166) or to a control group (N = 131). Both groups were reassessed at the 4-month follow-up period, with 90% of the sample available for follow-up. We examined the effect of the intervention on drinking behavior using intention-to-treat analyses, whereby students who did not complete the follow-up assessment were assigned drinking status and binge drinking status at follow-up. On all other nondichotomous variables, their outcome scores were replaced by their baseline scores for each variable.

Results showed that there were no significant differences between the personality groups or experimental groups on any of the demographic variables, but there were personality group differences on several baseline variables. SS adolescents were overrepresented in the heavier drinking categories, with the SS group reporting more frequent drinking \( \chi^2 (8) = 17.95, p < 0.05 \) and a trend toward drinking larger amounts of alcohol per occasion \( \chi^2 (8) = 14.28, p < 0.08 \). The SS group evidenced higher rates (59%) of binge drinking (drinking five or more alcoholic beverages per occasion for boys and four or more for girls) relative to the other two groups \( \chi^2 (2) = 7.09, p < 0.05 \). There were no significant differences between the intervention and control groups on any of the baseline drinking or personality variables.

\( \chi^2 \) analyses on follow-up abstinence rates indicated that there was a significant intervention effect on abstinence rates for the AS group \( \chi^2 (1) = 4.50, p < 0.05 \), a trend toward a significant effect for the H group \( \chi^2 (1) = 2.68, p = 0.1 \), and no effect of intervention on abstinence rates in the SS group. There was also a significant effect of intervention on binge-drinking rates, with 59.5% of the control group reporting binge drinking at follow-up and only 41.6% of the intervention group reporting binge drinking at follow-up \( \chi^2 (1) = 9.5, p < 0.002 \). There was also evidence of a differential effect of treatment on binge-drinking rates across personality risk groups. \( \chi^2 \) analyses indicated that binge drinkers were overrepresented in the SS control group (68%) at follow-up relative to the SS intervention group (48%) at follow-up \( \chi^2 (1) = 5.65, p < 0.05 \). There was no effect of intervention on binge drinking for the AS or H groups.

A two-way intervention (control versus intervention) by personality group (AS, H, and SS) ANCOVA on the drinking quantity variable (controlling for personality group differences in baseline drinking quantity) revealed an intervention main effect \( F(1,288) = 4.33, p < 0.05 \), with the intervention group demonstrating lower levels of alcohol consumption at follow-up relative to the control group. A similar ANCOVA on frequency of alcohol consumed at follow-up did not reveal a significant intervention effect for this outcome measure. A similar analysis on RAPI scores, with baseline RAPI scores as the covariate, revealed a significant intervention by personality group interaction \( F(2,284) = 4.05, p < 0.02 \). Analysis of simple main effects revealed intervention effects for the AS group only \( F(1,106) = 8.11, p < 0.01 \), with the AS intervention group evidencing a significantly lower baseline-adjusted mean RAPI score at follow-up relative to the AS control group.

A specific aim of this study was to explore the clinical utility of brief interventions that specifically target three dimensions of personality-risk for alcohol abuse (AS, H, and SS). In general, these brief interventions were shown to be effective in facilitating abstinence; reducing drinking quantity and binge-drinking rates; and reducing alcohol problems in certain youths relative to their no-intervention, personality-matched counterparts. However, beyond just affecting the most “risky” aspects of early-onset alcohol use, each intervention seemed to have effects on aspects of drinking behavior that are particular to each of the personality types. According to baseline data, the SS group was more prone to binge drinking than the other two personality groups, and the intervention seemed to have more impact on this drinking variable for the SS group than the other two personality risk groups. By contrast, the AS group demonstrated similar drinking-related problems relative to the SS group, despite drinking lower quantities of alcohol than the SS group. The AS intervention seemed to exert its effects via increasing abstinence and decreasing problem drinking symptoms, relative to the SS intervention and to the AS control groups. Thus, it seems that these...
personality-specific interventions are effective in reducing the very drinking behaviors that are most problematic for each personality type, thus providing further support for the necessity for matching early interventions to specific personality risk factors for alcohol misuse. These are important findings in light of the recent recognition that those who initiate drinking in early youth are more likely to increase their drinking and to experience alcohol-related problems during adolescence and are at greater risk for lifetime alcohol abuse or alcoholism (Grant and Dawson, 1997; Hawkins et al., 1997). Furthermore, considering the elevated and problematic co-occurrence between addictive and nonaddictive disorders in youths (Conrod and Stewart, 2005), the proposed intervention strategy presents clinical advantages over other treatment strategies because this new approach has the possible advantage of improving coping skills related to both the substance abuse and comorbid disorders. Finally, this intervention approach may be particularly attractive to youths as the intervention discussed issues that were related to substance use, but rarely was direct a reference made to alcohol and drugs—making the present intervention distinct from alcohol abuse prevention programs involving “scare tactics” that are rarely effective with young people (Darkes and Goldman, 1993).

A RANDOMIZED, CLINICAL TRIAL OF A TARGETED PREVENTION TO MODERATE ALCOHOL USE AND ALCOHOL-RELATED PROBLEMS IN ADOLESCENTS WHO ARE AT RISK FOR ALCOHOLISM

Carolien Thush, Reinout W. Wiers, Jorien van den Bosch, Joke Opdenacker, Nicole Theunissen, and Frans Feron

In this talk, Carolien Thush presented the preliminary results of a study that tested the effectiveness of a targeted prevention program, called “Learning to Drink.” This current study (to be published in detail later) investigated whether this program was effective in moderating alcohol use and preventing the development of alcohol-related problems in high-risk adolescents. Besides the need for an effective prevention program, this targeted prevention program was considered necessary for two other main reasons. First, the existing universal Dutch prevention methods show no or minor effects in decreasing alcohol use and alcohol-related problems in adolescents (Cuijpers et al., 2002). Second, although population studies indicated that alcohol abuse and dependence is one of the most prevalent disorders in youths, almost no adolescents are in treatment for alcohol problems in the Netherlands. Only 1% of all patients who are in treatment for alcohol problems are younger than 25 years. Currently, Dutch community health centers offer no targeted interventions for underage adolescents who are developing alcohol problems. So besides the preventive aspect of this program, the idea was to offer underage adolescents an opportunity to learn to recognize and counter alcohol-related problems. The main aim of the targeted prevention program “Learning to Drink” was to enhance moderate alcohol use and to prevent the development of alcohol-related problems in high-risk adolescents.

The program “Learning to Drink” consisted of a total of seven weekly sessions and of one parent session that took place in a bar lab at the University of Maastricht. The seven weekly sessions for the adolescents consisted of six 90-min group sessions and one final individual motivational interview. In each of these sessions, the program targeted variables that have been proposed and sometimes found to mediate alcohol use and alcohol-related problems. These variables included alcohol expectancies, drinking norms, pros and cons of drinking, risk perceptions, and refusal efficacies. The program combined prevention methods such as brief motivational feedback and cognitive behavioral skills-based interventions (Larimer and Cronce, 2002) and was partly based on the Alcohol Skills Training Program (ASTP) (Fromme et al., 1994) and the related Brief Alcohol Screening and Intervention for College Students (BASICS) (Dimeff et al., 1999). The first two sessions consisted of a social and a sexual expectancy challenge (Darkes and Goldman, 1993) adapted for a mixed-sex group (Wiers and Kummeling, 2004). The third session focused on norm setting with regard to drinking (based on ASTP approach) and the decisional balance of light and heavy drinking (Miller and Rollnick, 1991). The fourth session dealt with the perception of risk factors for developing an alcohol problem. A new element in the prevention context was the use of a “naïve theory” approach: common misconceptions regarding risk factors for developing an alcohol problem first were elicited, then were discussed and targeted. The sixth session consisted of refusal efficacies skills training (based on the ASTP approach). The final seventh session was an individual session in the form of an adapted motivational interview in which individualized feedback on the adolescent drinking behavior and risk factors was provided (based on the BASICS program).

The effectiveness of this targeted intervention was investigated in a randomized, clinical trial. Unfortunately, several recruitment strategies such as recruitment through written advertisements, school nurses, and youth workers had proved to be largely unsuccessful. More than 7000 adolescents were given a study advertisement sheet, only 22 of whom responded. The negative response was almost entirely due to lack of reaction to the advertisement. Direct contact in schools through classroom recruitment talks proved to be a better strategy in recruiting participants. The aim of these talks was that regular drinking adolescents felt impelled to participate in “Learning to Drink,” a fun program in which adolescents learned to drink alcohol in a healthy way (with the metaphor of learning how to drive a car). Practical information was given on how many sessions the adolescents would have to attend, where and when the sessions took place, and the monetary incentives that were given. Furthermore, information sheets for the adolescents and their parents were handed out. Of approximately 2000 handed out information sheets, 102 adolescents replied, 85
of which were included in the program. With all recruitment strategies, a total of 107 participants (61 male, 46 female) were included at pretest and randomly divided over five experimental intervention groups and five no-intervention control groups. On the basis of the mean number of units of alcohol per day, a division was made between light and heavy drinkers: 67 light drinkers and 38 heavy drinkers were included in the program (2 participants could not be classified as light or heavy drinker because of dropout and partial missing data). Light-drinking boys consumed a mean number of 0.66 (SD = 0.45) units of alcohol per day, whereas heavy-drinking boys consumed a mean number of 2.90 (SD = 1.08) units of alcohol per day. Light-drinking girls consumed a mean number of 0.56 (SD = 0.24) units of alcohol per day, whereas heavy-drinking girls consumed a mean number of 1.86 (SD = 0.51) units of alcohol per day. During this 7-week period, participants in both the experimental and the control groups were required to list their alcohol consumption and fill out several self-report questionnaires. Currently, 6-month and 1-year follow-up data are being collected from the participants in both the experimental and the control groups.

The first preliminary results concerning the short-term effects of the intervention (N = 107) were promising. Although 12 (11%) participants dropped out during the program and 9 (8%) participants showed severe missing data, a total of 86 (80%) participants stayed in the program and completed both pretest and posttest assessments. However, all of these results should be interpreted with caution, given the limited sample size and the current lack of follow-up data. The results indicated positive changes in some of the determinants of alcohol use and abuse (alcohol expectancies and risk perception). A two-factor mixed factorial ANOVA revealed a significant time × condition effect for high-dose positive expectancies [F (1,83) = 5.99, p = 0.017]. The experimental group showed a significant decrease in high-dose positive expectancies [T (39) = 2.31, p = 0.026]. This decrease in high-dose positive expectancies is a promising indication for the effectiveness of this prevention program, because an earlier study indicated that these exact expectancies are the strongest predictors of alcohol use in heavy-drinking male adolescents (Wiers et al., 1997). Thus, in line with the aim of this prevention program to moderate alcohol use, the participants in the experimental group regarded heavy drinking as less attractive at post-test. Furthermore, a two-factor mixed-factorial ANOVA revealed a significant time × condition effect for risk perception [F (1,81) = 22.21, p < 0.001]. The experimental group showed a significant increase in perceived risk factors [T (34) = −5.67, p < 0.001]. However, although the experimental group showed a significant increase in the perceived advantages of light drinking and disadvantages of heavy drinking compared with the control group, the effects on this mediating variable were not significant after controlling for the difference at pretest (p > 0.300). This might be because at pretest, the decisional balance was already in favor of light drinking. Furthermore, a two-factor mixed factorial ANOVA revealed a very small time × condition effect for binge drinking (p = 0.118, one-tailed). The experimental group showed a decrease in binge drinking; however, not significantly (p = 0.162, one-tailed). Although this is a promising effect, the effect is not significant, which might indicate a power problem.

In short, the first preliminary results of this ongoing study are promising. In line with these results, one might conclude that this targeted prevention program seems to be an effective and useful addition to universal prevention programs. However, these results should be interpreted with caution. Follow-up data and more extensive analyses are needed to test the effectiveness of this prevention program in influencing alcohol use and alcohol-related problems. In addition, in case of positive outcomes, we plan to test a shorter version of the program. A shorter version might be easier to implement given the recruitment difficulties in the current program. Furthermore, in future programs, we plan to assess alcohol-related cognitions in an implicit next to an explicit way. These implicit alcohol-related cognitions seem to play an important role in predicting subsequent alcohol use in students (Stacy, 1997) and in high-risk adolescents (Stacy et al., 1996) and disassociate between heavy and light drinkers (Wiers et al., 2002). Furthermore, the explicit reasons (or outcome expectancies) that adolescents give for their drinking behavior are not always in total agreement with their implicit alcohol associations (Wiers et al., 2002). Directly or indirectly influencing these automatically activated alcohol associations might be the next step in the development of targeted prevention and intervention programs (Wiers et al., 2004).

**DISCUSSION**

**Marvin Krank**

Adolescent prevention is usefully viewed as a metaphor of a journey. Indeed, Marlatt and Fromme (1987) argued that a number of classical metaphors may be useful in not only describing the process of addiction but also in the treatment process itself. The present series of studies focus on targeted interventions in which specific individual characteristics are identified and used to tailor the prevention approach. The use of metaphor runs throughout the work presented here. Marlatt and colleagues use the circle as a culturally significant symbol in their work with adolescent native youths. Both Comeau and Conrod imbed meaningful images of youths in their interventions. The journey as a metaphor for addiction and prevention is particularly powerful. The journey metaphor describes both the ways into and out of risk for addiction. There are many personal, social, and environmental routes to and from alcohol abuse; effective intervention must meet the individual where he or she is. The goal of these tailored interventions...
is to provide specific plans and supports for the trip away from or out of risk for alcohol abuse.

The journey metaphor emphasizes the individual differences in personal characteristics and life situations. In Marlatt's study, social and cultural contexts of Native Americans are recognized and supported by a culturally sensitive yet psychologically driven intervention. The circle metaphor is used as a method to make contact with individuals and direct a safer course of future actions in the relevant cultural context. The program introduced by Conrod and Comeau focuses on personality factors and their interaction with motives for alcohol use and susceptibility to higher risk for abuse. It uses images of adolescents in social and affective situations and trains adolescents to cope without alcohol with those situations in which they are individually susceptible. These brief interventions give a psychological road map to the specific subtype of risk and motive to drink. Finally, Thush described the "Learning to Drink" program, a variation on the expectancy challenge method of Darkes and Goldman (1993) and the BASICS approach of Dimeff et al. (1999). This program is designed to assess the current skills level, cognitive risk factors, and social context to provide individualized support for dealing with the particular challenges that they face. The use of motivational enhancement is also responsive to individual needs. The willingness to move on in new directions to new life goals is an integral part of the approach.

Returning to the journey metaphor, the common thread of these approaches is provision of navigational tools and skills to support changes in direction and movement toward healthy life choices. The novelty and the value in the current approach are that the intervention specifically considers the current status of the individual and matches the provision of support to where the individual is and the resources that he or she has to make a move in a more positive direction. These individually tailored approaches represent a critical next step in prevention science. General assessments of risk and protective factors are useful, but translating these into personal risk and protection, including how these factors interact with personality and history, is even more important. When we measure the personal engine for change and resilience, the psychological vulnerabilities, and the social and cultural context of the individual, we can use these measures to help us define better road maps for change. We will also find that we have a better gauge of individual capacity for change given the terrain that they face. Some individuals may need a psychological tune-up or overhaul; some may need a tow. These are the social, cognitive, and behavioral supports that interventions can provide. Those needed will depend on resilience; cognitive and behavioral skills; and the individual's social setting, community, and culture. They must also be developmentally appropriate.

The present symposium points in new directions for research in prevention that use the best of basic psychological science to chart new courses in interventions. As we further our understanding of the interaction of personality, cognition, and social context and as we hone our psychological GPS (global positioning satellite), tailored interventions matched to individual differences will become more precise and more effective. The three approaches mapped out here provide a compass to guide how this research will lead to new interventions.

REFERENCES


