Substance Use Prevention Campaign for American Indian Youth

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The Be Under Your Own Influence substance use prevention intervention and its assessment will include the following key features.

- A randomized cluster design will be used where treatment schools receive an intervention targeted to 7th grade students, and control schools receive no intervention. The intervention will be implemented with 2 cohorts of 7th graders. Cohort 1 will receive the intervention in parts of years 2 and 3 of the grant while cohort 2 will receive the intervention in parts of years 3 and 4.
- The intervention will be built around the successful school-based anti-drug campaign, Be Under Your Own Influence (BUYOI). It will be adapted for use in reservation-based AI schools and communities to reduce substance use among 7th graders. The intervention uses older peers to deliver messages targeting the goals of autonomy and achievement (aspirations) associated with a drug-free life.
- Years 1 and 2 will be spent working as partners with the treatment schools and communities to adapt the intervention so that it is both culturally appropriate and powerful. We will seek regular and extensive feedback from both adults and youth in the treatment communities. This will include regular meetings with Community Advisory Boards and use of Participatory Action Research (PAR) methods with youth, including a photovoice project, to engage these youth in substance abuse prevention efforts. Local AI liaisons will assist in organizing and implementing the activities that will occur in the intervention communities, including formation of the advisory group, recruitment of students into the project, organization of focus groups, and recruiting the school staff who will serve as advisors to the high-school students.
- In the summer prior to the implementation of the intervention for cohort 1, we will hold a 7-day training institute at Colorado State University for the high school youth selected to be role models. Seven students from each of the four communities randomly selected as intervention sites (28 students) will participate in the institute. During the institute, these youth will be trained to serve as peer role models and to plan and conduct the intervention. During this time, results of a photovoice project will be used to adapt print, audio, and visual media products that the students will use in delivering the campaign messages. A significant portion of the institute will engage the youth as active participants in creating the intervention products. Training modules at the institute will be recorded, edited, and prepared into a training program that can be delivered on-site at the intervention schools the following year for cohort 2.
- Data collection will consist of 4 longitudinal measurement occasions for each cohort using the adapted American Drug and Alcohol Survey. Longitudinal growth models will test for effects of the intervention on the targeted outcomes.
- A sustainable, turnkey intervention will be developed that can be adapted and implemented in AI communities across the nation. If this intervention is found to be effective, we will develop electronic campaign materials that can be adapted for local use. These will be made widely available and easily accessible via a website.

Statistical Analysis

Given the discrete characterization of time as interval-censored risk-periods in this longitudinal intervention study, we will use complementary log-log discrete time hazard models, implemented within R, to estimate the effects of BUYOI and the covariates on the risk of first-time alcohol use, alcohol intoxication, and marijuana use during students 7th-8th grade school years. A discrete time hazard model is an optimal approach to analyzing longitudinal data characterized by non-continuous time (Singer & Willer, 2003). In the present study, the discrete time hazard represents the conditional probability that a student will experience first time alcohol

use, intoxication, or marijuana use (assessed as separate outcomes) during a measurement period, given that students did not use a substance during a previous measurement period. Each variable in the model is considered time-invariant for the purpose of this analysis. Thus, for each model, we tested 1) the hypothesized main effects of BUYOI, gender, and perceived consequences of use for aspirations and autonomy controlling for age and treatment exposure, and 2) the two-way interaction between gender and treatment.

Measures

Age at baseline is included as a covariate in all models. Predictors to be included in our model are sex (Male / Female), perceptions of alcohol / marijuana use consequences for autonomy, and perceptions of alcohol/marijuana use consequences for future aspirations. Perceptions of impact on autonomy is measured with 4 items on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree), with items including "A way to be true to myself is to NOT [drink alcohol / use marijuana]. Perceptions of use on future aspirations is measured with 3 items on a 5-point Likert scale (1=strongly disagree 5 = strongly agree), with items including "One thing that could keep me from doing what I want to do is [drinking alcohol / using marijuana]". For both measures, larger scores reflect stronger perception of consequences for use. Outcomes include hazards of first-time alcohol use, alcohol intoxication, and marijuana use.

Event Variable. Three dichotomized variables calculating self-reported first-time alcohol use, alcohol intoxication or marijuana in the months prior to each measurement occasion, where participants did not report substance use during a prior measurement occasions of this four-wave (i.e. four measurement occasion) longitudinal study. That is, first time substance use reported at measurement occasion 2 after no lifetime use reported at baseline, reported use at occasion 3 after none reported at occasion 2 or baseline and reported use at occasion 4 with none reported prior to occasions 3, 2 or baseline.

Episodes. In this study, episodes represent the period of time between measurement occasions, as such, each episode represents the measured period of time between each wave of assessments. The event variable represents whether or not the participant experienced first-time substance use uptake prior to each assessment.

Duration Variable. Duration of participation in media campaign intervention period across all four waves, beginning with the transition from first to second wave of data collection.

Censoring Indicator. If no substance use is reported, censoring indicator represents completion of study at wave 4. If substance use is reported, censoring indicator indicates the risk period (the period of time between waves 1 and 2, 2 and 3, or 3 and 4) during which the participant experienced uptake of substance use. Approximately 10.3% (*n* = 51*)*, 20.1% (*n* = 100) and 4.6% (*n* = 23) of participants reported lifetime alcohol use, marijuana use or alcohol intoxication at baseline, respectively. As such, these participants are censored (excluded) from the analysis at baseline. Of note, censoring is specific to each model. For example, if a student reported lifetime alcohol use at baseline, but did not report lifetime alcohol intoxication or lifetime marijuana use, that student is censored at baseline in the alcohol initiation model but remains uncensored within the other two models.