

**ATOD  
Community Readiness Survey**

**Conducted by:**

MN Department of Human Services  
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Search Institute  
700 South Third Street, Suite 210  
Minneapolis, MN 55415

Funded by the Center for Substance Abuse Prevention, Washington, DC  
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Thank you for taking this survey. In it, we ask your opinion about alcohol, tobacco, and other drug use among teenagers and adults in your community. By filling it out, you will help make Minnesota communities better places for children, youth and families.

In this survey, *community* means the city, town or neighborhood that you *live in*. *Teenager* means youth *under the age of 18 years*.

Please follow these directions:

1. Answer all questions. Put one check mark () for each question, unless otherwise instructed. You may use pen or pencil.
2. If possible, do the survey all at one time.
3. Please answer honestly. Do not put your name on this form. No one will match your name to your answers. Your survey form will be sent to Search Institute in Minneapolis. Your answers will be combined with those of other respondents.
4. When you are done with the survey, place it in the envelope, seal it, and mail it.

**Thank you for your participation**

Community means the city, town or neighborhood that you live in. Teenager means youth under the age of 18.

1. In your community, how much of a problem do you believe each of the following is?

	Not a problem	A minor problem	A moderate problem	A serious problem
a. Alcohol use by teenagers	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>
b. Tobacco use by teenagers	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>
c. Marijuana use by teenagers	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>
d. Other drug use (such as cocaine, inhalants, methamphetamines, or “uppers”) by teenagers	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>
e. Alcohol use by adults	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>
f. Tobacco use by adults	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>
g. Marijuana use by adults	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>
h. Other drug use (such as cocaine, inhalants, methamphetamines, or “uppers”) by adults	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>

2. In your community, how often do you see...

	Never	Rarely	Sometimes	Very often
a. Somebody drunk in public	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>
b. Teenagers smoking in public	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>

3. To what extent do drug and alcohol use contribute to the following in your community?

	Not at all	A little	Somewhat	Quite a bit	A great deal
a. Crashes or injuries (such as automobile, hunting, boating, or snowmobiling)	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
b. Violent crimes	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>

4. Young people can obtain tobacco products in many different ways. How difficult is it for teenagers in your community to...

	Not at all	A little	Somewhat	Quite	Very
a. Buy cigarettes, cigars, or chewing tobacco at a store themselves	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
b. Get an older person to buy tobacco products for them	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
c. Sneak tobacco products from their home or a friend's home	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>

5. Young people can obtain alcohol in many different ways. How difficult is it for teenagers in your community to...

	Not at all	A little	Somewhat	Quite	Very
a. Buy beer, wine or hard liquor at a store themselves	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
b. Get an older person to buy alcohol for them	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
c. Order a drink in a bar	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
d. Sneak alcohol from their home or a friend's home	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
e. Get their parents to give alcohol to them	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>

6. People have different beliefs and rules about the use of alcohol, tobacco, and other drugs by teenagers. How much do you agree or disagree with each of these statements?

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
a. It is okay for teenagers to drink at parties if they don't get drunk	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
b. Teenagers should be able to drink as long as they don't drive afterwards	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
c. It is okay for teenagers to smoke cigarettes	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
d. Kids who experiment with alcohol or other drugs almost always grow out of it	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>

7. Do you feel that it is okay for parents to offer teenagers alcoholic beverages in their home?

- <sup>1</sup> Yes, but only on special occasions
- <sup>2</sup> Yes, on any occasion
- <sup>3</sup> No, never

8. How acceptable would you rate the parents' actions in the following statements?

	Not at all	A little	Somewhat	Quite	Very
a. After finding out that their teenager had been drinking alcohol, the parents tell their teenager to use alcohol carefully and not let it interfere with schoolwork	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
b. Parents offer their teenager an alcoholic beverage to drink with them, saying that they prefer he or she drink with them rather than drink elsewhere	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>

9. Would you personally favor or oppose spending more time enforcing laws that prohibit sales of tobacco products to teenagers?

- <sup>1</sup> Strongly favor
- <sup>2</sup> Somewhat favor
- <sup>3</sup> Neither favor nor oppose
- <sup>4</sup> Somewhat oppose
- <sup>5</sup> Strongly oppose

10. People have different attitudes about preventing alcohol, tobacco, and other drug problems. How much do you agree or disagree with each of these statements?

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
a. Schools need to be more active in dealing with alcohol, tobacco and other drug problems	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
b. It is possible to reduce alcohol and other drug problems through prevention	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
c. Alcohol and other drug prevention programs are a good investment because they save lives and money	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
d. The community has the responsibility to set up prevention programs to help people avoid alcohol and other drug problems	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
e. All tobacco advertising (billboards, magazines, etc.) should be banned	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
f. Public service announcements are a good way to change attitudes about alcohol and tobacco use	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
g. It seems like my community is not interested in changing, no matter what the issue is	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
h. There is no sense of commitment in my community	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>

11. To help pay for substance abuse prevention services, how willing would you be to...

	Not at all	A little	Somewhat	Quite	Very
a. Increase taxes on alcohol	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>
b. Increase taxes on tobacco	<input type="checkbox"/> <sup>1</sup>	<input type="checkbox"/> <sup>2</sup>	<input type="checkbox"/> <sup>3</sup>	<input type="checkbox"/> <sup>4</sup>	<input type="checkbox"/> <sup>5</sup>

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*This article reports on the development and evaluation of a mail survey measuring population attitudes toward substance use and potential receptivity of communities to different prevention efforts. The Community Readiness Survey was designed through a series of prevention practitioner and consultant meetings and focus groups. Psychometric evaluation revealed five distinct domains: perception of alcohol, tobacco, or other drug problem; support for prevention; permissive attitudes toward teen substance use; perception of adolescent access; and perception of community commitment. Evidence of construct validity was demonstrated by the small but significant relationships between selected scale scores and community readiness as evaluated by prevention planners.*

## THE COMMUNITY READINESS SURVEY

### Development and Initial Validation

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Prevention of substance abuse requires changing existing conditions that either promote or fail to inhibit the initiation of harmful use. Consequently, readiness for prevention can be characterized as readiness for change (U.S. Department of Health and Human Services 1996). Prevention-readiness

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assessment focuses on assessing characteristics of populations and prevention systems that influence their capacity to change (U.S. Department of Health and Human Services 1996). There is evidence that the assessment of community norms regarding substance use is particularly vital to prevention planning (Fitzpatrick and Gerard 1993). Communities may reject any prevention strategy that does not fit with their current knowledge and beliefs (Oetting et al. 1995), and attitude change as a prerequisite for decreased drug use has been emphasized frequently in the research literature (Tobler 1992).

It is apparent from the extant literature that the information gleaned from a prevention-readiness assessment focusing on community attitudes could be useful in guiding decisions regarding what types of prevention services might work best for a particular community. Prevailing community attitudes and activity levels could be mapped to the Center for Substance Abuse Prevention's (1993b) six prevention strategies: information dissemination, prevention education, alternative drug-free activities, problem identification and referral, community-based process, and environmental approaches (Center for Substance Abuse Prevention 1993a). For instance, if community members were found to have relatively permissive attitudes toward substance use, some specific interventions might include information dissemination to emphasize the social harm associated with substance abuse followed by a community-based process to change community standards, codes, and attitudes. It is clear that a mechanism of facilitating the participation of communities in the identification of prevention strategies tailored to their own situation is needed. However, little work has been done in the area of community readiness assessment, and the work that exists has design limitations that render its contribution unclear.

Most of the work in the area of assessing community readiness for prevention has been conducted at the Tri-Ethnic Center for Prevention Research at Colorado State University (Oetting et al. 1995; Donnermeyer et al. 1997). This work synthesizes relevant theoretical bases in the assessment of community readiness for prevention, but administrative and methodological features of the instrument developed limit its utility to prevention planners. First, the instrument requires the use of key informants to characterize the state of knowledge and the attitudes of a particular community and to assess its existing structural capacity to implement a chosen prevention strategy. Although key informants may be quite capable of the latter, how well they can accurately assess the former is unknown. An individual informant may represent the perspectives of a vocal minority rather than the community at large. An informant may also provide responses that address a political objective, such as minimizing problems to make a community appear more desirable or overstating problems to establish the basis for new or continued funding. In

addition to its questionable validity, the use of key informants is also resource intensive. In the methodology employed by Oetting et al. (1995), face-to-face or telephone interviews need to be administered to at least four key informants per community. Because these procedures are both time-consuming (the average field length for small communities was 5 weeks) and expensive, they are probably cost prohibitive for most local prevention planners.

Another limitation of the work conducted by Oetting et al. (1995) is that their instrument was not developed or evaluated using accepted psychometric principles. Instead, the authors relied solely on qualitatively oriented reviews. Although these are necessary components of instrument development and evaluation, they are not sufficient; the authors did not evaluate the dimensionality of domains identified through this process once the instrument was fielded. Another limitation of the referenced instrument is the use of an anchored rating scale technique that allows interviewers a fair amount of discretion in scoring the responses. Last, there was no attempt to establish the external validity of the instrument, that is, to determine whether the instrument actually measured a community's readiness for change as assessed independently.

This article reports the development and evaluation of a short and inexpensively administered mail survey measuring population attitudes toward substance use and the potential receptivity of communities to different prevention efforts. The survey was designed with the ultimate goal of helping local prevention planners identify and implement strategies tailored to the needs and perceptions of their communities. The development of the Community Readiness Survey was informed by established principles of instrument design and evaluation including a review of the literature, input from a large number of prevention experts, focus groups conducted in rural and urban settings representing various ethnicities and socioeconomic backgrounds, and various analytic methods of assessing scale validity and reliability. The results of this process are presented, along with a discussion of possible future research directions.

## METHOD

### SURVEY DEVELOPMENT

The Community Readiness Survey was developed by the Minnesota Department of Human Services in partnership with Search Institute. The

mail survey was refined through an iterative process consisting of a literature review, a series of prevention practitioner and expert consultant meetings, and focus groups conducted in rural and urban settings. The initial survey consisted of 89 items representing an amalgam of domains identified by the Social Development Research Group at the University of Washington (U.S. Department of Health and Human Services 1996), as well as domains generated in the prevention practitioner and expert consultant meetings. It was hypothesized that the 89 items in the survey would reflect eight broad readiness domains: perception of an alcohol, tobacco, or other drug (ATOD) problem in the community; ownership of the ATOD problem and possible solutions; support for prevention; community efficacy; community commitment; social norms related to substance use; communication about prevention; and substance use behaviors. Each item was hypothesized to be linked to one and only one domain.

#### SAMPLE DESIGN

Community samples were drawn from five of six regions within the state of Minnesota: Northwest, Twin Cities Metro, Southwest, Southeast Urban, and West Central. The remaining region is the site of Project Northland, a well-established, community-based prevention project that served as the source of the expert rating criteria for community readiness employed in this study. (For more information on Project Northland, see Perry et al. 1996, 2000.) Two communities were selected within each region to represent one of three levels of readiness as rated by community experts. The total number of participating communities was 30 (five regions by three readiness levels by 2 communities each). A completion rate of 100 adult surveys per community was anticipated to provide a total sample size of 3,000.

#### DEFINITION OF COMMUNITY READINESS

To facilitate external validation of the Community Readiness Survey, an external measure of community readiness was needed. This measure was informed by the earlier work of Perry and Williams at the University of Minnesota School of Public Health through their experience with Project Northland (Perry et al. 1996, 2000). Project Northland staff rated communities in the Northeast region on type and intensity of prevention activities in four

areas: education, enforcement, policy, and ordinances. A variety of sources was used to achieve these ratings, including conversations with adult and youth community members and community/school leaders, observations of community meetings, social activities, community action team meetings, classroom sessions, parent forums, articles from community newspapers, and school newsletters. Then, in a series of meetings with prevention experts hosted by Search Institute, Project Northland staff outlined the four areas of prevention activity, along with descriptions of type and intensity judged as low, medium, and high activity within each area. Prevention planners were then charged with the task of identifying six communities, two at each readiness level (low, medium, high) within their respective regions.

#### DATA COLLECTION

Once the participating communities were identified, a random sample of directory-listed household addresses was purchased from Survey Sampling, Inc., of Westport, Connecticut. The Community Readiness Survey was mailed to 15,000 adult Minnesotans in 30 communities by Search Institute between September and December 1997. A prenotification postcard was sent to prospective respondents 1 week before the initial mailing of the survey. Following the Dillman (1978) method, a reminder postcard was sent to the entire sample 1 week after the initial mailing. Four weeks after the initial mailing, a second questionnaire and cover letter were sent to nonrespondents. To increase response rates, a pen incentive was enclosed with the initial mailing.

#### ANALYTICAL STRATEGY

Data analyses were conducted with three primary objectives: (a) validation of the hypothesized domains, (b) scale development and item reduction, and (c) initial validation of the scales. The validation of the hypothesized domains consisted of assessing each domain's internal consistency. Scale development and item reduction employed approaches associated with multitrait scaling, such as item-response variability, factor analytic testing, and scale internal consistency. To test for construct validity, analyses of variance (ANOVA) were conducted on means of selected scale scores using prevention planner rankings of communities as the categorical variable.

## RESULTS

### SAMPLE CHARACTERISTICS

The total number of participants in the survey was 7,151. Each of the five study regions contained between 18% and 21% of the total number of study participants and each community between 2.4% and 3.9%.

The overall response rate was 53%. Although this rate was less than ideal, it was greater than the anticipated 20% response rate, and it was not atypical when compared with other population surveys. The National Committee for Quality Assurance (NCQA), for example, considers response rates between 50% and 60% acceptable for its mixed-mode mail/telephone satisfaction surveys (NCQA 1999). Moreover, a comparison of selected respondent characteristics with similar state demographic data based on the 1997 Current Population Survey conducted by the U.S. Census demonstrated that the survey sample reflected the adult population distribution fairly well in several respects. For example, the survey respondents were 94.4% Caucasian (compared with 93.4% of the population), and 33.6% had a college degree (compared with 28.3% of the population). However, the sample composition included more males (56.4% versus 49.2% of the population) and more seniors (28% age 65 or older versus 12.4% of the population). The overrepresentation of males and seniors was unanticipated because these groups are typically underrepresented in general population surveys (Groves 1989). The proportionally large number of seniors responding to the survey may reflect their concerns about personal safety because they may feel particularly vulnerable to crime. Nonetheless, generalizations to the entire population should be made with caution.

### INTERNAL CONSISTENCY OF HYPOTHESIZED DOMAINS

In an effort to assess how well the theoretical constructs behind the scales were supported empirically, the internal consistencies of each of the domains were estimated using the Cronbach alpha coefficient (Cronbach 1951). Internal consistency is a measure of general reliability evaluating the extent to which the different items in a scale measure the same trait. The alpha coefficients for each domain originally included in the survey are presented in Table 1.

The magnitude of the coefficients points to strong ( $\alpha > .7$ ) internal consistency reliability among items in four of the eight domains and marginal reliability ( $\alpha \geq .6$ ) in another. The remaining three domains demonstrated

**TABLE 1: Internal Reliability for Each of the Hypothesized Readiness Domains**

Domain	Number of Items	Cronbach's $\alpha$
Perception of ATOD Problem	26	.85
Ownership of ATOD Problem and Solution	5	.70
Support for Prevention	19	.84
Efficacy	3	.43
Sense of Commitment to the Community	7	.60
Social Norms Toward ATOD Use	24	.85
Communication About Prevention	3	.37
ATOD Behavior	2	.11

NOTE: ATOD = alcohol, tobacco, or other drug.

unsatisfactory internal consistency with alpha coefficients below .45. As a result, further exploratory analyses oriented toward identifying appropriate domains and ineffective items were conducted.

### SCALE DEVELOPMENT

To assess the viability of presenting the Community Readiness Survey results as summated scores and to identify ineffective items, selected approaches adapted from multitrait scaling were employed (Stewart, Hays, and Ware 1992). These approaches included (a) item-response variability, (b) factor analytic testing, and (c) scale internal consistency.

*Item-response variability.* Item-response variability criterion requires rough symmetry in response distributions and standard deviations hypothesized to measure a construct (Streiner and Norman 1995). Several items failed to meet the item-response criterion and were removed during the initial stages of the analyses. Five items within the "support for prevention" domain in particular were seriously skewed toward the positive end of the distribution, with more than 80% of responders answering *agree* or *strongly agree* on policy questions regarding adolescent substance use. These items were therefore removed from further analyses.

*Factor analysis.* Principal component extraction is often the preferred method for item reduction and the identification of empirically derived domains (Nunnally and Bernstein 1994). Rigid and consistent interpretability criteria were applied to selected items after orthogonal-varimax rotation. Kim and Mueller (1978) suggest as a general rule in scale construction



to consider factor loadings less than .3 as not substantial. Similarly, Nunnally and Bernstein (1994) suggest that variables correlating highly with a factor should not correlate more than .3 with any other factor. To identify strong item clusters and consequently cohesive components, more rigorous criteria were used. Items with loadings equal to or less than .39 on any component were dropped from the survey, and items with loadings greater than .39 on any two components were similarly removed.

Ultimately, several extraction and rotation strategies were considered. The final 38-item, six-component model resulted from a principal components factor analysis with orthogonal-varimax rotation. Six to eight component models were also considered based on the amount of variance explained, initial reliability results, and observed eigenvalue levels. The six-component solution explained the most variance (52.4%) and resulted in components with high reliability. Components selected had eigenvalues greater than one and accounted for at least 4% of total variance each. The final solution did not differ greatly from the maximum-likelihood extraction models or the oblique rotation models, indicating well-defined groupings (Nunnally and Bernstein 1994). The six components identified are shown in Table 2.

Three of the components were composed of items initially hypothesized to measure the following domains: perception of an ATOD problem in the community, permissive attitudes toward ATOD use, and support for prevention. The fourth and fifth components were composed of items that were hypothesized as a subscale of the first component, thought to measure perceptions as to the ease with which adolescents can obtain alcohol or tobacco within the community. The loadings were quite strong ( $> .6$ ) for all items in these two components; however, the correlation between them was fairly low though still significant ( $r = .198, p < .01$ ). Despite the empirical results, the similarity of the item content in the fourth and fifth components combined with their significant correlation led us to consider them as one latent construct representing perception of adolescent access to alcohol and tobacco. The sixth component, composed of items measuring respondents' perceptions of their community's commitment to dealing with ATOD problems, consisted of two items with loadings greater than .80 and explained 4.0% of the variance. The final principal components solution was, as expected, very reflective of the initial reliability results.

*Scale internal consistency.* Cronbach's alpha was calculated to demonstrate the cohesiveness of items in each extracted component. All six components demonstrated high internal consistency, with alpha scores exceeding the acceptable level of .70. The combination of the fourth and fifth components into one measure—Perception of Adolescent Access—resulted in an

**TABLE 2: Principal Component Analysis: Orthogonal-Varimax Rotation**

	Perception of ATOD Problem in Community	Support for Prevention	Permissive Attitudes Toward Teen Use	Perception of Adolescent Access #1	Perception of Adolescent Access #2	Perception of Community Commitment
Marijuana use by teenagers	.787	.009	-.025	.007	.036	.026
Other drug use by teenagers	.778	-.026	-.017	-.011	.037	.053
Other drug use by adults	.771	-.034	-.008	-.034	.045	.014
Marijuana use by adults	.767	.007	-.056	-.036	.060	-.030
Alcohol use by teenagers	.744	.101	-.140	.042	-.002	-.008
Alcohol use by adults	.686	.149	-.160	-.007	.058	-.092
Tobacco use by teenagers	.671	.192	-.112	.009	.008	-.035
Extent use contributes to crashes	.663	.133	-.063	.095	-.076	-.008
Extent use contributes to crime	.643	.044	-.011	.076	-.100	.053
Often see teens smoking in public	.585	.156	-.012	.080	-.048	-.135
Problem tobacco use by adults	.571	.259	-.147	-.024	.058	-.093
Often see someone drunk in public	.515	.058	.079	.004	.033	-.229
Alcohol/drug prevention programs good	.026	.721	-.050	.002	-.001	.073
Community set up prevention programs	.129	.651	-.003	-.018	.072	.041
Possible-reduce problems through prevention	.030	.635	-.049	.021	-.052	.065
Willingness to pay increase in tobacco tax	.137	.574	-.233	.126	-.124	.011
Tobacco advertising should be banned	.108	.573	-.253	.025	.086	-.026
Schools need to be more active	.085	.564	-.041	.000	.048	-.072
Public service announcements change attitudes	.014	.561	-.023	-.091	.092	.101
Willing to pay increase in alcohol tax	.186	.533	-.289	.104	-.092	-.024
More law enforcement-tobacco sales	.108	.497	-.296	-.052	.116	-.107
OK for teens to drink at party	-.128	-.134	.795	.049	.054	-.050

(continued)

TABLE 2 Continued

	<i>Perception of ATOD Problem in Community</i>	<i>Support for Prevention</i>	<i>Permissive Attitudes Toward Teen Use</i>	<i>Perception of Adolescent Access #1</i>	<i>Perception of Adolescent Access #2</i>	<i>Perception of Community Commitment</i>
OK teens drink if don't drive	-.110	-.124	<b>.794</b>	.045	.044	-.058
Parents tell teens to drink with them	.013	-.033	<b>.660</b>	-.074	-.009	.001
OK parents to offer their teens alcohol	-.054	-.145	<b>.593</b>	.075	-.105	.055
OK for teens to smoke cigarettes	-.086	-.298	<b>.586</b>	.015	.076	-.062
Tell teens to use alcohol carefully	.042	.018	<b>.561</b>	-.152	.061	-.035
Kids who experiment grow out of it	-.153	-.205	<b>.483</b>	.052	-.071	-.002
Difficult to sneak tobacco from home	.040	.008	-.018	<b>.848</b>	.017	.000
Difficult to get adult to buy tobacco	.062	.015	.002	<b>.822</b>	.145	-.026
Difficult to sneak alcohol from home	-.010	-.007	-.009	<b>.795</b>	.021	.018
Difficult to get adult to buy alcohol	.058	.018	-.004	<b>.774</b>	.172	-.043
Difficult to order a drink in a bar	-.020	.057	.004	-.107	<b>.874</b>	-.046
Difficult to purchase alcohol in a store	.020	.029	-.003	.060	<b>.840</b>	-.026
Difficult to get parents to give alcohol	-.005	.040	.014	.154	<b>.697</b>	-.036
Difficult to purchase tobacco in store	.054	.024	.011	.297	<b>.652</b>	-.028
My community not interested in changing	-.130	.062	-.036	-.028	-.060	<b>.879</b>
No sense of commitment in my community	-.117	.073	-.064	-.018	-.066	<b>.871</b>

NOTE: ATOD = alcohol, tobacco, or other drug. The factor loadings for the items that comprise the scale identified by the column heading are presented in boldface type.

alpha of .77; this high level of internal consistency supports their combination into a single scale (see Table 3).

#### SCALE SCORING

Prior to calculation of scale scores, two items with high levels of missing data (>10%) were removed from the analysis. One of those items was "How

TABLE 3: Scale Reliability

<i>Scale</i>	<i>Number of Items</i>	<i>Cronbach's <math>\alpha</math></i>
Perception of ATOD Problem	12	.90
Support for Prevention	9	.79
Permissive Attitudes Toward Teen Use	7	.78
Perception of Adolescent Access	8	.77
Perception of Community Commitment	2	.80

NOTE: ATOD = alcohol, tobacco, or other drug.

difficult do you think it is for adults to buy illegal drugs in your community?" Respondents were not given the option of a "don't know" response, so the high number of missing answers for this particular question, relative to the low number of missing answers on other items, likely represents a lack of knowledge on the part of the respondent. Lack of knowledge may also account for the relatively high levels of missing data for the other deleted item, "How difficult do you think it is for adolescents to get parents to give them tobacco?" However, because the level of missing answers for a comparable item regarding parental provision of alcohol to adolescents was lower (5%), it is not entirely clear why the missing data levels were so high for the tobacco item. Once these items were removed, no single item in the factor analysis had a percentage of missing cases higher than 10%, with most in the range of 4% to 7%.

For all correlation contingent analyses, missing data were handled through pair-wise deletion of cases. For the final factorial model, mean substitution and list-wise deletion of cases with missing values resulted in similar six-component models with no change in component loading and little change in the coefficients. Scale scores were assessed only for those individuals with valid answers for all scale items. Various mean substitution schemes were also attempted for scale sums with little change in the overall distribution. The components were scaled by a simple no-weighted sum of their constituent items. Appropriate items were reverse coded to maintain unidirectionality in scores in which higher scores connote higher levels of the relevant domain.

A correlation matrix of the five scales revealed that the strongest relationship observed was the negative correlation between Permissive Attitudes Toward Teen Use and Support for Prevention ( $-.433, p < .01$ ). Fairly high negative correlations were also seen between Perception of ATOD Problem and Permissive Attitudes ( $-.213, p < .01$ ), Perception of ATOD Problem and Perception of Community Commitment ( $-.168, p < .01$ ), and Perception of

Community Commitment and Perception of Adolescent Access ( $-.114$ ,  $p < .01$ ). The strongest positive correlation was between Perception of ATOD Problem and Support for Prevention ( $.296$ ,  $p < .01$ ). None of the other intercomponent correlations exceeded  $.09$ .

#### VALIDATION OF SCALES

This next step attempted to provide evidence of the most difficult type of validity to obtain: construct validity, the extent to which survey results correspond to an external measure of community readiness. Table 4 shows the mean scale scores for the three groups of 10 communities rated high, medium, or low by local prevention practitioners. We hypothesized that Perception of Community Commitment and Support for Prevention scale scores would be positively related to community readiness ratings and that the remaining scales would be inversely related. ANOVAs were conducted on mean scale scores by community readiness rating to determine which scales discriminated among the three community groups.

The results of these analyses provide partial support for our hypothesis. The Perception of Community Commitment scale demonstrated the highest discriminative capabilities between "high-readiness" and "low-readiness" communities, in the expected direction, with the "medium-readiness" communities falling in between. The Support for Prevention component showed a similar linear pattern. Although the scores for the remaining scales were lower in the high-readiness community group than in the low-readiness community group as hypothesized, these differences were not statistically significant. Furthermore, the pattern across all three community groups was not linear; for each of these three scales, medium-readiness communities had the highest score.

#### DISCUSSION

The National Center for the Advancement of Prevention suggests that a useful first step in the process of community readiness assessment is to "conduct field tests of readiness assessment measures and methods to develop and refine reliable and valid instruments and procedures" (U.S. Department of Health and Human Services 1996, 43). Yet, few such investigations have been conducted, and the work done to date has a stronger theoretical than empirical foundation. The purpose of this investigation was to develop a valid and reliable instrument measuring the different theoretical domains of

**TABLE 4: Mean Scale Scores by Prevention Practitioner Rating of Community Readiness**

Scale	Rating of Community Readiness			High- Low <sup>a</sup>	p Value
	High	Medium	Low		
Perception of Community Commitment	7.02	6.68	6.63	0.39	<.001
Support for Prevention	34.65	34.39	34.16	0.49	.026
Permissive Attitudes Toward Teen Use	10.94	11.21	11.14	-0.20	.200
Perception of ATOD Problems	33.40	34.04	33.56	-0.16	.744
Perception of Adolescent Access	26.55	26.81	26.75	-0.20	.515

NOTE: ATOD = alcohol, tobacco, or other drug.

a. All tests were conducted with ANOVA, *F* test (high versus low).

readiness that could be inexpensively administered by prevention planners interested in assessing community attitudes and knowledge relevant to prevention planning.

The Community Readiness Survey development was successful in many respects. A strong collaborative effort involving academic and community experts produced an initial survey draft of reasonable length with a sufficient mix of items to address potentially important domains. Helpful feedback was also provided through a series of extensive pretests with representative focus groups. Internal validity analysis provided empirical support for some of the theoretical domains originally hypothesized and identified new domains representing amalgams of the initial domains. Scale development also more than halved the number of items in the survey, yielding a briefer survey that might increase response rates in future administrations. Scale reliability was demonstrated by high levels of internal consistency, and construct validity was demonstrated by the relationships between selected scale scores and community readiness as evaluated by prevention planners.

The final survey included five distinct domains, a smaller number than originally hypothesized and organized somewhat differently. The nature of these domains and their interrelationships are intriguing. Three domains measure respondents' perceptions of their external community: the level of existing substance use problems, the ease with which teens can obtain tobacco and alcohol, and the sense of community and commitment to change. The other two domains measure respondents' personal beliefs and attitudes: their attitudes toward teen use of tobacco and alcohol and their personal support for prevention activities.

More permissive attitudes toward teen substance use were associated with lower perceptions of substance use as a problem and lower support for prevention activities. Lower perceptions of substance use as a problem were also associated with lower support for prevention activities. Communities with relatively greater permissiveness toward substance use and lesser awareness of substance use as a problem would likely benefit from efforts that educated community residents about the specific harmful effects associated with teen substance use, including damage to their own physical and psychological health, risks to the greater community (in terms of drunk driving and medical costs associated with smoking), and the greater risk of addiction associated with early onset of substance use. Increasing awareness of these links may increase support for prevention activities, clearly an objective of local prevention practitioners.

Both the Community Commitment scale and the Support for Prevention scale aligned well with local prevention practitioner ratings of community readiness. These results suggest that the Community Readiness Survey successfully measured something that local experts believed to be critical in distinguishing one community from another with respect to how responsive they might be to prevention efforts.

The utility of other survey findings is not clear. For instance, the significant relationship between the perception of the substance use problem and the perception of community commitment does not offer guidance in terms of a community intervention. However, if it can be determined that residents believe that lack of community commitment contributes to the severity of the substance use problem, they may be willing to engage in activities that foster community connectedness. The Perception of Teen Access scale, although strong empirically, appears to be of questionable utility. Its relationships with other survey scales are relatively weak, and the differences between community groups clustered according to their readiness level were smallest on this scale's scores. The weakness of this scale may reside in its item content. Questions ask respondents to rate the difficulty of teens obtaining tobacco and alcohol in their homes, getting adults to purchase for them, or purchasing these products themselves. These questions require some familiarity with teens in the community, which many residents may lack, and they call for generalizations when individual differences may be pronounced.

The inconsistent correlations between the scale scores and the chosen external measure of prevention readiness may be due to the use of community prevention planners as the source of the information used to define the external measure. In assigning communities to the three levels of readiness, prevention planners were really acting as key informants. As stated in the introduction, although key informants may be quite capable of assessing a

community's existing structural capacity to implement a chosen prevention strategy, they may not be able to characterize the state of knowledge and the attitudes of a particular community's residents. An individual informant may represent the perspectives of a vocal minority rather than the community at large. The external measure may reflect programs already in existence and may have little to do with popular sentiment because a large fraction of programs result from the actions of a small number of active individuals and stakeholder groups that may have little to do with the mass of the public.

The investigation described in this report was preliminary and more work is required. Although these initial results are encouraging, construct validation requires a pattern of consistent findings involving different researchers using different theoretical structures across a number of different studies (Carmines and Zeller 1979). Further research could further the investigation of external validity using techniques such as comparing perception of substance use against, for example, a student survey of substance use prevalence and access to tobacco and alcohol. However, it is not clear whether the actual problem rates or the perception of the severity of the problem is more important in mobilizing individuals to take action.

The survey developed in the current study might also be useful eventually in evaluating the effects of an implemented prevention program. For example, because of its ease of administration, prevention planners could conduct a survey prior to and subsequent to program implementation to compare baseline and posttest measures. However, because the current study did not assess the Community Readiness Survey's responsiveness to change, its sensitivity as a change measure is unknown. Further research would be useful to address this issue.

In addition to its potential utility as an evaluative tool, future research should attempt to apply scales similar to those described herein to other problems a community can face. Examples of such problems include health and nutrition, public safety, the environment, various social problems, and local economic development (Donnermeyer et al. 1997). An understanding of a selected community's prevailing attitudes and knowledge could prove useful in these areas as well.

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