Underage Rural Drinking: Survey Data and Implications for Educators

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This article reports data collected in a rural Texas county that explores the beliefs and perceptions of youth about alcohol use. Results from the study suggest high rates of underage drinking and present significant health risks. The data also shed some light on how youth perceive parents, responsibilities, access, and prevention strategies with regard to alcohol usage. Implications for rural educators and health care providers are discussed in light of the findings, with an emphasis on both prevention and intervention.

Large-scale epidemiological studies/surveys of current alcoholism rates in the US have involved various approaches to studying abuse and dependence across different subsets of the US population, including youth. Variations in these approaches to understanding alcoholism have included focusing on differences in ethnic groups (Grant et al., 2004), personality and cognitive differences (Finn, Mazas, Justus, & Steinmetz, 2002; Giancola & Moss, 1998), and even neurochemical perspectives (Moselhy, Georgiou, & Kahn, 2001). In an effort to contribute to this knowledge base, this study focuses on better understanding the relation between underage drinking and rural youth, and reports data collected in a rural Texas county that explores the beliefs and perceptions of youth about alcohol use.

Underage drinking appears to occur frequently in the US. According to the findings from the 2002-2006 National Survey on Drug Use and Health (Pemberton, Colliver, Robbins, & Groerer, 2008), approximately 10.8 million persons aged 12 to 20 (28.3 percent of this age group) reported drinking alcohol in the past month. Approximately 19 percent (7.2 million) were binge drinkers (five or more drinks on one occasion), and 6.2 percent (2.4 million) reported heavy drinking, defined as binge drinking on at least five days in the past 30 days.

Although the alcohol use of rural youth has been less well studied than urban and suburban youth, a growing body of literature has documented various significant findings. For example, 19.8 percent of underage persons in rural counties reported current binge drinking, compared with 17.7 and 20.8 percent of those who lived in counties in large metropolitan areas (population of 1 million or more) and small metropolitan areas (population of less than 1 million), respectively (Pemberton, et al., 2008). Furthermore, in a study of rural youth in West Virginia conducted by Guo et al. (2005), alcohol use was reported by 49 percent of the 12-16 year old respondents. Other studies have reported rural adolescent alcohol use to be two to three times greater than national estimates (Botvin, Malgady, Griffin, Scheier, & Epstein, 1998). These findings provide evidence of the need for further investigation into the frequency and severity of alcohol use among youth in rural areas.

Underage drinking presents a serious health concern, necessitating effective interventions to reduce youth consumption of alcohol. A review by Zeigler et al. (2005) documented the risks of neurotoxicity and harmful cognitive effects of early alcohol use, including disruption of learning and memory, specific functional neurological deficits (e.g., problem-solving, abstract reasoning, perceptual-motor skills, etc.), and long-term neurodegeneration. Furthermore, earlier age of onset of alcohol use is associated with a greater likelihood of adult alcohol abuse (Grant & Dawson, 1997; Hingson, Heeren, & Winter, 2006; Pitkanen, Lyra, & Pulkkinen, 2005). Underage drinking may be associated with earlier initiation of sexual behavior, which places youth at risk of unintended pregnancy and contraction of sexually transmitted diseases (Stueve & O’Donnell, 2005). Driving under the influence of alcohol also poses serious health risks. The results from the 2007 National Survey on Drug Use and Health: National Findings indicated 7.8 percent of 16 or 17 year olds and 18.3 percent of those 18 to 20 years old reported driving under the influence of alcohol in the past year (Substance Abuse and Mental Health Services Administration, 2008).

Research shows that adolescents who initiated alcohol use before the age of 13 are more likely to display delinquent behaviors and report school performance problems (Peleg-Oren et al. 2009). Furthermore, Paschall, Grube, and Kyrpri (2009) showed that the degree of alcohol advertising control is inversely related to having a first drink by age 13 as well as with heavy drinking in the past 30-days, suggesting that adolescents under the age of 13 need to be included in surveys and more efforts need to be directed towards preventive programs early primary and secondary schools.
Previous work indicates reasons for abstaining from alcohol use vary by gender, age, country drinking norms and patterns (Bernards et al., 2009), and social norms (Ward & Gryczynski, 2009), with peer substance use and parental knowledge as mediating factors for drinking behaviors (Wang et al., 2009).

Given that underage drinking persists despite efforts to intervene, perhaps gathering specific data directly from youth regarding their opinions toward alcohol and the reasons they consume alcohol may help identify ways to decrease alcohol consumption by minors. With that in mind, the purpose of this study was to gather information from rural youth with regard to their behaviors, frequency of use and perceptions related to alcohol consumption. It is hoped this information will further contribute to the general body of knowledge of rural youth alcohol use, ultimately resulting in more efficacious interventions for lessening the occurrence of rural underage drinking and, thereby, decreasing the frequency of the health-related problems associated with such behaviors.

Method

This quantitative study used survey research to investigate underage alcohol use among high school seniors aged 18 and 19 years in a single rural county in central Texas. The county has a population of approximately 36,000 and covers approximately 550 square miles. The population density is roughly 60 people per square mile. Twenty-eight percent of the population is under age 18, and 8.5% of the population is between the ages of 18-24. Over 19% of the residents under age 18 live in poverty. Approximately 726 of the 36,000 residents are aged 18 or 19 years, meaning that this group constitutes approximately 2% of the overall population (United States Census Bureau, 2008). The largest towns in the county have populations of 13,523 and 5,418. Over 265,000 acres in the county are used for farmland. The ethnic/racial composition of the county is mixed, with approximately 8.5% Black or African American, 40.4% Hispanic, and 49.5% White non-Hispanic (numbers total greater than 100% because some individuals report more than one category). The three school districts of the county serve approximately 6,500 students.

Participants

The principal investigators recruited subjects from the two largest high schools in the rural county described above. The sample was limited to students aged eighteen and older because they could legally consent to participate independently in this study and had more years of school experience than younger students.

Instrument

A modified Youth Questionnaire on Underage Drinking (National Highway Traffic Safety Administration [NHTSA], 2001) was adapted to an anonymous Internet-based survey. Developed by the National Highway Traffic Safety Administration (NHTSA) in 2001, the Youth Questionnaire on Underage Drinking is an integral part of the data collection process proposed in the “Community How To Guide on Underage Drinking Prevention,” a guide that serves as a resource for communities attempting to assess underage drinking in their respective areas. Though no reliability or validity data on this questionnaire could be found, the NHTSA created and offered this questionnaire to communities throughout the country in an effort to generate effective community-based interventions designed to lessen alcohol-related traffic accidents caused by teens. The questionnaire seeks information on the demographics of its respondents, as well as their use of alcohol (frequency, severity, age of first use, etc.), parent behaviors/attitudes toward underage drinking (e.g., whether respondents’ parents allow underage drinking in the home), frequency of underage drinking by peers and by the community as a whole, and respondents’ perceptions/opinions of underage drinking (i.e., whether they see it as a problem).

For purposes of this study, the questionnaire was altered to fit the needs of both the community and the researchers. Specifically, questions were added/altered to acquire information on specific aspects of alcohol consumption. For example, instead of simply asking whether respondents’ parents allowed them to drink at home, the adjusted questionnaire included a question pertaining to the context of at-home drinking allowed by parents (e.g., under supervision only, on special occasions only, or anytime). The researchers also considered it important to assess why and when respondents consumed alcohol, leading to the creation of a question assessing this component. Finally, the original questionnaire was modified to make the questions easier to understand (e.g., changed “primary source” to “main place”) and to increase the likelihood of response (e.g., asked respondents for their zip code rather for “where you live”).

Although the self-report questionnaire is the most commonly used method of assessing health-risk behaviors, it is not without shortcomings (Brener, Billy, & Grady, 2003). In their review of the literature regarding adolescent self-reporting of health-risk behaviors, Brener, et al. noted that many factors affect the validity of self-report measures, including: difficulty with recall, failure to report due to the sensitive nature of the behavior, and under/over reporting due to perceptions of social desirability. They noted that the length of recall time is inversely related to accuracy of reporting, and that unreliable reporting can also be attributed to questions that are difficult to understand. Simply stated, “the quality of responses can be improved by using...
strategies designed to enhance recall, such as relatively short reference periods, and simple language” (p. 438).

We addressed some of these methodological concerns by modifying the Youth Questionnaire on Underage Drinking (NHTSA, 2001), such that the self-report recall periods were limited to the two months prior to the administration of the survey, and the questions were written to be increase comprehension. Furthermore, because many retrospective reports on alcohol usage do not take into account the context within which alcohol usage occurs, this Youth Questionnaire on Underage Drinking was modified to consider first time usage and regular usage in the contexts of religious ceremonies, landmark ceremonies, with families, and with friends.

Procedures

For this study, school counselors provided the survey website address to potential participants at various class times. Once students logged on to the site, they had an opportunity to read about the research and decide whether they wished to voluntarily proceed with the questionnaire. School counselors were encouraged to make the survey website available to students after their 18th birthday, but no incentives were provided. The research was approved by the principal investigators’ Institutional Review Board.

Once the surveys were completed, the investigators used SPSS to analyze the data. Some surveys were incomplete and could not be used. The total number of usable surveys was 38 (Female N=20, Male N=18). The small sample size was expected, given the sparse population in the rural county that was studied, as well as the lack of student access to technology, often characteristic of rural living. Furthermore, the researchers limited the overall potential sample size by electing to collect data only from 18 and 19 year old subjects in high school. Although the sample size is small, it represents over five percent of the total population of 18 and 19 year old persons in the county. This representation is further strengthened by the data on ethnicity, showing that 42% identified themselves as Hispanic and 44% identified as White. With these facts in mind, the data yielded some intriguing findings that are of interest to mental health and medical practitioners serving rural, adolescent populations.

Findings

The following self-report data are summarized in the tables below, and include respondents’ experience with alcohol, consequences of alcohol usage, reasons for alcohol use, perceptions of why their peers use alcohol, experience with alcohol, and consequences of alcohol

Experience with Alcohol

The vast majority of the participants reported previous alcohol consumption (80% of female and 94% of male respondents). The average age at which participants reported first use was 15.19 years for females and 14.41 years for males. Overall, 85% of participants reported first consuming alcohol between the ages of 14 and 17. Moreover, participants reported incidents of consuming relatively large quantities of alcohol: 50% of females and 76% of males (64% of all participants) reported that they have had five or more drinks at a time. Of these, almost half (46%) reported consuming five or more drinks within the past 30 days (see Table 1).

Consequences of Alcohol Use

Respondents were asked a series of questions regarding the consequences of their consumption of alcohol (also summarized in Table 1); they were told to check all applicable responses.

Table 1

| Self-reported Experiences and Consequences of Alcohol Usage | Percentage of Affirmative Respondents |
|-----------------------------------------------------------|---------------------------------------|
| Have previously consumed alcohol                          | 87%                                   |
| Have had 5 or more drinks at one time                     | 63%                                   |
| Have had 5 or more drinks in the last 30 days             | 46%                                   |
| Have been drunk at a party                               | 76%                                   |
| Have missed school because they drank too much            | 24%                                   |
| Have driven under the influence                           | 39%                                   |
| Have been a passenger in a vehicle in which the driver was under the influence | 64%                                   |
| Have had an injury due to using alcohol                   | 21%                                   |
| Have done poorly in school due to use of alcohol          | 20%                                   |

These questions revealed that 76% of respondents had been drunk at a party and 24% had missed school because they drank too much. Sixty-four percent of participants had been a passenger in a vehicle in which the driver was under
the influence of alcohol, while 39% had driven under the influence. These results are particularly staggering considering 95% of participants rated drinking and driving among youth as a problem. Over half of participants responded that they have either used alcohol at school or been drunk at school, and nearly 20% reported that have done poorly in school due to their use of alcohol. Two of the 33 respondents reported being arrested because of alcohol use. Finally, 21% of participants reported having experienced an injury due to using alcohol.

**Individuals' Reasons for Alcohol Use**

Table 2 contains the data regarding reasons for drinking. When asked why they drink alcohol (and instructed to check all responses that apply), 79% of respondents reported they drink because they want to have a good time at a party. Twenty five percent of respondents reported boredom as their reason for drinking alcohol, while just over 5% of participants cited wanting to fit in or be accepted by friends or peers as their reason for drinking alcohol. Fifteen percent of respondents reported that they drink alcohol because they are sad or depressed and want to feel better about themselves. Thirty percent of participants marked “other” and listed additional reasons for using alcohol, such as “because I can,” “because I enjoy it,” “because I like the way beer tastes,” “I was curious,” “just to taste it,” “to get drunk,” and “because it is a special occasion.”

| Reasons for Drinking                                      | Percentage of Affirmative Respondents |
|-----------------------------------------------------------|---------------------------------------|
| Drink because they want to have a good time at a party    | 79%                                   |
| Drink out of boredom                                      | 25%                                   |
| Drink because they want to fit in or be accepted by friends or peers | 5%                                   |
| Drink because they are sad or depressed                    | 15%                                   |

**Youth Perceptions of Why Peers Drink**

In addition to being asked why they drink alcohol, participants were also asked why they think most people their age drink alcohol (Table 3). One hundred percent of respondents reported that they thought people their age drink because they want to have a good time at a party. Eighty two percent of participants believe that others their age drink because they want to fit in or be accepted by their friends or peers; contrast this response to the much smaller 5% of participants who cited this as their reason for drinking alcohol. Sixty-one percent of participants reported that others their age drink because they want to oppose their parents, teachers or other adults, while another 61% believe their peers drink because they are bored.

| Perception of Peer Drinking                          | Percentage of Affirmative Respondents |
|------------------------------------------------------|---------------------------------------|
| People their age drink because they want to have a good time at a party | 100%                                  |
| Consider drinking and driving among youth as a problem | 95%                                   |
| People their age drink because they want to fit in   | 82%                                   |
| People their age drink because they want to oppose their parents or other adults | 61%                                   |
| People their age drink out of boredom                | 61%                                   |

**Perceptions of Who and What Contribute to Underage Alcohol Use**

Respondents were asked to check all responses that apply in regard to who is/are responsible for contributing to the problem of alcohol use by underage youth (see Table 4). Eighty-two percent of participants reported that youth themselves are responsible for underage alcohol consumption, while 58% of participants cited parents as responsible. Sixty-four percent of respondents claimed that advertisements are responsible, and nearly 40% responded that alcohol outlets such as liquor stores and bars are responsible for underage drinking. An additional quarter of participants responded that public agencies are responsible for underage alcohol consumption.
Advertisements

Adolescents’ Attitudes by Alcohol-free peers drinking Liquor consumption There are underage drinkers.

There is a hundred percent drive not to allow alcohol consumption.

Table 4
Reported Factors that Contribute to Underage Drinking

| Perception of Contributing Factors/Entities                                      | Percentage of Affirmative Respondents |
|---------------------------------------------------------------------------------|----------------------------------------|
| Youths themselves are responsible for underage alcohol consumption              | 82%                                    |
| Parents are responsible for underage alcohol consumption                        | 58%                                    |
| Advertisements are responsible for underage alcohol consumption                 | 64%                                    |
| Liquor stores and bars are responsible for underage drinking                    | 40%                                    |
| Reported the main place their peers get alcohol is from peers or relatives      | 91%                                    |
| Alcohol-free teen night clubs would lessen alcohol use by youth                 | 55%                                    |

What Might Reduce Underage Alcohol Consumption?

When asked what they thought would best help lessen alcohol use by youth, 55% of respondents believed that alcohol-free teen night clubs would be helpful. Fifty percent of participants reported that youth who drink alcohol and drive should have their drivers’ licenses suspended. One hundred percent of participants reported that some sort of educational program should be put in place, such as alcohol education in schools, on TV, on the radio, or in magazines. Additionally, a portion of these respondents believed that education should be in the form of presentations by people who drank too much in their youth. Twenty eight percent of participants reported that there should be increased law enforcement and 36% reported that new and tougher penalties should be put in place to help lessen alcohol use by youth. Finally, nearly 20% of respondents reported that there should be a ban on alcohol advertisements (Table 5).

Table 5
Adolescents’ Attitudes Regarding Consequences and Prevention

| Justifiable Consequences for Underage Drinking                                      | Percentage of Affirmative Respondents |
|-----------------------------------------------------------------------------------|---------------------------------------|
| Drinking alcohol and driving should result in having their drivers’ license suspended | 50%                                   |
| An educational program should be put in place to reduce underage alcohol consumption | 100%                                  |
| There should be increased law enforcement for underage drinking                    | 28%                                   |
| New and tougher penalties should be put in place to lessen alcohol use by youth    | 36%                                   |
| There should be a ban on alcohol advertisements                                     | 20%                                   |

Parental Attitudes

The data also included respondents’ perceptions and experiences of their parents’ use and acceptance of alcohol in the home (see Table 6). For example, over one third (34%) reported that their parents allow them to use alcohol at home, with a third of those saying that they are allowed to drink alcohol in their home whenever they want. It is interesting to note that 75% of participants know parents who let other people’s kids drink in their home, although these data provide no indication of how many parents this actually constitutes. Forty percent of participants also reported that their parents do not know how much they drink, meaning, of course, that 60% of the participants reported that their parents knew exactly how much they drink. This is supported by the data showing that the same number of respondents (60%) reported that their parents have seen them drink, while 57% stated that they discuss alcohol use with their parents.
Adolescents’ Perceptions of their Alcohol Use

Table 7 summarizes responses about participants’ perceptions of the problematic nature of their own alcohol use (e.g., My use of alcohol is (1) not at all a problem, (2) a small problem, (3) a serious problem). Interestingly, 90% of respondents did not consider their own alcohol use to be a problem. This is in stark contrast to the data showing that of the 67% of respondents have had five or more drinks at a single time, 46% who reported consuming that amount in the past month. Furthermore, half (50%) reported that their alcohol use has not changed (i.e., has neither lessened nor increased) in the past year, which appears logically related to participants’ opinions that their use is not a problem.

Table 7
Adolescents’ Perceptions of their Use of Alcohol

| Own Use                                                                 | Percentage of Affirmative Respondents |
|------------------------------------------------------------------------|---------------------------------------|
| Said their alcohol use has not changed in the past year                | 50%                                   |
| Do not consider their own alcohol use a problem                        | 90%                                   |
| Have been offered alcohol at least once in the month preceding the survey | 75%                                   |
| Use false identification to get alcohol                               | 13%                                   |

How do Adolescents Obtain Alcohol?

Participants were asked to choose only one answer in response to the question, “What is the main place people under the age of 21 get alcohol?” Ninety one percent of respondents reported that the main source from which their peers obtain alcohol is friends and/or relatives. Other responses included parent’s home, liquor stores, bars/restaurants, and grocery/convenience stores. Since only 13% of the study respondents reported using false identification (i.e., a “fake i.d.”) to obtain alcohol, and less than 20% have ever purchased alcohol without showing identification, it appears that the vast majority of respondents are being offered alcohol by someone they know. Considering the results of parental-informed drinking and drinking in the home, perhaps these adolescents are being provided alcohol by their parents or a family member living in the home.

Several significant correlations emerged in the data analysis. Age of first alcohol consumption was negatively correlated (using Pearson’s r) with current drinking frequency (r = -.433, p<.05), suggesting that there may be a moderate association with early onset and heavy drinking. Current frequency of drinking was positively correlated with heavy (five or more drinks at a time) drinking in the past month (r = .718, p<.001), which may indicate that heavy drinking is not an isolated event, but rather a pattern of behavior. Perceived severity of the problem of underage drinking was negatively correlated with age of first alcohol consumption (r = -.678, p<.001). Those who start drinking alcohol early tended to report that they did not perceive underage drinking as a serious problem.

Discussion

Results from this study support previous research indicating concerns regarding underage drinking in rural populations (Drixler, Krahn, & Wood, 2001). These current figures are higher than those found in the existing literature (Epstein, Botvin, & Sproth, 2003) and suggest that mid-adolescence appears to be a significant period during which many rural youth consume their first alcoholic drink.

Given the alarming prevalence of underage drinking, those working to prevent underage drinking in rural communities can use the results of the present study to plan and implement programs. For example, knowing...
that participants reported that they started drinking between 14-15 years of age suggests that educational programs that address the risks associated with alcohol consumption should begin well before the high school years. Further supporting the need for early intervention, the present study suggests that those who start drinking at an earlier age may drink more heavily than their peers who start later. Furthermore, educational and intervention programs designed to lessen underage drinking should consider that while most youths believe that it is a problem among their peers, they do not consider themselves as part of the problem.

More than half of the participants in the present study implicated parents as responsible parties contributing to the problem of underage drinking. Students also reported that they drink to violate parents’ rules. Based on these data, educators should include families in efforts to prevent and treat underage drinking problems. Regardless of approach, efforts to address the problem without incorporating all relevant systems may be shortsighted and have a limited impact.

Given that the vast majority of participants reported that teens drink to fit it socially, psychoeducational interventions such as guidance counseling should address alternative ways for rural youth to achieve their social goals. Opportunities for recreation and social engagement may be relatively limited in rural areas, and so the provision of alcohol-free activities may be an effective strategy for prevention. Coupled with the development of adaptive decision-making skills, these approaches may have great promise for minors with limited social venues often characteristic of rural settings.

Limitations

We acknowledge a number of limitations with the present study. First, our small sample size limits the degree to which the results can be generalized to the population of interest. Although the sample size of this study constituted approximately five percent of the total 18 to 19-year-old population in the county studied, larger samples are needed. We also recognize that our sample lacked cultural diversity, although it did reflect the composition of the county. Finally, the fact that the present study included only those students who were 18 or 19 years of age prohibited us from gathering greater information on drinking behaviors, perceptions and attitudes of younger adolescents. Gaining a better understanding of the issues related to and involving diversity and underage drinking is needed. Finally, more information is required to understand underage drinkers who have a desire to stop drinking, but may not have access to the resources to do so. This, unfortunately, was not included in the scope of the current study.

Recommendations for Rural Educators

The data collected in this study demonstrate that, at least in the population sampled, many underage rural students consume alcohol to the extent that poses serious risks to student health and safety. If the students surveyed in this study are representative of rural youth in other parts of the country, then many communities face similar challenges to develop prevention and intervention programs to address this concern. Below, we provide some specific recommendations for rural educators.

Most students in this study reported that their parents are aware of their alcohol use. Rural educators are encouraged to partner with families to establish shared goals and shared responsibilities for outcomes. Over half of the students surveyed reported that parents bear some responsibility for the problem of underage drinking. Therefore, it stands to reason that if students view parents as part of the problem, educators must collaborate with parents to develop solutions. This may take the form of Parent Teacher Association meetings dedicated to the subject of alcohol abuse, or psychoeducational workshops for families provided by school counselors. Schools and families may also work together to provide alcohol-free social opportunities for students (e.g., dances, recreational events, etc.). Some of the results from the present study could be summarized in a parent-friendly format to help communicate to families the degree to which underage drinking has become a concern in rural communities. Schools may encourage parents to use the information as a starting point for discussions about alcohol use with their children.

Many students reported that they drink heavily, and that their use of alcohol is not a problem. This suggests that rural adolescent youth and to a large extent parents and community members view heavy drinking as part of the culture. Rural educators may also play a role in developing cultural norms or standards regarding alcohol use. For example, through student advising and prevention program, teachers and counselors can use the data presented here to demonstrate that though some students drink to fit in socially, there are many ways to be popular and successful without consuming alcohol. Moreover, using alcohol to gain popularity may have long-term, negative consequences (e.g., addiction) that may interfere with social relationships. Prevention may also be addressed through counselors’ guidance lessons in the classroom.

Conclusion

Ultimately, the problem of underage alcohol use in rural communities will not be solved with short-term, isolated interventions. Rather, schools and communities
must develop comprehensive plans that utilize family-school partnerships to addressing the culture of alcohol consumption. Moreover, efforts must be made to provide desirable alternatives for adolescents.

These findings support for the need to develop more specific curricula focused exclusively on early adolescents, especially those in middle/junior high school. Furthermore, the present study helps shed light on rural adolescents’ perceptions regarding underage drinking and the degree to which they consider alcohol use and abuse problematic. These data have important implications for the prevention and treatment of alcohol abuse in rural, underage populations and suggest directions for future research. As the findings of this study are limited to a small sample of youth in one specific rural area, further research in this topic is critical for a better understanding of underage rural drinking. Qualitative data may be a helpful addition to existing studies in order to gain a phenomenological perspective of the problem. Additionally, a national rural sample would shed light on regional trends and differences. Future research should also look at reasons why young people abstain from drinking. Finally, there is a need to link assessment and prevention/intervention data so that we can better understand which interventions are most effective in lowering youth alcohol usage in rural populations.

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