WISCONSIN MEDICAL JOURNAL

Prevalence and Characteristics of Hazardous Drinkers: Results of the Greater Milwaukee Survey

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ABSTRACT

Context: At-risk drinking is of particular concern in Wisconsin.

Objective: This study investigated the prevalence and demographic characteristics of hazardous drinkers in the Milwaukee area.

Design: The study design was a cross-sectional survey. Data were collected by means of telephone interviews as part of the 2005 Greater Milwaukee Survey.

Participants: From 2614 households randomly selected for study participation, 937 adult residents participated in the survey.

Study Measure: The Alcohol Use Disorders Identification Test-Consumption (AUDIT-C) measure was used to classify residents into 1 of 2 drinking groups: non-hazardous or hazardous drinkers.

Results: Based on a response rate of 35.8%, approximately 25% of Milwaukee area residents were estimated to be hazardous drinkers. Significant associations were found between several demographic characteristics and the drinking group variable. In addition, logistic regression results revealed that younger adults, in particular 18-29 year olds, men, non-minorities, individuals with no underage children in the household, and Milwaukee County residents were most at-risk for hazardous drinking.

Conclusions: Local health care professionals should consider implementing alcohol screening and brief intervention, especially among at-risk individuals. Targeted state-level intervention resources also are needed, in particular, resources that serve young adults 18-29 years old.

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INTRODUCTION

At-risk drinking is highly prevalent in Wisconsin. In the most recently published National Survey on Drug Use and Health, Wisconsin's past month binge drinking rate of 31% was exceeded only by North Dakota's.[1] While statewide estimates derived from national studies abound,[2] there is a need for Wisconsin-based studies that shed more light on at-risk drinking indicators. In particular, local studies comprised of representative, general population samples that focus on rates and risk factors for hazardous drinking, or drinking that places individuals at-risk for harm,[3,4] can help target intervention efforts in the state. The present study, based on a representative survey of Milwaukee area residents, provides such important baseline epidemiological data and makes recommendations for local health care professionals and needed state-level resources.

METHODS

Sample

The study sample was comprised of adults ≥18 years who responded to the 2005 Greater Milwaukee Survey (GMS), a semi-annual household survey conducted by the Institute for Survey & Policy Research at the University of Wisconsin-Milwaukee. Based on random digit dialing, 2614 households were contacted, with 1 adult from each household randomly selected. A total of 937 adults participated in the survey for a response rate of 35.8%. The survey was approved by the Institutional Review Board of the University of Wisconsin-Milwaukee.

Measure

The alcohol use measure included in the GMS was the 3-item Alcohol Use Disorders Identification Test-Consumption (AUDIT-C), which assesses both frequency and quantity of drinking (see Table 1; scale range 0-12). The AUDIT-C is comprised of the first 3 questions of the AUDIT, a 10-item alcohol screening instrument developed by the World Health Organization.[3,5] The AUDIT-C has been validated as a

Table 1. Alcohol Use Disorders Identification Test-Consumption (AUDIT-C)

1. How often do you have a drink containing alcohol?				
Never (0)*	Monthly or less (1)	2-4 times a month (2)	2-3 times a week (3)	4 or more times a week (4)
2. How many drinks containing alcohol do you have on a typical day when you are drinking?				
1 or 2 (0)	3 or 4 (1)	5 or 6 (2)	7 to 9 (3)	10 or more (4)
3. How often do you have five or more drinks on one occasion?				
Never (0)	Less than monthly (1)	Monthly (2)	Weekly (3)	Daily or almost daily (4)

*Each answer's score is in parentheses.

method to detect hazardous drinking among the general US population with a cut-point of 4 or greater yielding the best combined sensitivity and specificity (92.6% and 92.0%, respectively).[6] Based on the AUDIT-C, respondents in our sample were classified into 1 of 2 drinking groups: non-hazardous drinkers, which also included abstainers (AUDIT-C score of <4), or hazardous drinkers (AUDIT-C score of ≥4). Because this was an epidemiological study, abstainers were retained. In addition, in a preliminary analysis, few differences were found between abstainers and non-hazardous drinkers; therefore, we collapsed the 2 groups into 1 overall non-hazardous drinking group.

Data Analysis

We estimated the overall prevalence of hazardous drinking. In addition, we explored whether or not prevalence varied according to selected demographic characteristics. Subgroup comparisons employed cross-tabular analyses and chi-square tests of significance. In addition, a follow-up analysis that adjusts for all variables under consideration was conducted by employing logistic regression. All analyses employed sample weights that were constructed to adjust for survey methodology and non-response. SPSS version 13.0 software was used to conduct all analyses.

RESULTS

Table 2 presents the prevalence rates and chi-square analyses of the 2 drinking groups by the selected demographic characteristics. The overall prevalence rate for each drinking group was approximately 25% for hazardous drinkers and 75% for non-hazardous drinkers, 28% of which were abstainers. Several significant associations were found between the demographic characteristics and the drinking group variable. Men were more likely than women (35.7% versus 16.4%) to be hazardous drinkers as were non-minorities in comparison to minorities (27.3% versus 19%). Younger respondents (18-29 years) were more likely than older respondents (30 years or older) (39.3% versus ≤25%) to engage in hazardous drinking, and unmarried respondents were more likely than married respondents (29.8% versus 22.2%) to be hazardous drinkers. Finally, respondents living in Milwaukee County were more likely to be hazardous drinkers than those respondents living in the surrounding counties of Ozaukee, Washington, and Waukesha (26.3% versus 23.7%).

Table 3 presents the results of the logistic regression model. Men compared to women had over twice the odds of being a hazardous drinker as did non-minorities when compared to minorities. Compared with those in the oldest age group (55 years or older), younger respondents had 2 to almost 4 times the odds of being a hazardous drinker. When compared to those with underage children in the household, respondents with no underage children had approximately 1.5 times the odds of being a hazardous drinker, as did respondents living in Milwaukee versus the surrounding counties.

DISCUSSION/CONCLUSIONS

These data from a representative, general population sample of Milwaukee area adult residents revealed noteworthy levels of hazardous drinking. Approximately 25% of adults, or 1 out of 4, were classified as hazardous drinkers, which is higher than a recent national estimate of 22.6%.[6] In addition, this rate is comparable to the 1997/1999 estimated binge drinking rate of approximately 23% for the Milwaukee-Waukesha metropolitan area, which was the third highest among all US metropolitan areas.[7]

Younger adults, in particular 18-29 year olds, were found to be at extremely high risk (almost 4 times the odds) for hazardous drinking, which confirms previous research.[8-10] In fact, almost 4 out of 10 of the 18-29 year olds in our sample (approximately 40%) were classified as hazardous drinkers. Other groups at high risk were men, non-minorities, individuals with no underage children in the household, and Milwaukee County residents. Previous research has found both men and non-minorities to be at increased risk for drinking problems.[11,12] Individuals with no underage children in the household may not or may no longer have parenting responsibilities, which may explain why the increased risk

Table 2. Prevalence Rates and Chi-Square Analyses of Non-Hazardous and Hazardous Drinkers by Respondent Demographic Characteristics

	Non-Hazardous Drinkers		Hazardous Drinkers	
	n	%	n	%
Total within Drinking Category	690	74.7	234	25.3
Gender (*n*=925)*				
Male	277	64.3	154	35.7
Female	413	83.6	81	16.4
Race/Ethnicity (*n*=906)†				
Non-minority‡	513	72.7	193	27.3
Minority§	162	81.0	38	19.0
Age (*n*=914)*				
18-29	125	60.7	81	39.3
30-39	126	76.8	38	23.2
40-54	204	75.0	68	25.0
55+	226	83.1	46	16.9
Education (*n*=923)				
Less than High School	110	72.4	42	27.6
High School	203	78.7	55	21.3
Some College	203	73.0	75	27.0
College Degree	173	73.6	62	26.4
Household Income (*n*=785)				
≤ $29,999	185	75.2	61	24.8
$30,000-$59,999	189	73.5	68	26.5
$60,000+	197	69.9	85	30.1
Marital Status (*n*=925)‖				
Not Married	273	70.2	116	29.8
Married	417	77.8	119	22.2
Children in Household (*n*=924)				
No	401	73.6	144	26.4
Yes	288	76.2	90	23.8
Place of Residence (*n*=925)*				
County of Milwaukee	429	73.7	153	26.3
Surrounding County	261	76.3	81	23.7

Note: Chi-square analyses were performed to determine general statistical association between each demographic characteristic and the drinking category variable.
*P< .001
†P< .05
‡White
§American Indian or Alaska Native, Asian or Pacific Islander, Black, Hispanic, and Other.
‖P< .01

Table 3. Logistic Regression Results of Demographic Characteristic Variables on Drinking Categories (n=764)

Variable	Hazardous Drinkers (vs Non-Hazardous Drinkers) OR (95% CI)
Gender	
Male	2.12 (1.50, 3.00)*
Female	Ref†
Race/Ethnicity	
Non-minority‡	2.09 (1.30, 3.35)§
Minority‖	Ref
Age	
18-29	3.96 (2.30, 6.82)*
30-39	2.16 (1.18, 3.93)¶
40-54	2.10 (1.26, 3.51)§
55+	Ref
Education	
Less than High School	1.23 (0.67, 2.29)
High School	0.84 (0.51, 1.36)
Some College	1.06 (0.66, 1.70)
College Degree	Ref
Household Income	
≤ $29,999	0.77 (0.44, 1.35)
$30,000-$59,999	0.75 (0.49, 1.16)
$60,000+	Ref
Marital Status	
Not Married	1.44 (0.97, 2.14)
Married	Ref
Children in Household	
No	1.48 (1.01, 2.16)¶
Yes	Ref
Place of Residence	
County of Milwaukee	1.49 (1.00, 2.21)¶
Surrounding County	Ref

Nagelkerke R^2 = 0.219
*P<.001
†Reference category
‡White
§P<.01
‖American Indian or Alaska Native, Asian or Pacific Islander, Black, Hispanic, and Other
¶P<.05

for hazardous drinking. Finally, residents of Milwaukee County may be at higher risk because of comparatively higher densities of bars and liquor stores.[13,14]

There are limitations to be considered when interpreting the results of this study. One is the study's use of telephone survey methodology. Telephone surveys tend to under-represent lower income informants who are more likely to reside in homes without landlines. Study weighting partly (but not completely) addresses this problem. Another limitation concerns the use of a single gender threshold for the AUDIT-C binge drinking question (Table 1, Question #3). Although the binge

drinking threshold for women is usually defined by researchers as 4 or more drinks on 1 occasion instead of 5, for practical reasons, we asked the same question of all respondents. However, in a separate analysis we assigned female respondents a value of 2 for endorsing 3-4 drinks on the AUDIT-C Question #2 (see Table 1), and we found that only 5 additional women would be classified as hazardous drinkers. Furthermore, in a recent investigation by Bradley and colleagues,[15] the standard and gender-specific AUDIT-C versions were found to be equivalent in the detection of past-year hazardous drinking among female Veterans Affairs patients. Finally, since our study relied on a single measure of hazardous drinking, it may be limited to the extent that more valid indicators of this behavior exist (eg more specific quantity-frequency definitions such as drinks per week).[16] It should be underscored, however, that the AUDIT-C has recently been validated as a measure of risk or hazardous drinking in a nationally representative sample.[6]

In a state where at-risk drinking is highly prevalent, it is important to monitor hazardous drinking rates with the kind of epidemiological survey data presented here. Additionally, there is a need to identify individuals at particularly elevated risk for this behavior. Such identification may facilitate health care professionals to screen and intervene with at-risk individuals to prevent or reduce alcohol-related problems (eg accidents, high blood pressure).[16] Evidence-based alcohol screening and brief intervention guidelines exist for primary care practitioners.[17-20] Unfortunately, these guidelines are not routinely integrated into practice.[21] Health care professionals interested in integrating evidenced-based screening and brief intervention should consider the AUDIT-C instrument,[15,16,19,21,22] which screens for a range of alcohol use patterns from hazardous drinking to alcohol use disorders versus alcohol use disorders only (eg the CAGE).[21]

Hazardous or at-risk drinking is a prevalent public health problem in the greater Milwaukee area. Our findings suggest that Wisconsin has not provided sufficient intervention, including prevention resources, to address this problem. In an era of scarcity, the current prevalence data can be used to target future resources. In particular, our study suggests that intervention resources are most needed among the population of young adults 18-29 years old. In order to prevent early adulthood hazardous drinking, increased allocation of resources to high school-based prevention programs also is strongly encouraged.

Support/Funding: This study was supported by the Center for Addiction and Behavioral Health Research, Helen Bader School of Social Welfare, University of Wisconsin-Milwaukee. The telephone data collection for this survey was conducted by Linda Hawkins and the University of Wisconsin-Milwaukee Institute for Survey & Policy Research.
Financial Disclosures: None declared.

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