Prevalence and Correlates of At-Risk Drinking Among Older Adults: The Project SHARE Study

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BACKGROUND: At-risk drinking, excessive or potentially harmful alcohol use in combination with select comorbidities or medication use, affects about 10% of elderly adults and is associated with higher mortality. Yet, our knowledge is incomplete regarding the prevalence of different categories of at-risk drinking and their associations with patient demographics.

OBJECTIVE: To examine the prevalence and correlates of different categories of at-risk drinking among older adults.

DESIGN: Cross-sectional analysis of survey data.

SUBJECTS: Current drinkers ages 60 and older accessing primary care clinics around Santa Barbara, California (n=3,308).

MEASUREMENTS: At-risk drinkers were identified using the Comorbidity Alcohol Risk Evaluation Tool (CARET). At-risk alcohol use was categorized as alcohol use in the setting of 1) high-risk comorbidities or 2) high-risk medication use, and 3) excessive alcohol use alone. Adjusted associations of participant characteristics with at-risk drinking in each of the three at-risk categories and with at-risk drinking of any kind were estimated using logistic regression.

RESULTS: Over one-third of our sample (34.7%) was at risk. Among at-risk individuals, 61.9% had alcohol use in the context of high-risk comorbidities, 61.0% had high-risk medication use, and 64.3% had high-risk alcohol behaviors. The adjusted odds of at-risk drinking of any kind were decreased and significant for women (odds ratio, OR=0.41; 95% confidence interval: 0.35-0.48; p-value<0.001), adults over age 80 (OR=0.55; CI: 0.43-0.72; p<0.001 vs. ages 60-64), Asians (OR=0.40; CI: 0.20-0.80; p=0.01 vs. Caucasians) and individuals with higher education levels. Similar associations were observed in all three categories of at-risk drinking.

CONCLUSIONS: High-risk alcohol use was common among older adults in this large sample of primary care patients, and male Caucasians, those ages 60-64, and those with lower levels of education were most likely to have high-risk alcohol use of any type. Our findings could help physicians identify older patients at increased risk for problems from alcohol consumption.

KEY WORDS: elderly; at-risk drinking; provider interventions.

Accepted February 17, 2010
Published online April 16, 2010

INTRODUCTION

Approximately half of men and more than one-third of women in the U.S. over age 60 are current drinkers.1-2 While moderate amounts of alcohol consumption generally confer health benefits, older adults may experience negative health consequences from even moderate quantities of alcohol consumption (e.g., 1-2 drinks on most days).3-5 This level of alcohol use can be harmful for older adults due to physiological changes that increase the effects of a given dose of alcohol, as well as increased age-associated morbidity and medication use.6-9 Medication interactions with alcohol can occur in older adults due to changes in absorption, distribution, and metabolism of alcohol. Adverse interactions can occur between alcohol and other drugs, such as disulfiram-like interactions with some beta-lactam cephalosporins and nitrates, and sedation and impaired coordination with benzodiazepines and sedating antihistamines. Alcohol can also exacerbate or reduce a medicine’s therapeutic effects (e.g., warfarin), and interfere with the effectiveness of some medications to treat conditions like hypertension, gastroesophageal reflux, insomnia, and depression.13-15 Drinking is known to cause or worsen conditions such as liver disease, gastritis and other gastrointestinal conditions, depression, gout, insomnia, hypertension, as well as many varieties of cancer, and can result in accidents and injuries.6,17 We previously defined at-risk drinking to be alcohol use that is excessive or potentially harmful in combination with select comorbidities or medications.5,8,13,15,18-20

Based on national data, the prevalence of this form of “at-risk drinking” is estimated to be 10% among all elderly adults and 26% among older adults who are current drinkers.5 These data have demonstrated the association of at-risk drinking with increased mortality rates among older men.5 Despite this significant public health burden, our knowledge is incomplete about differences in the prevalence of specific categories of at-risk drinking among older drinkers (i.e., alcohol behaviors, alcohol use combined with select comorbidities or medications), or the demographic characteristics associated with at-risk
drinking. Understanding differences in the prevalence of various categories of at-risk drinking among elderly adults could help physicians to screen, counsel, and provide treatment recommendations for this group. Although there is considerable evidence about the demographic correlates of heavy drinking (e.g., age, gender, income, race/ethnicity)изм, these correlates may not be the same for at-risk drinkers. For example, older adults may drink less but also use more medications and have more comorbidities that may negatively interact with alcohol. Conversely, increases in risk due to higher alcohol consumption may be offset in demographic subgroups that use fewer medications or have fewer comorbidities. Hence, associations with at-risk drinking could diverge from those with heavy alcohol consumption or alcohol dependence. Furthermore, physicians are less likely to ask older patients about their alcohol use compared to younger patients due to poor understanding of the associations between patient characteristics and at-risk drinking.24–28 This knowledge gap could decrease the likelihood of clinicians identifying or intervening in cases of alcohol misuse. The two studies that assessed correlates of at-risk drinking among elderly adults found that men, those under 75 years of age, and married people were more likely to be at-risk drinkers. However, these studies did not adjust for demographic covariates that may bias these associations.8,19 Furthermore, the instrument used to identify at-risk drinkers in many of the previous studies has been revised to incorporate new findings in the medical literature relevant to at-risk drinking among older adults.8,9,13,16,20,29,30 In order to fill the gaps in our understanding of the categories of at-risk drinking and the association of demographic characteristics with these categories, we examined data from 3,308 elderly patients, age 60 years and older, of primary care physicians practicing in Santa Barbara, California area clinics.

METHODS

Setting

This study used baseline data from Project SHARE (Senior Health and Alcohol Risk Education), which tested the efficacy and cost-effectiveness of an educational intervention to reduce at-risk drinking in adults age 60 years and older. The study population was drawn from Sansum Clinic, a community-based group practice with seven clinics in the Santa Barbara, California area. The practice has a strong primary care base, with service lines representing all major specialties and sub-specialties appropriate for elder care (e.g., cardiology, diabetes, geriatrics, urology).

Recruitment

Of the 42 primary care physicians approached, 31 agreed to participate in the study (n=21 male, 10 female, 17 internal medicine, 14 family practice). Clinic information technology personnel identified all adults 60 and older who were current patients of these providers (n=12,573). Providers initially screened out 2,159 patients who met one or more of the following exclusion criteria: severe cognitive impairment, termin-
DATA ANALYSIS

All analyses were based on 3,308 participants with complete data. Sensitivity analyses using multiple imputations yielded no appreciable changes in the magnitude or strength of associations. All statistical analyses were computed using Stata Version 10.1 (Stata Corp). Frequency distributions of sample characteristics were calculated, and chi-square statistics were used to compare at-risk and not-at-risk older drinkers. Logistic regressions were specified to analyze the adjusted odds of any at-risk drinking and category of at-risk drinking, controlling for gender, age, race/ethnicity, marital status, education, household income, and home ownership. Adjusted odds ratios and 95% confidence intervals are presented.

RESULTS

Prevalence of At-risk Drinking

Of the 3,308 current drinkers in our sample, 34.7% were at-risk drinkers due to either alcohol behaviors or alcohol use combined with certain comorbidities or medications, and 19.5% fell into multiple risk categories. Among the 1,147 at-risk drinkers, 56.1% fell into at least two risk categories and 31.0% fell into all three risk categories. Among all current drinkers, similar proportions were at risk due to alcohol behaviors (22.3%), alcohol use with select comorbidities (21.5%), and alcohol use combined with certain medications (21.2%). Among at-risk drinkers, these proportions were 64.3%, 61.9%, and 61.0%, respectively.

Unadjusted Correlates of At-risk Drinking

The unadjusted probability of being an at-risk drinker differed by gender with 24.7% of women at-risk compared to 56.0% of men (p<0.001; Table 3). The probability of being at-risk was generally lower for older age groups than younger ones (p<0.001). At-risk drinking also differed by marital status (p=0.002) with married individuals reporting the highest risk (36.8%). Risk also differed by years of education (p=0.004), and was highest for participants not completing high school (51.4%). Likelihood of being at risk also varied by income (p<0.001). However, the unadjusted probability of at-risk drinking did not differ significantly by race, ethnicity or home ownership.

Adjusted Associations of Sample Characteristics and At-risk Drinking

Results from the adjusted associations were similar to the unadjusted associations (Table 4). Female participants had half the odds (OR=0.41; CI: 0.35-0.48) of any at-risk drinking compared to males. Individuals 80 years and older had 0.55 (CI: 0.43-0.72) times the odds of at-risk drinking compared to individuals 60-64 years old. Older adults who did not complete

| Item                                                                 | Amount of drinking considered at-risk |
|---------------------------------------------------------------------|--------------------------------------|
| Alcohol use and behaviors in the last 12 months                     | ≥5/day at any frequency, 4/day at least 2 times/month, 3/day at least 4 times/week |
| Alcohol use and medications taken at least 3-4 times per week currently | ≥4/day at any frequency, 2-3/day at least 4 times/week |
| Liver disease, pancreatitis                                         | Any amount                           |
| Gout, depression                                                    | ≥4/day at any frequency, 3/day at least 2 times/month, 2/day at least 4 times/week |
| High blood pressure, diabetes                                       | 5/day at any frequency, 4/day at least 2 times/month, 3/day at least 4 times/week |
| Sometimes have problems with sleeping, falling, memory, heartburn, stomach pain, nausea, vomiting, or feel sad/blue | ≥5/day at any frequency, 4/day at least 2 times/month, 3/day at least 4 times/week |

Table 1. Comorbidity Alcohol Risk Evaluation Tool (CARET)
Table 2. Demographic Characteristics of Study Participants (N=3,308)

| Variable          | Percent |
|-------------------|---------|
| Gender            |         |
| Female            | 48.2    |
| Male              | 51.8    |
| Age               |         |
| 60-64             | 20.3    |
| 65-69             | 25.5    |
| 70-74             | 19.4    |
| 75-79             | 16.2    |
| 80+               | 18.7    |
| Latino ethnicity  |         |
| Yes               | 5.7     |
| No                | 94.3    |
| Race              |         |
| African American  | 0.6     |
| Asian             | 1.5     |
| Native American   | 1.5     |
| White             | 96.3    |
| Marital Status    |         |
| Married           | 72.0    |
| Widowed           | 13.5    |
| Divorced or separated | 11.9 |
| Never married     | 2.6     |
| Education         |         |
| Less than high school | 2.2   |
| High school graduate | 11.3 |
| Some college      | 29.4    |
| College graduate  | 24.6    |
| Graduate school   | 32.6    |
| Household income  |         |
| Less than $30,000 | 13.2    |
| $30,000-$39,999   | 10.4    |
| $40,000-$59,999   | 18.4    |
| $60,000-$79,999   | 17.1    |
| $80,000-$99,999   | 13.3    |
| $100,000-$199,999 | 20.2    |
| $200,000 or more  | 7.4     |
| Own home          |         |
| Yes               | 87.2    |
| No                | 12.9    |

Table 3. Unadjusted Associations of Participant Characteristics with At-Risk Drinking (N=3,308)

| Demographic Variable | Percent At Risk | p-value |
|----------------------|-----------------|---------|
| Gender               |                 |         |
| Female               | 24.7            | <0.001  |
| Male                 | 56.0            |         |
| Age                  |                 |         |
| 60-64                | 37.6            | <0.001  |
| 65-69                | 38.8            |         |
| 70-74                | 33.6            |         |
| 75-79                | 34.6            |         |
| 80+                  | 27.0            |         |
| Latino Ethnicity     |                 |         |
| Latino              | 35.3            | 0.86    |
| Non-Latino           | 34.8            |         |
| Race                 |                 |         |
| African American     | 20.0            | 0.11    |
| Asian                | 21.6            |         |
| Native American      | 33.3            |         |
| White                | 35.0            |         |
| Marital Status       |                 |         |
| Married              | 36.8            | <0.001  |
| Widowed              | 28.5            |         |
| Divorced or separated| 29.7            |         |
| Never married        | 31.4            |         |
| Education            |                 |         |
| Less than high school| 51.4            | 0.003   |
| High school graduate | 32.2            |         |
| Some college         | 31.6            |         |
| College graduate     | 35.5            |         |
| Graduate school      | 36.8            |         |
| Household income     |                 |         |
| Less than $30,000    | 28.9            | <0.001  |
| $30,000-$39,999      | 28.0            |         |
| $40,000-$59,999      | 32.0            |         |
| $60,000-$79,999      | 33.8            |         |
| $80,000-$99,999      | 42.1            |         |
| $100,000-$199,999    | 36.4            |         |
| $200,000 or more     | 45.1            |         |
| Own home             |                 |         |
| Yes                  | 35.1            | 0.18    |
| No                   | 31.8            |         |

DISCUSSION

In our sample, over one-third of older drinkers were at risk of harm either because of the combined use of alcohol with selected medications and comorbidities or the amount of alcohol consumed and related behaviors. Therefore, at-risk drinking was a considerable health concern for this group. The National Institute on Alcohol Abuse and Alcoholism (NIAAA) defines at-risk drinking in the Clinician’s Guide as consuming fewer than four drinks per day and fewer than 14 drinks per week for healthy men under 65 years of age, and fewer than three drinks per day and fewer than 7 drinks per week for healthy women and healthy men over 65 years of age. According to this definition, 29.0% of our sample high school had higher odds than those with a graduate school degree (OR=2.44; CI: 1.45-4.10). Asians in our sample had lower odds of being at-risk drinkers compared to whites (OR=0.40; CI: 0.20-0.79). Respondents with annual household incomes between $80,000—$100,000 had 1.49 (CI: 1.09-2.05) times the odds of being at-risk compared to those with incomes under $30,000.

Adjusted Associations of Sample Characteristics and Category of At-risk Drinking

After adjusting for other patient characteristics, women in our sample had lower odds of being an at-risk drinker due to alcohol behaviors (OR=0.28; CI: 0.23-0.34), alcohol use combined with select comorbidities (OR=0.46; CI: 0.38-0.55), and alcohol use with certain medications (OR=0.56; CI: 0.46-0.67) (Table 5). Relative to adults ages 60-64, odds of at-risk drinking due to alcohol behaviors were lower for participants ages 70-74 (OR=0.69; CI: 0.53-0.91), 75-79 (OR=0.58; CI: 0.43-0.77) and 80 and older (OR=0.37; CI: 0.27-0.51). Similarly, alcohol use combined with comorbidities was lower for adults ages 70-74 (OR=0.75; CI: 0.57-0.98), 75-79 (OR=0.73; CI: 0.54-0.97); and 80 and older (OR=0.64; CI: 0.48-0.87) compared to adults ages 60-64. However, we found no differences in the adjusted odds of alcohol use combined with medications across age groups. Compared to older adults with a graduate education, those without a high school degree had more than twice the odds of being at-risk due to alcohol behaviors (OR=2.48; CI: 1.42-4.35), alcohol use combined with select comorbidities (OR=2.90; CI: 1.69-4.98), and alcohol use combined with certain medications (OR=2.13; 1.23-3.68). When compared to older adults with a graduate degree, those with a high school diploma had 1.47 (CI: 1.08-2.01) times the odds of being at risk due to alcohol use combined with certain comorbidities and those with some college education had 1.41(CI: 1.12-1.78) times the odds. Relative to whites, Asians in our sample had less than half the adjusted odds of at-risk drinking due to alcohol behaviors (OR=0.42; CI: 0.18-0.95) and alcohol use combined with certain medications (OR=0.20; CI: 0.026-0.65). Finally, across risk categories, we found no effects for Latino ethnicity, marital status, income, or home ownership.

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demographics. One possible explanation for this discrepancy of harmful drinking after controlling for other participant found no evidence that married individuals are at increased risk to earlier studies based on bivariate associations, we may be offset by increased medication use. We also find no age associations with risk due to alcohol use in is that married participants tend to be male and younger. Relative risks and risk differences are available from the authors upon request.

| Characteristic | OR (95% CI) | P-value |
|---------------|-------------|---------|
| Gender        |             |         |
| Female        | 0.41 (0.35-0.48) | <0.001  |
| Male          | 1.00        | -       |
| Age           |             |         |
| 60-64 yrs old | 1.00        | -       |
| 65-69 yrs old | 1.00 (0.80-1.24) | 0.99    |
| 70-74 yrs old | 0.81 (0.64-1.03) | 0.09    |
| 75-79 yrs old | 0.79 (0.61-1.01) | 0.06    |
| 80 yrs or older | 0.55 (0.43-0.72) | <0.001  |
| Latino ethnicity |            |         |
| Latino        | 0.92 (0.66-1.27) | 0.60    |
| Non-Latino    | 1.00        | -       |
| Race          |             |         |
| African-American | 0.43 (0.14-1.32) | 0.14    |
| Asian/Pacific Islander | 0.40 (0.20-0.80) | 0.01    |
| Native American | 0.91 (0.50-1.67) | 0.77    |
| White         | 1.00        | -       |
| Education     |             |         |
| Less than high school | 2.44 (1.45-4.10) | <0.001  |
| High school graduate | 1.13 (0.86-1.49) | 0.37    |
| Some college  | 1.04 (0.85-1.27) | 0.72    |
| College graduate | 1.09 (0.89-1.32) | 0.41    |
| Graduate college | 1.00        | -       |
| Marital Status |             |         |
| Married       | 1.00        | -       |
| Widowed       | 1.21 (0.94-1.57) | 0.14    |
| Divorced or separated | 0.97 (0.75-1.26) | 0.83    |
| Never Married | 0.90 (0.55-1.48) | 0.69    |
| Household Income |          |         |
| Less than $30,000 | 1.00        | -       |
| $30,000-$39,999 | 0.91 (0.65-1.26) | 0.56    |
| $40,000-$59,999 | 1.00 (0.74-1.33) | 0.98    |
| $60,000-$79,999 | 1.03 (0.76-1.39) | 0.86    |
| $80,000-$99,999 | 1.49 (1.09-2.05) | 0.01    |
| $100,000-$199,999 | 1.04 (0.76-1.42) | 0.83    |
| $200,000 or more | 1.45 (1.00-2.10) | 0.05    |
| Owns Home     |             |         |
| Yes           | 0.95 (0.75-1.21) | 0.69    |
| No            | 1.00        | -       |

Relative risks and risk differences are available from the authors upon request.

Our findings are relevant for physicians wishing to counsel older patients on the risks of alcohol consumption. Limited physician time suggests the need to prioritize counseling. Inadequate information about which older patients are at high risk of alcohol-related harm makes it challenging to give advice to patients that could benefit from such counseling. Specifically, we find at-risk drinking among our sample of older patients is positively correlated with being younger, male, and less educated after for controlling other patient demographics. These findings may help physicians identify elderly patients at greatest risk for harm from drinking, making provider interventions more efficient. As an example of how widely risks can vary, consider the following hypothetical patients, both current drinkers who completed college and own their own homes. A 62-year-old married, male, white patient with an annual household income of $90,000 is estimated to have a 57.1% adjusted probability of being an at-risk drinker, compared to an 8.1% adjusted probability for an 85-year-old widowed, female, Asian patient with an income of $35,000.

When interpreting our findings, the following limitations should be considered. Drinking frequency and quantity relied on patient self-report, so it is possible that some patients were misclassified. Nonetheless, evidence suggests that patient self-reported alcohol consumption tends to be reliable and valid. Misclassifications may reflect unreported alcohol consumption. However, more evidence is needed to understand how physicians can effectively intervene once at-risk older drinkers are identified and whether or not these interventions are cost effective. Our findings are relevant for physicians wishing to counsel older patients on the risks of alcohol consumption. Limited physician time suggests the need to prioritize counseling. Inadequate information about which older patients are at high risk of alcohol-related harm makes it challenging to give advice to patients that could benefit from such counseling. Specifically, we find at-risk drinking among our sample of older patients is positively correlated with being younger, male, and less educated after for controlling other patient demographics. These findings may help physicians identify elderly patients at greatest risk for harm from drinking, making provider interventions more efficient. As an example of how widely risks can vary, consider the following hypothetical patients, both current drinkers who completed college and own their own homes. A 62-year-old married, male, white patient with an annual household income of $90,000 is estimated to have a 57.1% adjusted probability of being an at-risk drinker, compared to an 8.1% adjusted probability for an 85-year-old widowed, female, Asian patient with an income of $35,000.

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Table 5. Adjusted Associations of Participant Characteristics with Specific Categories of At-Risk Drinking (N=3,308)

| Category of At-Risk Drinking* | Alcohol Behaviors | Alcohol and Comorbidities | Alcohol and Medications |
|-------------------------------|-------------------|---------------------------|-------------------------|
|                               | OR (95% CI)       | p-value                   | OR (95% CI)             | p-value                   | OR (95% CI)             | p-value                   |
| **Gender**                    |                   |                           |                         |                           |                         |                           |
| Female                        | 0.28 (0.23-0.34)  | <0.001                    | 0.46 (0.38-0.55)        | <0.001                    | 0.56 (0.46-0.67)        | <0.001                    |
| Male                          | 1.00              |                           | 1.00                    |                           | 1.00                    |                           |
| **Age**                       |                   |                           |                         |                           |                         |                           |
| 60-64 yrs old                 | 1.00              |                           | 1.00                    |                           | 1.00                    |                           |
| 65-69 yrs old                 | 0.77 (0.61-0.98)  | 0.04                      | 0.97 (0.76-1.24)        | 0.83                      | 1.05 (0.81-1.36)        | 0.70                      |
| 70-74 yrs old                 | 0.69 (0.53-0.91)  | 0.01                      | 0.75 (0.57-0.98)        | 0.04                      | 1.03 (0.78-1.36)        | 0.84                      |
| 75-79 yrs old                 | 0.58 (0.43-0.77)  | <0.001                    | 0.73 (0.54-0.97)        | 0.03                      | 1.11 (0.83-1.48)        | 0.47                      |
| 80 yrs or older               | 0.37 (0.27-0.51)  | <0.001                    | 0.64 (0.48-0.87)        | 0.01                      | 0.90 (0.67-1.21)        | 0.49                      |
| **Latino ethnicity**          |                   |                           |                         |                           |                         |                           |
| Latino                        | 1.09 (0.76-1.57)  | 0.63                      | 0.99 (0.69-1.43)        | 0.97                      | 0.86 (0.58-1.27)        | 0.44                      |
| Non-Latino                    | 1.00              |                           | 1.00                    |                           | 1.00                    |                           |
| **Race**                      |                   |                           |                         |                           |                         |                           |
| African-American              | 0.74 (0.24-2.28)  | 0.60                      | 0.56 (0.16-1.94)        | 0.36                      | 0.66 (0.19-2.27)        | 0.50                      |
| Asian/Pacific Islander        | 0.42 (0.18-0.95)  | 0.04                      | 0.59 (0.27-1.27)        | 0.17                      | 0.20 (0.06-0.65)        | 0.01                      |
| Native American               | 1.13 (0.58-2.20)  | 0.72                      | 1.06 (0.54-2.07)        | 0.86                      | 0.89 (0.44-1.82)        | 0.76                      |
| White                         | 1.00              |                           | 1.00                    |                           | 1.00                    |                           |
| **Education**                 |                   |                           |                         |                           |                         |                           |
| Less than high school         | 2.48 (1.42-4.35)  | <0.001                    | 2.90 (1.69-4.98)        | <0.001                    | 2.13 (1.23-3.68)        | 0.01                      |
| High school graduate          | 1.36 (0.99-1.87)  | 0.06                      | 1.47 (1.08-2.01)        | 0.02                      | 1.01 (0.74-1.38)        | 0.96                      |
| Some college                  | 1.26 (1.00-1.59)  | 0.05                      | 1.41 (1.12-1.78)        | 0.01                      | 1.02 (0.81-1.28)        | 0.88                      |
| College graduate              | 1.36 (1.09-1.71)  | 0.01                      | 1.23 (0.98-1.55)        | 0.08                      | 1.00 (0.80-1.25)        | 0.40                      |
| Graduate college              | 1.00              |                           | 1.00                    |                           | 1.00                    |                           |
| **Marital Status**            |                   |                           |                         |                           |                         |                           |
| Married                       | 1.00              |                           | 1.00                    |                           | 1.00                    |                           |
| Widowed                       | 1.19 (0.87-1.64)  | 0.27                      | 0.94 (0.69-1.27)        | 0.68                      | 0.93 (0.69-1.25)        | 0.63                      |
| Divorced or separated         | 1.11 (0.82-1.50)  | 0.52                      | 1.06 (0.79-1.43)        | 0.68                      | 0.88 (0.65-1.19)        | 0.40                      |
| Never Married                 | 1.08 (0.62-1.88)  | 0.78                      | 1.17 (0.69-1.99)        | 0.55                      | 0.78 (0.43-1.40)        | 0.41                      |
| **Household Income**          |                   |                           |                         |                           |                         |                           |
| Less than $30,000              | 1.00              |                           | 1.00                    |                           | 1.00                    |                           |
| $30,000-$39,999                | 0.82 (0.55-1.22)  | 0.32                      | 0.85 (0.58-1.23)        | 0.39                      | 1.05 (0.73-1.52)        | 0.78                      |
| $40,000-$59,999                | 1.07 (0.76-1.50)  | 0.70                      | 1.02 (0.73-1.41)        | 0.91                      | 0.93 (0.66-1.30)        | 0.66                      |
| $60,000-$79,999                | 0.94 (0.66-1.35)  | 0.75                      | 0.96 (0.68-1.36)        | 0.82                      | 0.94 (0.66-1.33)        | 0.72                      |
| $80,000-$99,999                | 1.11 (0.76-1.61)  | 0.59                      | 1.15 (0.81-1.66)        | 0.44                      | 1.27 (0.89-1.83)        | 0.19                      |
| $100,000-$199,999              | 1.01 (0.70-1.46)  | 0.95                      | 0.85 (0.59-1.21)        | 0.36                      | 0.93 (0.65-1.34)        | 0.70                      |
| $200,000 or more               | 1.32 (0.86-2.02)  | 0.20                      | 1.32 (0.87-2.00)        | 0.20                      | 1.43 (0.94-2.16)        | 0.09                      |
| **Owns Home**                 |                   |                           |                         |                           |                         |                           |
| Yes                           | 0.95 (0.72-1.26)  | 0.74                      | 0.81 (0.62-1.06)        | 0.12                      | 0.93 (0.71-1.22)        | 0.70                      |
| No                            | 1.00              |                           | 1.00                    |                           | 1.00                    |                           |

*The CARET (Table 1) identifies older adults at risk for harm from their alcohol consumption based on alcohol use behaviors (e.g., quantity, frequency, driving after drinking) or the combination of quantity and frequency of alcohol use with select comorbidities (e.g., gout, hepatitis, nausea), or medications (e.g., antidepressants, sedatives)

*Relative risks and risk differences are available from the authors upon request*
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