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Correlates of Alcohol-Related Discussions between Older Adults and Their Physicians

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Abstract

Objectives—To identify predictors of alcohol-related patient-physician discussions.

Design—Cross-sectional study using baseline data from a randomized controlled trial.

Setting—Community-based group practice.

Participants—31 physicians in the Project SHARE study and 3,305 of their patients ≥60 years who use alcohol and completed a survey which included the Comorbidity Alcohol Risk Evaluation Tool (CARET).

Measurements—At study baseline, we asked older adults whether alcohol-related discussions with a physician had occurred in the prior year. This outcome was modeled using logistic regression models with physician random effects. Predictor variables included patient-level variables such as demographics and seven CARET-defined risk factors, specifically a medical/psychiatric comorbidity that could be worsened by alcohol, a potentially alcohol-related symptom, use of a medication that may interact negatively with alcohol, excessive quantity/frequency of alcohol use, binge drinking, concern from others about drinking, and drinking and driving. Physician-level predictors (age, sex, years since graduation, specialty) were also included.

Results—The probability of reporting alcohol-related discussions declined with patient age (e.g., OR=0.40 for patients ≥80 years) and was significantly lower among Latinos (OR=0.38). Drinking and driving (OR=1.69) or concern from others (OR=6.04) were significantly associated with alcohol-related discussions; however, having comorbidities or using medications that may interact with alcohol were not.

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Conclusion—While patient demographics, including age and ethnicity, are associated with the occurrence of alcohol-related discussions, clinical factors that may negatively interact with alcohol to increase risk are not. This suggests that physicians may not be attuned to the entire spectrum of alcohol-related risks for older adults.

Keywords

Alcohol use; older adults; physician-patient discussions

INTRODUCTION

Approximately half of American adults aged 65 years and over drink alcohol regularly.[1] While heavy drinking is less common with advancing age, light or moderate drinking has different risks and benefits for older adults compared to younger populations.[2–5] Several observational studies have found that older adults who drink moderately have better cognitive function, a reduction in cardiovascular disease, and decreased mortality compared to non-drinkers.[6–10] Conversely, age-related physiologic changes in older adults may elevate the risk of alcohol-related complications such as falls. Older adults also have a greater number of comorbid conditions as well as use of prescription medications such as nonsteroidal anti-inflammatories and warfarin that interact with alcohol.[11–15] Current practice guidelines recommend that older adults be asked about their alcohol consumption annually.[1,16] However, practicing physicians screen infrequently for alcohol use and misuse, and physicians are particularly unlikely to discuss alcohol use with older adults.[17, 18] Within older adult populations, little is known about specific patient characteristics that are associated with differential rates of alcohol-related discussions with a physician.

Patient-physician discussions about alcohol use are a necessary step in identifying and subsequently counseling patients who may be at increased risk of adverse drinking-related consequences. However, physicians may differ in their perceptions about the barriers they face in initiating these discussions with their older patients. Specific obstacles that different physicians have reported in prior studies include lack of training and low self-efficacy in performing counseling,[19–21] skepticism about the benefits of counseling,[20, 22] belief that patients will not be candid about alcohol use,[22] lack of time,[22–25] the absence of counseling materials,[24] and a perceived inadequacy of treatment resources.[24,25] The relative importance of differences in physician factors versus patient factors as determinants of whether alcohol-related discussions occur has not been studied.

The current study analyzed baseline data from Project SHARE, a multi-component, randomized trial of an educational intervention designed to identify and reduce at-risk drinking among older adults. Among the overall population in the clinical site where Project SHARE was fielded, we examined whether several patient and physician characteristics predicted alcohol-related discussions prior to the intervention, in a setting that reflects usual care. In secondary analyses, we also estimated the variation in whether or not alcohol-related discussions took place that was attributable to differences between physicians, as opposed to differences between patients or random error.

METHODS

Participants and Recruitment

These analyses use cross-sectional data from a baseline screening survey administered to older adults who were potential participants in the randomized intervention phase of the Project SHARE study, as well as from a separate survey administered to their primary care physicians. Project SHARE (Senior Health and Alcohol Risk Education) is an intervention

designed to reduce at-risk drinking among older adults in 7 Sansum clinics, a community-based group practice in and near Santa Barbara, California. An appendix with full details of the Project SHARE recruitment protocols are available upon request from the authors. Briefly, clinic patients were eligible for the baseline screening survey if they were at least 60 years of age and met patient inclusion and exclusion criteria. Inclusion criteria were active drinking, defined as consuming at least one drink containing alcohol in the past three months, and being a patient of a Project SHARE physician. Exclusion criteria were severe cognitive impairment, terminal illness, an impending move to a skilled nursing facility or out of the area within the next year, not speaking English, or other reasons (e.g., physician preference).

Eligible patients then completed the baseline written survey, which was mailed between June 2005 and August 2007. The survey included demographic and clinical information as well as the Comorbidity Alcohol Risk Evaluation Tool (CARET), a screener for at-risk drinking. The CARET, an updated and revised version of the Alcohol-Related Problems Survey (ARPS)[2] identifies older adults at risk for harm from their alcohol consumption, based on their responses to a set of questions about their clinical status, medication use, and drinking habits. The physician survey gathered basic demographic information from the primary care physicians, specifically age, sex, years since graduation, and specialty type (internal medicine or family practice). The data provided by each primary care physician was linked to all of the participating study patients in his/her panel.

Measures

The dependent variable for this study was drawn from a patient survey item, “When did a doctor last discuss your alcohol use with you?” Patients were classified as having discussed alcohol with a physician if they reported having this discussion within the last 12 months. We incorporated several predictor variables in our analyses, including patient age, sex, race, ethnicity (Latino vs. non-Latino), income, education, and home ownership. In addition, we included each of seven patient factors indicating at-risk drinking as measured by the CARET. These risk factors were 1) having a medical/psychiatric condition that could be worsened by alcohol (e.g., high blood pressure, depression, etc.); 2) having a symptom that could be potentially related to alcohol (e.g., memory problems, falling/accidents); 3) taking a medication that may interact negatively with alcohol (e.g., non-steroidal anti-inflammatory drugs, benzodiazepines); 4) excessive quantity and frequency of alcohol use (generally drinking >2 drinks per day); 5) binge drinking, defined as >4 drinks at one sitting; 6) having others who were concerned about the patient's drinking, and 7) driving within 2 hours of having had three or more drinks. Finally, we also included physician age, sex, and specialty, as recorded on the physician survey.

Statistical Methods

Our main analytic goal was to determine the correlates of alcohol-related discussions with a physician as reported by older adult patients in primary care. In all analyses, we included both patients who were at-risk drinkers as classified by the CARET as well as those who were not at-risk. We used two sided p-values, and designated a threshold of $p<0.05$ to denote statistical significance in all analyses. All analyses were performed using STATA/IC version 10.1.

We first examined the univariate distributions of all variables. Six percent of patients were missing data on one or more covariates, and were dropped from the analyses. We constructed a logistic regression model with random physician effects. We included a “mean-centered” variable for past-year physician visits together with a squared term of this variable in the model. Results are presented as odds ratios (OR) and 95% confidence

intervals (CI) for all covariates; in addition, we calculated predicted probabilities associated with statistically significant findings in order to more accurately represent their magnitude. As a sensitivity analysis, we estimated the same regression after performing multiple imputation. We multiply imputed five separate datasets using STATA 10.1, and combined the regression estimates. We calculated overall variance estimates that included within-imputation variance as well as between-imputation variance. The pattern of statistical significance among the predictor variables was unchanged after multiple imputation, and therefore we report only the results from the complete case analysis.

In order to estimate how much of the variation in the occurrence of alcohol-related discussions was attributable to differences between physicians, versus differences between patients or random error, in secondary analyses we also evaluated the sum of squared residuals from models including different combinations of patient and physician variables. This approach of partitioning the variance between patients and physicians incorporates measured predictors as well as “unmeasured” variables, and is not dependent on sample size or the precision of regression estimates. A technical appendix with full details of these models and analyses is available upon request from the authors.

RESULTS

A total of 9,416 older adults receiving care in the Sansum clinics were contacted about the Project SHARE study. Of these patients initially contacted, 6,919 participated in the telephone screener and 4,217, or 60.9%, met eligibility criteria for the study. Of the 4,217 patients who met eligibility criteria, 3,529 completed the survey. If the unknown eligibility rate among the 2,497 patients who were not screened were the same as the eligibility rate among the patients who were screened, the overall survey response rate among all contacted patients [3,529 / (4,217 + 1,521)] would be approximately 62%.

After excluding patients with missing data for covariates (n=224), the final sample size in the complete-case analyses was 3,305. Approximately 5% of patients were missing data on income, and missing data was less than 2% for all other variables. Patients who were excluded due to missing data were somewhat older, more likely to be widowed, and had less education than patients who were included in the analysis.

Among the included sample, the majority of patients were white, well-educated, and owned their own home (Table 1). The frequency of factors indicating at-risk drinking varied. Approximately 21% of patients used a medication that may interact negatively with alcohol, 16% reported symptoms that were potentially alcohol-related, and 14% had a medical or psychiatric comorbidity that could be worsened by alcohol. Only 7% of patients reported binge drinking regularly.

All 31 of the primary care physicians caring for these patients completed the parallel physician survey. The average age of these physicians was 49 years, and 36% were female (data not shown). Approximately 36% had graduated from medical school more than 20 years ago, and 45% were family practitioners while 55% were general internists (data not shown). Table 1 shows the baseline characteristics of patients by at-risk drinking status. Patients were predominantly white and well-educated. The most common reasons for at-risk drinking classifications were the use of medications that may interact negatively with alcohol, medical or psychiatric comorbidities that could be worsened by alcohol, or having symptoms that could potentially be related to alcohol use.

Overall, 11.1% of patients reported having had an alcohol-related discussion with a physician in the prior 12 months. Compared to patients 60 to 64 years of age, the probability of reporting having had alcohol-related discussions was lower for patients who were 75 to

79 years old (OR = 0.58; 95% CI = 0.38, 0.88; predicted probabilities = 8.9% vs. 12.8%) and 80 years and over (OR = 0.40; 95% CI = 0.25, 0.64; predicted probabilities = 7.0% vs. 12.5%) (Table 2). Compared to non-Latinos, Latinos were less likely to report having had these discussions (OR = 0.38, 95% CI = 0.18, 0.77; predicted probabilities = 4.8% vs. 10.6%).

Examining predictors of alcohol-related discussions at study baseline (Table 2), two measures of at-risk drinking were associated with differences in the likelihood of having discussed alcohol use with a physician. These were concern expressed by another person about the subject's alcohol use versus those for whom no concern was reported (OR = 6.04; CI = 4.27, 8.55; predicted probabilities = 29.9% vs. 7.2%), and drinking and driving compared to those who do not drink and drive (OR = 1.69; CI = 1.20, 2.40; predicted probabilities = 14.2% vs. 9.4%). No other variables, including physician-level variables, were statistically significant predictors in the model.

In secondary analyses, we found that only a small minority of the variation in alcohol-related discussions (approximately 5%) was attributable to physician characteristics, while the majority of variation was attributable to patient characteristics and/or random error (data not shown). A full description of the results from these secondary analyses is available as a technical appendix from the authors, on request.

DISCUSSION

This study identified several significant clinical and demographic predictors in a population of older adults who are current drinkers, including both those at-risk and not-at-risk. While patient-level predictors of physician screening for at-risk alcohol use have been reported among the general population,[17] predictors of physician-patient discussions about alcohol have not previously been examined among older adults. Our finding that the oldest patients (those 75 years and over) have a lower predicted probability of discussing alcohol use with a physician as compared to younger patients raises concern, since older patients are most likely to have significant comorbidities and medications which increase the risk of potential harm resulting from light or moderate drinking. The finding of a lower predicted probability of alcohol-related discussions with older Latinos is also concerning, as prior work has reported that 3.4% of Latinos aged 50 years and over are heavy alcohol users and 14.1% report binge drinking, rates similar to those for whites and blacks.[26]

Drinking and driving, as well as concern from others about patient alcohol consumption, were significant predictors of alcohol-related discussions. Discussions in these situations may be prompted by family members and/or friends of the patient who recognize the potential for harm. In contrast, the risks posed by drinking in the context of high-risk medical comorbidities, use of high-risk medications, and the presence of symptoms such as insomnia are not as obvious, and may not be recognized by patients or their families.

Although multiple physician-level barriers are reported in the literature,[19–24] our finding that only about 5% of the variation in alcohol-related discussions is attributable to physician characteristics indicates that differences between individual patients are key predictors of whether such discussions take place. In other words, physician-reported barriers alone, such as a perceived lack of time or the belief that patients will not be candid about their alcohol use,[27] do not explain why the overall rate of alcohol-related discussions is so low. Therefore, efforts to increase the frequency of alcohol-related discussions may be most effective if they focus on understanding how certain patient characteristics, either alone or in combination with physician-reported barriers, influence whether the majority of physicians will initiate a discussion with a patient about alcohol use. For example, a busy physician

running behind schedule, with preexisting beliefs about alcohol use and its related risks among different subgroups of older adults, may be more likely to initiate a discussion about the risks and benefits of moderate alcohol intake with a 60-year old white man than with an 80-year old Latino man.

Of note, prior work indicates that patients are also responsible for initiating some alcohol-related discussions in usual practice settings.[28] Particularly motivated patients may broach this topic on their own, or with prompting from family members or friends, resulting in a subsequent discussion that takes place regardless of the level of physician comfort in this area. As noted above, physicians may perceive that older adults without obvious signs and symptoms related to heavy drinking may experience some of the health benefits associated with moderate alcohol use while being at minimal risk of alcohol-related complications. In these situations, if patients do not raise the issue of alcohol use, physicians may defer or avoid initiating these discussions in favor of addressing some of the other acute and/or chronic care issues pertinent to the care of older adults.

This analysis has several limitations. First, the baseline survey did not specify whether patients had discussed their alcohol use specifically with their primary care physician. If patients reported having had these discussions with a provider other than their primary care physician, there may have been minor misclassifications in the proportion of variation due to patient-level versus physician-level characteristics. Second, the frequency of alcohol-related discussions was determined by patient self-report rather than medical record review. However, the medical record may not be an appropriate gold standard, since many physicians do not document alcohol-related discussions in the medical record.[29] Third, although we found no association between several specific risk factors and the predicted probability of alcohol-related discussions, we studied this association over a 12-month period. Patients who received counseling early in that time period due to a specific risk factor (e.g. excessive quantity and frequency of drinking) may have reduced their drinking as a result and therefore not have been identified as an “at-risk drinker” at the time of the interview. Fourth, since we excluded non-drinkers from the analysis, these findings may not be generalizable to overall patient populations which include both drinkers and non-drinkers. Finally, this study included primarily white, well-educated patients in a relatively affluent area, and may not be generalizable to other settings.

In summary, analyses at baseline of the Project SHARE intervention found that adults 75 years and older and Latinos had lower predicted probabilities of alcohol-related discussions with a physician. However, the presence of coexisting clinical factors that are associated with increased risk of light or moderate drinking, such as medications or comorbidities that may interact negatively with alcohol, did not prompt such discussions. This suggests that community physicians may not be attuned to the entire spectrum of alcohol-related risks for older adults.

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TECHNICAL APPENDIX FOR REVIEWERS

We constructed sequential models to determine the proportion of variation in alcohol-related discussions attributable to differences between patients compared to differences between physicians. These included 1) a model with a constant but no additional predictors (base model), 2) a model with measured physician characteristics, 3) a model with physician fixed effects (to capture the variation attributable to both measured and unmeasured physician characteristics), 4) a model with both measured physician characteristics and measured patient characteristics, and 5) a model with both physician fixed effects and measured patient characteristics. The model with physician fixed effects captures all physician-related variation in the occurrence of these discussions, with the remainder of the variation attributable to either patient-related characteristics or measurement error. We calculated the sum of squared residuals (SSR) for each model, as a measure of the unexplained variation after adjustment for the predictors in that specific model. We then compared the differences in the SSRs across the six models to determine the variation in the occurrence of alcohol-related discussions that was attributable to measured physician characteristics, unmeasured physician characteristics, measured patient characteristics, and unmeasured patient characteristics. We assumed that after accounting for a model with fixed physician effects (which accounts for all measured and unmeasured "between-physician" differences) the remainder of the variation would be attributable to differences between patients plus measurement error.

As shown in the Table below, approximately 5% of the variation in alcohol-related discussions between patients was attributable to physician characteristics, both those measured in the dataset (physician age, sex, specialty) and those not measured in the dataset that are constant across patients. Over 95% of the variation in alcohol-related discussions was explained by measured patient characteristics (17.1 percent) together with unmeasured patient characteristics plus random error (78.3 percent).

Table

Variation in the Occurrence of Alcohol-Related Discussions Attributable to Differences between Patients versus Differences between Physicians

	Variables included in model	**Sum of Squared Residuals (SSR)**	**Difference in SSR from base model**	**Approximate % Variation in Discussions**
Model 1 (base model)	Regression with constant term but no additional predictors (determines total variance)	343.0	….	
Model 2	Adding only *measured* physician characteristics (e.g., age, sex, specialty)	340.7	• (343.0 − 340.7) = 2.3 • 2.3 / 343.0 = **0.7%** from measured physician characteristics	0.7% + 3.8% = ~**4.5%** due to all differences between physicians (measured + unmeasured)
Model 3 (physician fixed-effects model)	Adding only *unmeasured* physician characteristics	326.8	• (343.0 − 326.8) = 13.2 • 13.2/343.0 = **3.8%** from unmeasured physician characteristics	
Model 4	Adding *measured* physician characteristics and	281.9	• 343.0 − 281.9 − 2.3 / 343.0 = **17.1%** from	17.1% + 78.4% = ~**95.5%** due to all differences between

	Variables included in model	Sum of Squared Residuals (SSR)	Difference in SSR from base model	Approximate % Variation in Discussions
	measured patient characteristics		measured patient characteristics	patients (measured + unmeasured), plus measurement error
Remainder of variation (from Model 5)*			• (343.0 − 2.3 − 13.2 − 58.8) / 343.0 = **78.4%** from unmeasured patient characteristics + error	

*(Total variation – component from measured physician characteristics − component from unmeasured physician characteristics − component from measured patient characteristics) = component from unmeasured patient characteristics + error

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Table 1

Baseline Patient Characteristics

Patient characteristics (n=3,305)	
Age	
60–64 years (n=670)	20.3%
65–69 years (n=841)	25.5%
70–74 years (n=641)	19.4%
75–79 years (n=535)	16.2%
≥80 years (n=618)	18.7%
Race	
White (n=3,184)	96.3%
Black (n=19)	0.6%
Asian/Pacific Islander (n=51)	1.5%
American Indian (n=51)	1.5%
Ethnicity	
Latino (n=189)	5.7%
Non-Latino (n=3,116)	94.3%
Sex	
Male (n=1,711)	51.8%
Female (n=1,594)	48.2%
Education	
Less than high school graduate (n=71)	2.1%
High school graduate (n=372)	11.2%
Some college (n=971)	29.4%
College graduate (n=813)	24.6%
Graduate degree (n=1,078)	32.6%
Marital Status	
Married (n=2381)	72.0%
Widowed (n=445)	13.5%
Divorced or separated (n=393)	11.9%
Never married (n=86)	2.6%
Annual income	
<$30,000 (n=435)	13.2%
$30,000–$40000 (n=343)	10.4%
$40,000–$60,000 (n=609)	18.4%
$60,000–$80,000 (n=566)	17.1%
$80,000–$100,000 (n=438)	13.3%
$100,000–$200,000 (n=668)	20.2%
>$200,000 (n=246)	7.4%
Owns home	

Patient characteristics (n=3,305)	
Yes (n=2,881)	87.2%
No (n=424)	12.8%
Visited a physician in the past year (SD)	5.6 (5.5)
Visited a physician in the past year (mean-centered, SD))	0.05 (5.5)
Patient indicators of at-risk drinking	
Uses medication(s) that may interact negatively with alcohol	21.2%
Has medical/psychiatric comorbidity that could be worsened	13.7%
Reports symptoms that are potentially alcohol-related	16.1%
Excessive quantity and/or frequency of alcohol use (n=426)	12.9%
Reports binge drinking regularly at least once per week	7.0%
Others are concerned about patient's drinking (n=343)	10.4%
Drives within 2 hours of having ≥3 drinks (n=369)	11.2%

Table 2

Predictors of Self–Reported Alcohol-Related Discussions with a Physician (n=3,305)

	Odds Ratio (95% CI)
Patient characteristics	
Patient age	
65–69 years	0.78 (0.56, 1.09)
70–74 years	0.70 (0.48, 1.02)
75–79 years	0.58 (0.38, 0.88)*
≥80 years	0.40 (0.25, 0.64)*
Patient race	
Black	0.23 (0.03, 1.98)
Asian/Pacific Islander	1.68 (0.72, 3.91)
American Indian	1.41 (0.61, 3.32)
Patient ethnicity	
Latino	0.38 (0.18, 0.77)*
Patient sex	
Female	0.80 (0.60, 1.06)
Patient education	
High school graduate	0.65 (0.26, 1.61)
Some college	0.87 (0.37, 2.04)
College graduate	0.74 (0.31, 1.75)
Graduate degree	0.96 (0.41, 2.26)
Patient indicators of at-risk drinking	
Uses medication(s) that may interact negatively with alcohol	1.14 (0.81, 1.60)
Has medical/psychiatric comorbidity that could be worsened by	0.87 (0.59, 1.27)
Reports symptoms that are potentially alcohol-related	1.34 (0.89, 2.04)
Excessive quantity and/or frequency of alcohol use	1.54 (0.93, 2.55)
Reports binge drinking regularly at least once per week	0.74 (0.46, 1.19)
Others are concerned about patient's drinking	6.04 (4.27, 8.55)*
Drives within 2 hours of having ≥3 drinks	1.69 (1.20, 2.40)*
Physician characteristics	
Physician is an internal medicine doctor	0.67 (0.39, 1.14)
Physician is female	1.22 (0.66, 2.24)
Physician age	0.99 (0.97, 1.02)

Regression model includes both at-risk and not at-risk adults at baseline, prior to the intervention.

Reference categories: patient age 60–64 years, white race, non-Latino ethnicity, male sex, less than high school graduate (patient characteristics), does not use medications that interact with alcohol, no medical conditions, no symptoms, no excessive quantity and/or frequency, no binge drinking, others not concerned about drinking, does not drink and drive (patient indicators of at-risk drinking); family practice physician, male physician (physician characteristics)

Covariates include patient income, home ownership, and a mean-centered variable of physician visits in the past year (both main effect and squared terms included).

* $p<0.05$