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# *Effects of Gender, Ethnicity, and Medical Illness on Drinking Cessation in Older Primary Care Patients*

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**Objective:** This study examined the effects of gender, ethnicity, and medical illness on cessation of alcohol consumption in late life by analyzing characteristics that distinguish current drinkers from former drinkers. **Method:** Participants were 211 medical patients aged 55 to 91 years, recruited from four urban public sector primary care clinics. Respondents completed the Short Michigan Alcohol Screening Test and provided health and demographic data. A subset ( $n = 139$ ) reported drinking history. Of these participants, 40% reported cessation of alcohol consumption at least 1 year prior to their participation in the study. **Results:** Older age, hypertension, and heart problems were associated with drinking cessation among women but not among men. In a logistic regression model, drinking cessation was predicted by being unmarried, being a member of an ethnic minority group, heart problems, and diabetes. **Discussion:** Physical illnesses may contribute to drinking cessation, especially in older women. Results have implications for alcohol interventions with older adults.

**Keywords:** *alcohol; substance abuse; gender; older adults; primary care*

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*Longitudinal studies* indicate that some older adults reduce or eliminate alcohol consumption over time (Bucholz, Sheline, & Helzer, 1995). This reduction may be motivated in part by health concerns (Stall, 1986). Older adults who do drink above recommended levels may exacerbate health conditions, such as heart disease, diabetes, hypertension, stroke, peptic ulcers, and liver disease (Blow et al.,

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2000; Eckhardt et al., 1981). Because of age-related increased sensitivity to the effects of alcohol, quantities of alcohol consumption considered moderate in younger samples pose a risk to older adults (Center for Substance Abuse Treatment, 1998). Therefore, medical providers may encourage older patients to reduce or eliminate alcohol consumption.

In community samples, rates of current drinking range from 31% to 71%, whereas drinking problems range from 1% to 9% (Bucholz et al., 1995). A large multisite study of drinking by older adults in primary care found that 15% of men and 12% of women regularly drank in excess of limits recommended by the National Institute on Alcohol Abuse and Alcoholism (more than 7 drinks per week for women and more than 14 drinks per week for men; Adams, Barry, & Fleming, 1996). On the other hand, many older adults are likely to cut down or stop drinking as they age (Adams, Garry, Rhyne, Hunt, & Goodwin, 1990), although reasons for elimination of alcohol consumption are not well studied.

Community studies have examined demographic factors in drinking cessation. One study found that reduction or cessation was associated with being female and having lower education (Dunham, 1981). Most frequently cited reasons for drinking cessation or reduction after 50 years of age included health problems (40%), lost interest in drinking (13%), and fewer social opportunities (10%). In other community samples, history of heavy alcohol consumption has also been associated with greater reduction in drinking as well as cessation (Adams et al., 1996; Hermos, Locastro, Glynn, Bouchard, & De Labry, 1988). These findings indicate that problematic drinking levels are more likely to be reduced or eliminated than low-level consumption.

The limited research on alcohol use among older women suggests that there are late-life gender differences in consumption patterns and health behavior (Wilsnack, Vogeltanz, Diers, & Wilsnack, 1995). Women may be more concerned than men about alcohol's negative

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effects (Laforge, Williams, & Dufour, 1990; Satre & Knight, 2001). Older women may have higher abstinence rates than older men following formal alcohol dependence treatment (Satre, Mertens, & Weisner, 2004; Satre, Mertens, Areán, et al., 2004). Older women are more likely to have chronic health conditions than men and are more vulnerable to the effects of alcohol (Blow, 2000; National Institute on Alcohol Abuse and Alcoholism, 2000). Therefore, women may be more likely than men to stop drinking in late life in association with health problems.

In the United States, older members of minority groups tend to drink less than non-Hispanic Whites, although variation exists between groups. Lower levels of alcohol consumption in minority communities may be because of a combination of medical, cultural, and religious factors. Health of older minorities is generally worse than older non-Hispanic Whites, particularly for elderly African Americans and Hispanics and may be more severely affected by heavy alcohol consumption (Gomberg & Nelson, 1995). Religious practices may also have greater influence in minority communities (Krause, 2003). Blacks and Hispanics have reported more conservative social norms regarding alcohol consumption than non-Hispanic Whites (Galvan & Caetano, 2003). As a result, minority status may be associated with greater levels of drinking cessation.

Identifying correlates of drinking cessation among older adults has the potential to explain abstinence patterns and inform intervention in health care settings. Brief interventions for older patients in these contexts may strongly rely on health data to encourage drinking reduction (Blow & Barry, 2000). Preliminary evidence suggests that medical problems may help motivate drinking cessation among older adults. However, research is mostly limited to community samples and has not examined differences by gender and ethnicity. In addition, the effect of specific health problems on cessation of alcohol consumption has not been investigated. The present study explores possible gender and ethnic differences in these correlates in a sample of urban primary care patients. We hypothesized that compared to current drinkers, former drinkers would be more likely to have serious health problems. For women, drinking cessation may be more strongly associated with the presence of serious health conditions. Minority status may also be associated with drinking cessation. We hypothesized that

in a regression model, these variables together would explain a significant proportion of variance in drinking cessation.

### *Method*

#### *SAMPLE AND PROCEDURES*

Data for this analysis were drawn from an epidemiological study of psychiatric disorders in late life (Areán & Alvidrez, 2001). Study participants were adults aged 55 years and older who had attended one of four public sector primary care clinics in San Francisco for at least 6 months and were English- or Spanish-speaking. These urban clinics serve a low-income population with multiple medical problems. Trained research assistants examined clinic daily rosters to identify adults aged 55 years and older and approached them in the clinic waiting room to explain the purposes of the study. Patients who agreed to participate (211 of 300 adults who were approached, or 70% recruitment rate) then scheduled appointments at home, the clinic, or research offices, where research assistants orally administered physical and mental health screening instruments. Average yearly income for the sample was \$11,000. Patients had an average of 2 acute illnesses ( $SD = 2$ ) and 3.2 chronic illnesses ( $SD = 2.9$ ). The study found that 25% met criteria for at least one Axis I disorder. An additional 44% had a subsyndromal mental illness (Areán & Alvidrez, 2001).

The current study examined health, drinking-related problems, and drinking cessation in the sample. Demographic measures, health problems, and a measure of alcohol-related problems, the Short Michigan Alcohol Screening Test (SMAST), were completed by the full sample. Drinking history data were collected on 139 of the 211 participants because questions regarding drinking status were added after the process of data collection had begun. Differences between participants with missing data on this item and those not missing the item were examined to test for possible sampling bias. No differences were found by age, sex, or ethnicity. No differences between the two groups were found on SMAST, nor were there differences in reporting of physical illness. For further description of study procedures, see Areán and Alvidrez (2001).

*MEASURES AND DATA ANALYSIS*

Participants in the study were administered a demographic questionnaire, questions regarding current medical conditions and use of alcohol, and SMAST. Demographic items included sex, age, education, ethnicity (African American, Asian American, Hispanic, non-Hispanic White or other), and marital status (married, separated, divorced, widowed, or never married). Alcohol-use questions asked if patients were lifetime abstainers, had quit drinking more than 10 years ago, had quit more than 1 year ago, or were current drinkers. For the purposes of comparison to current drinkers, the participants who indicated that they had quit either 10 years ago or 1 year ago were combined in one group labeled *past drinkers*. No differences between participants who quit drinking more than 1 year ago and those who quit more than 10 years ago were found in age, ethnicity, SMAST score, or reported health problems.

Participants were asked to indicate if they had been diagnosed with several major late life illnesses associated with excessive alcohol use: diabetes, heart problems, hypertension, or stroke. There was also a yes or no question about the stress they experience around health problems ("Do you find it difficult to deal with your illness?"). The SMAST was used as a measure of problem drinking. This scale includes 13 true or false questions regarding alcohol problem indicators. The SMAST has acceptable reliability and validity, as well as adequate sensitivity and specificity in detecting lifetime presence of an alcohol disorder and has been used in primary care and ambulatory care settings (Hays & Revetto, 1992; Willenbring, Christensen, Spring, & Rasmussen, 1987; Zung, 1979). A score of 3 or higher on the SMAST is considered indicative of a possible drinking problem (Selzer, Vinokur, & van Rooijen, 1975; Willenbring et al., 1987). The SMAST question regarding alcohol treatment, "Have you ever gone to anyone for help about your drinking (yes or no)?" served as a rough measure of alcohol treatment history. In addition, participants were asked, "Do you ever attend Alcoholics Anonymous (yes or no)?"

Chi-square tests and *t* tests were conducted to examine gender and ethnic differences in alcohol history, SMAST scores, and prevalence of problem drinking (SMAST score  $\geq 3$ ). Correlates of drinking cessation were then examined. Cross-tabulations with chi-squares and *t*

tests, run separately by gender, first tested if current and past drinkers differed by minority group status, age, marital status, education, health problems, and alcohol treatment. Then, a logistic regression model predicting drinking cessation was tested to examine the relative importance of demographic characteristics and health problems. Demographic items were entered in the first step, and health items second.

### *Results*

*Demographic characteristics.* Age range of the sample was 55 to 91 years old, with a mean age of 67.8 years (7.4). There were 79 women and 132 men in the sample. By ethnic group, 47.2% were non-Hispanic White, 14.6% African American, 17.9% Hispanic, 14.2% Asian American, 4.7% other ethnicity, and 1.4% missing data. Approximately 182 participants completed measures in English and 29 in Spanish. Average income of the sample was approximately \$11,000. Education ranged from 0 to 22 years, with a mean of 12 years ( $SD = 4.6$ ).

*Alcohol measures.* The SMAST was completed by 203 study participants. Scores ranged from 0 to 13, with a mean score of 2.16 ( $SD = 3.12$ ). Men scored significantly higher on the SMAST, with a mean of 2.84 ( $SD = 3.36$ ), than did women, who had a mean of 0.92 ( $SD = 2.14$ ),  $p < .001$ . This placed the average male participant just at the cut-off score for a possible drinking problem (a score of 3 or higher), whereas the average female participant was well below the cutoff.

Of the participants providing alcohol use data ( $n = 139$ ), 41.7% reported drinking in the past year, 18.7% more than 1 year ago, 17.3% more than 10 years ago, and 22.3% said that they never drank. Of those individuals who reported drinking in the past year, SMAST scores averaged 1.98 ( $SD = 2.98$ ), with 29% scoring in the problem-drinking range. Women were no more likely than men to report current alcohol use. However, women were more likely to report lifetime abstinence from alcohol,  $\chi^2(1, N = 139) = 21.84, p < .001$ . Among former drinkers ( $n = 50$ ), men scored an average of 3.74 ( $SD = 3.95$ ) on SMAST, whereas women scored an average of 1.13 ( $SD = 2.37$ ), a sig-

Table 1  
Prevalence of Current Alcohol Use by Gender (N = 139)

Alcohol History	All n (%)	Women n (%)	Men n (%)
Current drinker	58 (41.7)	20 (32.8)	38 (48.7)
Former drinker	50 (36.0)	16 (26.2%) <sup>a</sup>	34 (43.6%) <sup>a</sup>
Never drank	31 (22.3)	25 (41.0)	6 (7.7%) <sup>b</sup>

a. Men are more likely than women to be former drinkers,  $p < .01$ .

b. Women are more likely than men never to have drunk (lifetime abstainers),  $p < .001$ .

nificant difference,  $p = .02$ . Using the standard SMAST cutoff score of 3, this indicates that the typical male former drinker had a possible drinking problem, whereas the typical female former drinker did not (see Table 1).

*Correlates of drinking cessation.* Differences in predictors of drinking cessation were examined separately by gender. For men, age and marital status were not significant. Ethnic minority participants were combined in one group for comparison with non-Hispanic Whites because of small cell size for individual ethnic minority groups. Analysis of drinking cessation by minority group status revealed that non-Hispanic White men were significantly less likely to report drinking cessation than minority men,  $\chi^2(1, n = 107) = 8.82, p = .002$ . Men who reported drinking cessation were more likely to report being diagnosed with diabetes,  $\chi^2(1, n = 71) = 4.42, p = .036$ . Effect of heart problems did not reach level of significance,  $\chi^2(1, n = 72) = 3.37, p = .056$ . Drinking cessation was not associated with hypertension or stroke. There were no differences among current and former drinkers in reported difficulty in managing illness (see Table 2).

Differences in correlates of drinking cessation between non-Hispanic White and minority males were examined. In the sample as a whole, minority group men had higher rates of diabetes,  $\chi^2(1, N = 128) = 4.87, p = .02$ , which may have motivated abstinence from alcohol. Minority group men had less education, with a mean of 11.02 years ( $SD = 4.36$ ), than non-Hispanic White men, who had a mean of 13.55 years ( $SD = 4.35$ ),  $t(129,1) = 3.33, p = .001$ .

Among women, former drinkers tended to be older, with a mean age of 69.88 years ( $SD = 6.51$ ), as compared to current drinkers, who



Table 2  
*Health Correlates of Drinking Cessation by Gender (n = 108)*

<i>Health problem</i>	<i>Female Drinkers (n = 36)</i>		<i>Male Drinkers (n = 72)</i>	
	<i>Former n (%)</i>	<i>Current n (%)</i>	<i>Former n (%)</i>	<i>Current n (%)</i>
Diabetes	5 (31.3)	2 (10.0)	14 (41.2)	7 (18.9)*
Heart problems	8 (50.0)	3 (15.0)*	15 (44.1)	9 (23.7)
Hypertension	10 (62.5)	5 (25.0)*	12 (35.3)	14 (36.8)
Stroke	0 (0.0)	0 (0.0)	8 (26.7)	4 (10.8)

*Note:* This table includes participants who reported either current or past drinking ( $n = 108$ ): 16 female former drinkers and 20 current drinkers; 34 male former drinkers and 38 current drinkers. This table excludes lifetime abstainers ( $n = 31$ ). Within gender, prevalence of specific illnesses were compared between current and former drinkers, using chi-square.

\* $p < .05$ .

had a mean age of 64.95 years ( $SD = 6.51$ ),  $t(34,1) = 2.48$ ,  $p = .018$ . There were no differences by minority group status or marital status in the association of drinking cessation for women. Drinking cessation among women was associated with greater reported heart problems,  $\chi^2(1, N = 36) = 5.13$ ,  $p = .028$ , and hypertension,  $\chi^2(1, N = 36) = 5.143$ ,  $p = .026$ .

There were no significant differences between current and former drinkers in alcohol treatment or Alcoholics Anonymous (AA) attendance. Among women, 17% of current drinkers and 13% of former drinkers reported AA attendance (n.s.); 17% of current drinkers and 7% of former drinkers said they had sought help for drinking (n.s.). Among men, 34% of current drinkers and 33% of former drinkers reported AA attendance (n.s.); 20% of current drinkers and 21% of former drinkers said they had sought help for drinking (n.s.).

In a hierarchical logistic regression model predicting drinking cessation, we entered demographic factors and health measures (see Table 3). The demographic factors of age, sex, minority group status, and marital status were entered at Step 1, followed by diabetes and heart problems at Step 2. At Step 1, minority group status and marital status (nonmarried) were significant predictors of drinking cessation. The model at Step 1 was significant,  $\chi^2(4, N = 106) = 14.56$ ,  $p = .006$ , Cox & Snell pseudo- $R^2 = .14$ . When heart disease and diabetes were entered into the model in Step 2, both variables predicted cessation of

Table 3  
 Summary of Hierarchical Logistic Regression Analysis for Variables Predicting Drinking Cessation (N = 106)

Variable	OR	95% CI
Step 1		
Age	1.03	(0.97, 1.09)
Sex (female)	1.10	(0.46, 2.66)
Not married*	2.94	(1.08, 7.99)
Ethnicity***	4.91	(1.97, 12.20)
Step 2		
Age	1.03	(0.97, 1.10)
Sex (female)	1.01	(0.38, 2.67)
Not married**	5.31	(1.66, 16.99)
Ethnicity**	4.83	(1.78, 13.06)
Diabetic**	4.49	(1.48, 13.64)
Heart Problems**	4.12	(1.51, 11.20)

Note: OR = odds ratio; CI = confidence interval; Ethnicity = member of a minority ethnic group. Cox & Snell pseudo- $R^2$  = .13 for Step 1; Cox & Snell pseudo- $R^2$  = .25 for Step 2. \* $p$  < .05. \*\* $p$  < .01. \*\*\* $p$  < .001.

drinking. Ethnicity and marital status remained significant. For Step 2,  $\chi^2$  (6,  $N$  = 106) = 30.72,  $p$  < .001, Cox & Snell pseudo- $R^2$  = .25.

### Discussion

*Prevalence and correlates of current drinking.* This study examined effects of medical problems on cessation of drinking in late life and differences in these associations by gender and ethnicity. In this sample of primary care medical patients, about 42% of those with alcohol history data reported current drinking, a rate similar to results from a larger primary care sample (Blow et al., 2000). About one third of current drinkers (14% of the sample as a whole) had SMAST scores indicating a possible drinking problem. This rate is higher than that observed in general population studies of older adults but within the range of prevalence findings from clinical population samples (Buchholz et al., 1995). As other studies have found, men were less likely to report lifetime abstinence and scored significantly higher than women on a measure of problem drinking.

For both men and women, health problems were associated with drinking cessation. This finding is consistent with studies showing

that former drinkers have worse health than either current drinkers or lifetime abstainers, across all ages (Rice et al., 2000). Although particular health problems appeared to interact with gender in predicting drinking cessation in the current study, men, as well as women, may have given up drinking in response to health concerns. Within the sample as a whole, medical diagnoses (diabetes and heart problems) were considerably more powerful than age of participants in predicting drinking cessation. This is consistent with findings of past studies, which found that older adults report reduction in drinking or seeking help for alcohol problems in response to health concerns (Busby, Campbell, Borrie, & Spears, 1988; Dunham, 1981). In these previous studies, drinking cessation was associated with self-reported concern about health. The current study links drinking cessation to the presence of specific illnesses. In contrast, past treatment seeking for alcohol problems or current attendance at AA showed no association with drinking cessation. Although these measures are only rough indicators of access to treatment, the difference in these findings (effects of treatment vs. effects of health) might indicate that in this primary care population, the presence of serious health problems provides greater motivation to stop drinking than contact with treatment services or self-help programs.

Alcohol interventions for older adults have emphasized the role of health education in primary care settings to encourage reduction or elimination of alcohol consumption (Center for Substance Abuse Treatment, 1998). For clinicians engaged in motivational interviewing and brief intervention with older adults with problem drinking, the results of the current study suggest that older adults are willing to reduce consumption in response to particular diagnoses. In the current study, it is not known if participants' physicians specifically recommended elimination of alcohol consumption in connection with medical treatment, if they received alcohol problem treatment, or if patients stopped drinking on their own. Prior studies have found that 10% to 30% of problem drinkers who were not alcohol dependent reduced their alcohol consumption after a single brief intervention (Fleming, Barry, Manwell, Johnson, & London, 1997; Fleming, Manwell, Barry, Adams, & Stauffacher, 1999). For older adults, information regarding health consequences of drinking may be a central component of these interventions (Blow & Barry, 2000). Likewise, older

adults in formal alcohol treatment are more likely than younger patients to report that a physician encouraged them to seek help to reduce drinking (Satre, Mertens, Areán, & Weisner, 2003). These previous findings and the results of the current study provide support for the idea that physicians have an opportunity to counsel older adults to reduce problematic drinking. When a serious illness is present, the urgent need to reduce or eliminate drinking gives health care providers additional credibility in this role.

*Gender differences.* It was hypothesized that for women, cessation of drinking might be more strongly associated with health problems than among men. There was a gender difference in significance level on some analyses. However, results suggest that health problems play a role in cessation of drinking for both men and women. Because of the small sample size and limited number of illnesses investigated in the current analysis, it is clear that specific gender differences in late life motivation around alcohol use need further investigation. The fact that greater age was associated with drinking cessation for women but not for men also suggests that age may interact with gender in a way that the current study did not measure. For example, older women tend to have greater levels of physical disability than older men (National Center for Health Statistics, 1994). Such disability, associated with fear of falling or adverse medication interactions, could potentially influence drinking cessation among older women.

*Differences by minority status.* The prevalence of current drinking among non-Hispanic White study participants was higher than among minority participants, consistent with previous findings (Bucholz et al., 1995; Krause, 2003). From a primary care perspective, such a pattern may be at odds with physicians' perceptions of drinking prevalence. For example, doctors screening for older people's alcohol use tend to assume that non-Hispanic Whites, women, and better educated individuals are less likely to drink (Curtis, Geller, Stokes, Levine, & Moore, 1989; Moore et al., 1999). Findings of the current study suggest that this misperception may lead to overlooking drinking problems of older non-Hispanic White men and better educated individuals.

Factors associated with minority group status did not explain this difference in drinking cessation between non-Hispanic White males and minority males. Regression analysis showed that the racial disparity in drinking cessation in the current study was not diminished by the effect of higher prevalence of diabetes in minorities. This raises the possibility that older non-Hispanic White males are less responsive to the health implications of their alcohol consumption than men of other ethnic groups. Alternatively, there may be cultural or religious factors associated with minority status and drinking cessation that the current study did not measure.

*Limitations and strengths of the study.* The study is subject to several limitations. As noted above, the relatively small sample size likely limited the ability of the analyses to detect significance on some measures. For example, substantial effect sizes on chi-square comparisons of current and former drinkers on diabetes (among women) and heart problems (among men) were not accompanied by statistical significance (Table 2). For this reason, results of these analyses should be considered preliminary. In addition, the drinking cessation measure did not distinguish between individuals who had ceased more than 1 year ago and those that ceased drinking more than 10 years ago. Although we did not detect any differences between the two groups, our ability to do so was limited by the small size of the sample. The fact that the medical illnesses examined tend to be long-term chronic conditions may mitigate the influence of this shortcoming. However, further studies should more precisely examine timing of drinking cessation and its association with health measures to better specify the temporal relationship of health problem onset to drinking cessation. Future studies should also examine a broader range of disorders associated with alcohol problems in the elderly, including liver disease and accidental injury.

Although history of alcohol treatment and AA attendance did not appear associated with drinking cessation, the study did not include data on informal or physician-provided counseling to reduce consumption that may have assisted in cessation of drinking. The effects of such counseling in the context of medical treatment for serious medical illnesses should be examined in future studies. Although the

current sample drew from a low-income urban population of older adults, which limits the generalizability of the current study, prevalence of current drinking was comparable to that found in other clinical samples (Bucholz et al., 1995). Future research on older adults across health care settings could clarify whether results from this study pertain to older adults generally or are more typical of primary care patients.

This study addresses important issues that have been neglected in previous studies. Despite prominent calls for greater research attention, older women and minorities have been underinvestigated in studies of late-life drinking (Blow, 2000; Center for Substance Abuse Treatment, 1998; Wilsnack et al., 1995). Because alcohol problems have a greater negative impact on health on older women and minorities than others, identification of factors contributing to drinking cessation in these groups is particularly important. Even in a small sample, the analyses identified gender and ethnic differences that deserve further research.

### *Conclusion*

This study examined how medical problems contribute to the cessation of alcohol consumption in late life, by analyzing characteristics that distinguish current drinkers from former drinkers. Gender and ethnic differences were examined among older adults in a primary care setting. Among women, greater age was associated with drinking cessation. The presence of serious health conditions was associated with drinking cessation for both men and women. In a hierarchical logistic regression model, former drinkers were more likely to be ethnic minorities and unmarried and were more likely to have heart problems or diabetes. This model explained a significant portion of variance in drinking cessation in the sample. Results help to identify factors contributing to drinking cessation and provide support for development of alcohol interventions for older adults that emphasize the potential health impact of excessive alcohol use.

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