Predictors of Untreated Remission From Late-Life Drinking Problems*

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ABSTRACT. Objective: Studies of mixed-aged samples have suggested that a majority of problem drinkers achieve remission "naturally," without formal treatment. We sought to describe the life history predictors of untreated remission among older adults. **Method:** We compared 330 older untreated remitters to 120 older treated remitters and to 130 untreated nonremitters. **Results:** A majority (73%) of remitted, older problem drinkers attained remission without any formal treatment for drinking problems. Compared with treated remitters, late-life untreated remitters were more likely to be women and had completed more schooling, reached their peak alcohol consumption and ceased development of new drinking problems earlier, had much less severe drinking and depression histories, and were less likely to have received any advice to reduce consumption. Compared with untreated nonremitters, untreated remitters were more likely to be women, reached their peak alcohol consumption and stopped developing new drinking problems almost a decade earlier, had somewhat less severe drinking histories, were less likely to have been advised to reduce consumption, and were more likely to have reacted to late-life health problems by reducing their alcohol consumption. **Conclusions:** Many late-life problem drinkers with milder drinking problems achieve remission without treatment or advice to reduce consumption. However, a notable percentage of untreated older individuals who have more severe drinking problems could benefit from public health efforts to aid detection of late-life drinking problems and interventions aimed at reducing alcohol consumption. Results suggest that such interventions should highlight the negative health consequences of excessive late-life drinking. (*J. Stud. Alcohol* **67:** 354-362, 2006)

MANY PROBLEM DRINKERS REMIT "naturally," that is, without treatment or mutual self-help group participation. General population surveys have shown that as many as three-fourths of individuals with remitted drinking problems attain remission without treatment (Sobell et al., 1996). However, a review of longitudinal studies with mixed-aged adults with alcohol-use disorders or drinking problems suggests that only between 14% and 50% of untreated remissions (defined as abstinence or nonproblem drinking) are maintained for a minimum of 6 months (Walters, 2000). Other researchers examining cumulative probabilities of treatment-seeking for drinking problems among mixed-aged samples have pointed to the often-substantial lag between initial drinking problem onset and treatment seeking and questioned if long-term longitudinal research would confirm high lifetime rates of untreated remission (Kessler et al., 2001).

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Most prior research on untreated remission has been conducted on mixed-aged samples comprised generally of younger to middle-aged adults and has included few adults over the age of 64 years. Examination of untreated remission among older adults would extend observation of untreated remission across the life span, enhance our understanding of the lifetime course of untreated drinking problems, the rate of untreated remission of drinking problems, and the factors associated with late-life untreated remission. Such knowledge could contribute to the development of self-help, assisted self-help, or treatment strategies aimed at facilitating or accelerating recovery from late-life problem drinking, especially among individuals who would not normally receive treatment (Klingemann, 2001; Watson et al., 1998). Additionally, examination of remission among older problem drinkers is especially salient now: Late-life problem drinking is already considered a public health problem, and rates of such problems are expected to grow as the "baby boom" generation—with its generally more liberal attitudes about substance use—enters late life (Adams et al., 1995; Korper et al., 2002). However, despite calls for examining untreated remission among older adults (Sobell et al., 2000; Watson et al., 1998), little attention has been paid to it.

There are several reasons to expect a high rate of untreated remission among older adults. Chermack and colleagues (1996) found that 61% of a sample of 135 older, remitted, former problem drinkers had no history of treatment

for drinking problems. Moreover, in mixed-aged samples, older age and belonging to an earlier cohort have been associated with higher rates of remission without treatment (Kessler et al., 2001; Russell et al., 2001). Age-related metabolic changes and health problems that lead to decreased tolerance for alcohol may facilitate remission among older adults (Bezdek et al., 2004; Watson et al., 1998). Older problem drinkers may also be more likely to achieve remission without treatment because problem drinkers who survive to old age tend to have less severe drinking histories than younger samples (Vaillant, 1998), and less severe drinking histories have been associated with untreated remission (Cunningham, 1999). Furthermore, because help seeking has been associated with greater psychosocial dysfunction due to drinking, especially in interpersonal relationships (Tucker and Gladsjo, 1993), and because older individuals tend to have fewer or less active social roles (no longer employed, not raising children), their drinking problems may be more likely to escape notice and not prompt suggestions to seek treatment.

In the current longitudinal study, we determine the rate of untreated remission among a large sample of remitted, older problem drinkers and examine the life history of drinking and related factors associated with untreated remission in this group. To gain a broad perspective on untreated late-life remission, we compare untreated remitters with two groups: treated remitters and untreated nonremitters.

Predictors of untreated versus treated remission

We know of no prior studies directly comparing the drinking histories of older adults who have achieved drinking problem remission without versus with treatment. Research with mixed-aged samples has most often found that individuals achieving remission without treatment are likely to have experienced less severe drinking problems, including less physiological dependence to alcohol and fewer drinking-related relationship and psychosocial problems that might prompt social network members to express concern or complaints about their drinking (Sobell et al., 1993; Tucker et al., 1993). However, others have reported no differences between untreated and treated remitters on drinking problem severity (Walters, 2000). These conflicting results are likely due, in part, to the use of different recruitment methods. When media recruitment methods are used, resulting samples of untreated remitters tend to have more severe drinking problems than do samples identified in general population surveys (Rumpf et al., 2000).

Prospective epidemiological data have shown that individuals with both substance use and psychiatric disorders, such as depression, have higher treatment rates than individuals with only a substance use disorder (Regier et al., 1993). It is possible that the discomfort and impaired functioning that is often associated with depression and other psychiatric conditions signal a need for change and boosts motivation to seek treatment. The experience of major, negative life events is also commonly thought to be associated with seeking treatment, but it is not known if older untreated remitters experience fewer major stressful events around the time of their remission than do treated remitters. Prior research with mixed-aged samples examining this issue has yielded inconsistent findings (Bischof et al., 2004; Blomqvist, 2002; Tucker et al., 1995). Herein, we will focus on whether older, untreated and treated remitters differ in their experiences with depression and late-life sadness, anxiety, and stressful life events.

Mixed-aged samples of untreated remitters have been described as possessing more "social capital," that is, more education, financial resources, and supportive relationships than are available to treated remitters (Granfield et al., 2001). Gender may also play a role in whether remission is achieved without or with treatment. Older women problem drinkers may be especially likely to remit without treatment because, compared with older men, they tend to have fewer and less severe drinking problems and are less likely to experience social pressure to seek treatment to change their drinking behavior (Bischof et al., 2000).

In general, untreated remitters tend to receive less social pressure to seek help for their drinking problems, whereas individuals seeking treatment are more likely to have been advised to reduce their alcohol consumption (Tucker, 2001; Weisner et al., 2003). Although social pressure to change drinking behavior is clearly related to severity and social impact of drinking problems, there is evidence that, among mixed-aged adults, alcohol dependence and social pressure to stop drinking are independent predictors of help seeking (Hasin, 1994). We will assess whether this finding holds among older adults.

Predictors of remission versus nonremission among untreated, older adults

There have been relatively few comparisons of untreated remitters to untreated nonremitters. Available research with mixed-aged adults has found that untreated remitters are more likely than untreated nonremitters to be older and are more likely to be women, married, employed, more satisfied with their work and financial situation, and to have had a later onset of drinking problems (Bischof et al., 2001; Tucker et al., 1994). Several studies have suggested that untreated remitters may have similar or more severe drinking histories than untreated nonremitters, but findings are mixed on whether untreated remission is associated with fewer psychological and social problems or fewer prior attempts to cut down than is untreated nonremission (Walters, 2000). Mixed-aged, untreated remitted and nonremitted problem drinkers do not appear to differ on whether they receive social pressure to alter drinking behavior (Bischof et al., 2001).

One small study (n = 45) found that the most commonly endorsed reasons for altering drinking behavior among untreated problem drinkers were health problems and other peoples' concerns about their drinking (Walton et al., 2000). Other frequently cited reasons for initially ceasing problematic use of alcohol among mixed-aged adults include financial, social and work-related problems, extraordinary events, "hitting bottom," decreased alcohol use by social network members, and changes in values and goals (Stall, 1986; Walters, 2000). In this study, we identify if such experiences predict remission among older, untreated problem drinkers.

Method

Participants

Participants were drawn from a larger sample of late- to middle-aged community residents (55-65 years old at baseline) who participated in a 10-year, longitudinal study assessing the course of late-life alcohol consumption and problem drinking. Individuals who were recruited at baseline had had some outpatient contact with a health care facility within the last 3 years. A screening procedure excluded individuals who had never consumed alcohol and lifetime nonproblem drinkers who consumed alcohol less than once a week. Telephone contact was made successfully with 96% of eligible respondents (2,217 of 2,318), and 96% (n = 2125) of these individuals agreed to participate in the first wave of data collection. Overall, 1,884 (89%) of the individuals agreeing to participate completed the baseline data collection.

The sample was comparable to similarly aged community samples with regard to hospitalization and health characteristics (Brennan et al., 1990). Informed consent was obtained from all 1,884 participants. We recontacted the sample 1 and 4 years later, obtaining 94% response rates. A 7-year follow-up was conducted on part of the sample to obtain information on lifetime history of drinking problems and depression. Ten years after baseline, 93% of all surviving participants (n = 1291) completed another follow-up that included assessment of lifetime history of drinking problems and depression for participants not assessed at the 7-year follow-up. By applying several criteria described herein to surviving individuals who participated in both the 4- and 10-year follow-ups (n = 1,255), we formed three groups: (1) Late-life untreated remitters (n = 330) were individuals who had had drinking problems at some time in their life, had achieved remission after age 50, were free of drinking problems at both the 4- and 10-year follow-ups, and had never received treatment for problem drinking; (2) late-life treated remitters (n = 120) were individuals who had had drinking problems at some time in their life, had achieved remission after age 50, were free of drinking problems at both the 4- and 10-year follow-ups, and had received treatment for problem drinking; and (3) late-life continuing problem drinkers (n = 130) were individuals who had had drinking problems at some time in their life, continued to have drinking problems at both the 4- and 10-year follow-ups, and had never received treatment for their problem drinking.

These groups were formed based on three indicators of a lifetime history of drinking problems and two indicators of a lifetime history of help seeking. The three drinking problem indicators asked participants about their experiences with or conditions associated with drinking. Participants were considered to have a problem with drinking if they (1) had one or more drinking problems according to a 5-item screening questionnaire administered before baseline; (2) had one or more drinking problems at baseline or at any of the follow-ups on the 17-item Drinking Problems Index, which assesses negative consequences of drinking among older adults (Finney et al., 1991; α = .90); or (3) had one or more drinking problems as indicated on a 28-item lifetime history of drinking problems questionnaire that taps symptoms of alcohol-use disorders using items adapted from the Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised (DSM-III-R; Spitzer et al., 1990), the Alcohol Dependence Scale (Skinner et al., 1982), and lifetime versions of selected Drinking Problems Index items. This questionnaire also assessed the age at first onset of each endorsed drinking problem (α = .94; 30-day test-retest, r = .90; Schutte et al., 2001).

A history of formal treatment for drinking problems was assessed in two ways: (1) with items included in the baseline and all follow-up surveys asking if participants had obtained help for their drinking problems in the last 12 months and (2) by items on the lifetime drinking history questionnaire assessing whether they had ever received help for their drinking problems from a psychologist, psychiatrist, physician, hospital or clinic. Endorsement of one or more items indicated that formal treatment for drinking problems had occurred at some point during the participant's lifetime. Self-help group participation was assessed with comparable life history items asking if participants ever obtained help from Alcoholics Anonymous (AA) or other self-help groups. Forty-three percent of treated remitters also reported a history of self-help group participation. Only 10 individuals had a history of AA in the absence of formal treatment. These individuals were not included in subsequent analyses.

Measures

Demographic characteristics. We assessed at baseline participants' gender, ethnicity (white vs nonwhite), and the number of years of education that they had completed. At

the 4- and 10-year follow-ups (follow-ups at which remitted problem drinkers had no drinking problems and nonremitted problem drinkers had one or more), we assessed if participants were currently married (yes/no), working for pay either full or part time (yes/no), and their age.

Lifetime drinking history. We asked participants about their age when they first started to drink regularly (defined as drinking at least once per month) and their age when they drank the heaviest. Using the previously described 28-item lifetime history of drinking problems questionnaire, we assessed participants' earliest and latest age of onset of a drinking problem. The number of lifetime drinking problems was the number of reported drinking problems reported on the 28-item lifetime drinking problem questionnaire. We also assessed if participants reported a lifetime history of symptoms consistent with a DSM-III-R diagnosis of alcohol dependence (American Psychiatric Association, 1987). In addition, we assessed if anyone had ever advised them to cut down on or stop drinking (yes/no), if they had ever tried to cut down on or stop drinking, and if they ever (yes/no) received help from informal sources (i.e., family or friends) with reducing alcohol consumption.

Using identical items presented twice (once regarding the interval during which the participant was aged 51-65 years old and again concerning the interval during which he or she was 66 years old or older), we assessed circumstances associated with reductions in alcohol consumption after age 50. We examined the interval after age 50 because this encompassed the time when late-life remission occurred. These items were largely based on prior work identifying common reasons for altering alcohol consumption and tapped problems in major life domains that may affect drinking behavior (Moos et al., 1994; Skinner, 1979; Stall, 1986). First, we asked participants to indicate if (yes/no) they had experienced problems in any of eight major life domains, including the death of a loved one, negative affect (depression/sadness or tension), if their friends, coworkers, or spouse drank, and if they had experienced a change in leisure time. Then, participants were asked to indicate if events that had occurred led to them to drink more, less, or resulted in no change in their drinking (average 30-day test-retest, $r = .87$).

Depression history. A modified version of Zimmerman and Coryell's (1987) Inventory to Diagnose Depression-Lifetime Version (IDDL) was administered to assess participants' depression histories. Individuals were asked to refer to the time in their life when they were their most sad, unhappy, or depressed as they answered 18 symptom items scored on 5-point scales ranging from 0 to 4, where zero reflected absence of a symptom (e.g., "I did not feel like a failure") and four reflected a severe symptom (e.g., "I felt I was a totally worthless person"). Symptom duration was assessed with follow-up items assessing if the individual experienced symptoms for at least 2 weeks. Depression severity was tapped by summing responses to the 18 symptom items. Next, following IDDL scoring rules, we calculated a dichotomous (yes/no) composite to indicate whether symptoms and duration of symptoms were consistent with a DSM-III-R diagnosis of major depressive disorder (American Psychiatric Association, 1987). Although limited by the fact that it does not assess exclusion criteria, comparison of the IDDL with structured interviews has demonstrated that the IDDL has reasonable sensitivity (74%) and specificity (93%), with $\kappa = .60$ (Zimmerman and Coryell, 1987). The IDDL had good reliability in this sample ($\alpha = .92$).

Summary of analyses. We first evaluated demographic differences between the groups of untreated remitters ($n = 330$), treated remitters ($n = 120$), and untreated nonremitters ($n = 130$) using chi-square tests and one-way analyses of variance with Bonferroni corrections for multiple comparisons. Analyses controlling for demographic differences that are generally considered stable throughout adulthood (gender, education) were then completed on life history variables. Next, multivariate logistic regressions were performed to evaluate the relative contribution of significant univariate predictors and potential interactions between predictors of (1) untreated remission among all remitted problem drinkers and (2) remission among all untreated problem drinkers.

Results

Untreated versus treated remission

Most participants were white, married, well educated, and, consistent with their age, not currently employed (Table 1). There were no differences between untreated and treated remitters on age, ethnicity, or employment status after Bonferroni corrections were made. There were, however, more women among untreated (46%) than treated remitters (33%), and untreated remitters had completed more years of formal education than had treated remitters.

On average, both untreated and treated remitters began regular drinking in their early 20s and first began experiencing drinking problems in their early 30s (Table 2). Untreated remitters developed significantly fewer drinking problems (2.82 vs 10.79), and fewer of them had developed symptoms consistent with an alcohol dependence syndrome than had treated remitters (25% vs 76%). Follow-up analyses on individual lifetime drinking problem items subsumed under alcohol dependence symptoms revealed that untreated remitters were less likely than treated remitters to have symptoms of alcohol dependence related to loss of control over drinking, physiological dependence, and social problems (not shown in Table 2). Untreated remitters were also much less likely to have been advised to cut down on their drinking, to have tried to reduce their drinking, or to have received help from family or friends for

TABLE 1. Demographic characteristics

Variables	Untreated remitters (n = 330) % or mean (SD)	Treated remitters (n = 120) % or mean (SD)	Untreated nonremitters (n = 130) % or mean (SD)	$\chi^2/F^{c,d}$
Gender, % women	46%[a,b]	33%[a]	28%[b]	14.92[g]
Ethnicity, % white	91%	88%	94%	2.34[e]
Married, % yes				
4-year follow-up	69%	63%	76%	2.76[e]
10-year follow-up	65%	58%	74%	3.45[f]
Employed full or part time, % yes				
4-year follow-up	34%	28%	42%	2.17[e]
10-year follow-up	16%[b]	22%	27%[b]	3.46[f]
Age, in years[i]	71.55 (3.20)	71.23 (3.22)	70.94 (3.25)	1.76[e]
Education, in years	14.55 (2.37)[a]	13.85 (2.45)[a]	14.50 (2.30)	4.02[f]

[a]Untreated remitters vs treated remitters; [b]untreated remitters vs untreated nonremitters; [c]percentages and unadjusted means are reported; [d]1 df for chi-squares and one-way analyses of variance; [e]a nonsignificant finding, $p \geq .05$; [f]$p < .05$; [g]$p < .01$; [i]age at the 10-year follow-up.

their drinking problems. In addition to having experienced less severe drinking problems, untreated remitters described less severe depression histories: Fewer untreated remitters experienced symptoms consistent with a major depressive disorder diagnosis than did untreated nonremitters (28% vs 47%). Untreated remitters were also less likely to have had negative affect and health, financial, legal, and marital problems after age 50. Moreover, untreated remitters were generally less likely than treated remitters to perceive themselves as responding to negative events and affect with reduced drinking (Table 3).

Next, we tested a multivariate, logistic regression model predicting untreated remission among remitted problem drinkers (Model 1 in Table 4). The model specified backward stepwise entry and included gender and education in the first step of variables and four nonoverlapping life history variables exhibiting significant univariate group differences in the second step. After assessing the statistical significance of each possible mean-centered, two-way interaction term among the significant variables, we then entered the significant ($p < .05$) two-way interaction terms together in the third step of the regression. However, the

TABLE 2. Lifetime history of drinking problems, depression, and informal help seeking

Variables	Untreated remitters (n = 330) % or mean (SD)	Treated remitters (n = 120) % or mean (SD)	Untreated nonremitters (n = 130) % or mean (SD)	$F^{c,d}$
Drinking age of onset	21.72 (7.01)	20.05 (6.61)	21.59 (7.50)	1.95[e]
Age heaviest drinking	37.73 (13.43)[a,b]	41.39 (12.43)[a]	47.14 (13.53)[b]	26.43[h]
Age of onset drinking problems	32.68 (13.75)	32.12 (13.54)	34.38 (15.93)	1.66[e]
Age of onset last drinking problem	39.39 (14.58)[a,b]	46.22 (12.47)[a]	49.00 (14.86)[b]	21.28[h]
Lifetime no. drinking problems	2.82 (3.81)[a,b]	10.79 (8.37)[a]	4.98 (4.33)[b]	96.40[h]
Alcohol dependence symptoms, % yes	25%[a,b]	76%[a]	51%[b]	52.47[h]
Advised to cut down, % yes	21%[a,b]	83%[a]	47%[b]	91.43[h]
Tried to cut down, % yes	41%[a]	100%[a]	44%	79.34[h]
Friends/family help, % yes	24%[a]	85%[a]	21%	105.38[h]
Worst depression severity	18.25 (12.45)[a]	25.64 (15.43)[a]	17.61 (12.00)	19.32[h]
Major depression, % yes[i]	28%[a]	47%[a]	27%	9.15[h]

[a]Untreated remitters vs treated remitters; [b]untreated remitters vs untreated nonremitters; [c]percentages and unadjusted means are reported; [d]analyses control for gender and education; [e]a nonsignificant finding, $p \geq .05$; [f]$p < .001$; [g]met symptom and duration criteria for major depressive disorder (American Psychiatric Association, 1987).

TABLE 3. Events occurring after age 50 and perceived reasons for drinking reductions

Events	Untreated remitters (n = 330) %	Treated remitters (n = 120) %	Untreated nonremitters (n = 130) %	F^c
Health problems				
Occurred?	59[a]	75[a]	57	5.35[g]
Led to reduction?[d]	41[a,b]	61[a]	24[b]	12.39[h]
Financial problems				
Occurred?	21[a,b]	34[a]	32[b]	6.51[g]
Led to reduction?[d]	25	42	17	2.95[e]
Legal problems				
Occurred?	16	24	16	2.13[e]
Led to reduction?[d]	17[a]	41[a]	0	8.00[g]
Marital problems				
Occurred?	26[a]	39[a]	29	4.82[g]
Led to reduction?[d]	25	21	11	1.62[e]
Someone close died				
Occurred?	57	56	48	1.03[e]
Led to reduction?[d]	14[a]	33[a]	8	8.88[h]
Negative affect				
Occurred?	44[a]	58[a]	42	6.04[g]
Led to reduction?[d]	14[a]	38[a]	16	8.48[h]
Others' drink[i]				
Occurred?	68[b]	74	80[b]	3.74[f]
Led to reduction?[d]	29[a,b]	34[a]	15[b]	5.09[g]
Change in leisure time				
Occurred?	49	45	57	1.90[e]
Led to reduction?[d]	28	30	14	3.70[f]

[a]Untreated remitters vs treated remitters; [b]untreated remitters vs untreated nonremitters; [c]analyses control for gender and education; [d]among individuals who experienced the event (i.e., occurred = yes); [e]a nonsignificant finding, $p \geq .05$; [f]$p < .05$; [g]$p < .01$; [h]$p < .001$; [i]"others" includes friends, spouse, and coworker.

inclusion of the interaction terms did not significantly improve the fit of the model. The final model indicated that participants who had experienced fewer drinking problems and those who had not received advice to cut down on drinking were more likely to attain remission without treatment. Having fewer depressive symptoms was less strongly, but still significantly, predictive of untreated remission.

Untreated remission versus nonremission

As shown in Table 1, untreated remitters and untreated nonremitters were very similar on all demographic characteristics except gender: More untreated remitters than untreated nonremitters were women (46% vs 28%). Untreated remitters and nonremitters both started drinking, on average, at about age 21 years, and both experienced the onset of drinking problems in their early-to-middle 30s (Table 2). However, whereas untreated remitters stopped developing new drinking problems on average before age 40, untreated nonremitters continued to develop new drinking problems into their late 40s. Untreated remitters had somewhat fewer lifetime drinking problems (2.82 vs 4.98), and markedly fewer of them had experienced drinking problems consistent with an alcohol dependence diagnosis (25% vs 51%).

TABLE 4. Multivariate logistic regression results for Model (1) (predicting untreated remission among all remitted problem drinkers) and Model (2) (predicting remission among all untreated problem drinkers)

Predictors	Model (1) Step χ^2	Model (1) β^c	Model (2) Step χ^2	Model (2) β^c
Step 1: Demographics	11.21[g]		12.71[h]	
Gender (1 = women)		0.35[e]		0.30[e]
Education		0.06[e]		–[a]
Step 2: Drinking/Depression History	171.46[h]		73.86[h]	
Lifetime no. drinking problems		-0.11[h]		-0.22[h]
Age of heaviest drinking		–[b]		-0.06[h]
Depressive symptoms		-0.02[f]		–[a]
Advised to reduce (1 = yes)		-2.13[h]		-3.14[h]
Step 3: Interactions	3.07[e]		22.84[h]	
Gender × Advice		–[a]		1.62[g]
Drinking Problems × Advice		–[b]		0.25[h]
-2 Log Likelihood	321.93		424.13	
Nagelkerke Pseudo R^2	.50		.31	

[a]Not a significant predictor in univariate analyses; [b]measure eliminated with backward stepwise procedure in which the significance for variable elimination was .05; [c]betas in the final model; [e]a nonsignificant finding, $p \geq .05$; [f]$p < .05$; [g]$p < .01$;. [h]$p < .001$.

Examination of alcohol dependence symptoms showed that untreated remitters were less likely than untreated nonremitters to have experienced a history of losing control over drinking, marked tolerance to alcohol, and social, emotional, or health problems, though they were similar on experiences of withdrawal symptoms (not shown in Table 2). Untreated remitters were also less likely to have been advised to cut down on their drinking, but similar proportions of untreated remitters and nonremitters had tried to cut down on or stop drinking (Table 2). Untreated remitters and nonremitters were also similar on the severity of their depressive symptoms, and, for both groups, health problems were the most frequently endorsed reasons for reducing alcohol consumption. In addition, although untreated remitters were no more likely to have experienced health problems than untreated nonremitters, remitters were more likely to view these events as reasons for reducing their alcohol consumption (Table 3).

When significant univariate predictors and two-way interaction terms were included in a multivariate, logistic regression model, having experienced fewer drinking problems, reaching peak alcohol consumption at an earlier age, and not having received advice to cut down on drinking were statistically significant predictors of untreated remission (Model 2 in Table 4). A significant interaction between gender and advice reflected the finding that women who were advised to reduce drinking attained remission more often than did men who received such advice, whereas women and men who were not so advised had comparable remission rates. In addition, an interaction between number of drinking problems and receiving advice to reduce drinking reflected the finding that, among untreated older adults with few drinking problems, not receiving advice to reduce

drinking was associated with remission; however, among individuals with many drinking problems, whether or not such advice was received did not help predict remission.

Discussion

Consistent with reports from previous research with mixed-aged samples, we found that a large percentage (73%) of older, remitted problem drinkers achieved remission without treatment or involvement in mutual self-help groups. Most predictors of untreated remission described for generally younger samples were also associated with late-life untreated remission.

Untreated versus treated remission among older adults

Consistent with prior work examining gender differences in formal help seeking for drinking problems, there were more women among untreated than treated remitters. However, multivariate analyses suggested that this gender difference was largely accounted for by differences in drinking history severity. As in many studies of mixed-aged adults, older problem drinkers who achieved remission without treatment had experienced fewer and less severe drinking problems than individuals who had received treatment. Given the generally lower severity of untreated remitters' drinking problems, it was not surprising that they were less likely than treated remitters to have been advised to cut down on drinking. Untreated remitters also reported less severe depression histories, which is consistent with the notion that depressive symptoms can act as an impetus for seeking treatment. In addition, older untreated remitters were less likely than treated remitters to have experienced negative affect and health, financial, legal, and marital problems since age 50. However, for both groups, the most commonly perceived reason for reducing alcohol consumption in late life was health problems.

Whereas all treated remitters in our sample reported that they had tried to cut down on drinking, less than half of untreated remitters did so. This prompts a question about the extent to which untreated remitters are aware of having a drinking problem. Although all respondents indicated that they had experienced negative consequences because of their drinking, respondents may or may not have identified themselves as having a drinking problem. Future work might address if public health education and interventions focused on highlighting the potential health risks and repercussions associated with excessive drinking in late life might accelerate recovery among untreated, older problem drinkers who have few drinking problems.

Remission versus nonremission among untreated older adults

Several aspects of untreated remitters' and nonremitters' drinking history, such as when they began drinking and experiencing their first drinking problems, were quite similar. However, untreated remitters reached their peak alcohol consumption and stopped developing new drinking problems at a younger age than did untreated nonremitters. Although untreated remitters experienced only somewhat fewer drinking problems on average than did untreated nonremitters, they were much less likely to have drinking problems consistent with an alcohol dependence diagnosis, suggesting that their drinking had a more limited impact. Consistent with this idea, untreated remitters were less likely to have been advised to cut down on their drinking. Similar proportions of untreated remitters and nonremitters had tried to reduce their alcohol consumption, and there were no differences between remitters and nonremitters in whether family and friends had helped them change their drinking behavior. This suggests that there is a subgroup of older, untreated nonremitters who need more help than is available in their social network and for whom public health or healthcare system-based interventions are needed.

We found that the influence of gender on remission was best understood in the context of whether advice from family, friends, or others to reduce alcohol consumption had been received. The obtained interaction between gender and advice to reduce alcohol consumption suggested that older women were more responsive to such advice than older men. We also found that untreated problem drinkers with few drinking problems often attained remission without having received advice to cut down on alcohol consumption. However, among individuals with more drinking problems, having received advice to reduce alcohol consumption was a poor predictor of remission. Taken together, these results suggest that, among older, untreated women who have experienced few drinking problems, not having received advice to reduce consumption might be a marker that remission can be attained without intensive treatment. For such individuals, low-intensity interventions, such as those that focus on identifying drinking problems and advising changes in drinking behavior, might facilitate recovery from drinking problems (Blow et al., 2002). However, interventions that are more intensive are likely needed for older men and individuals with more lifetime drinking problems.

Limitations and future directions

To encompass a wide range of drinking problems, we utilized a low threshold for defining problem drinking. Therefore, the extent to which our results are generalizable to more impaired older problem drinkers is not known. However, research has confirmed that milder drinking problems are more common than alcohol dependence by a ratio of about 4:1 (Sobell et al., 1996); therefore, our results should be relevant to the broad population of older problem drinkers. Another limitation is that results are based on retrospectively collected information, and we cannot confirm

participants' reports of earlier drinking problems. However, it is reassuring that the test-retest reliability of our measures is reasonable, and that evidence for the validity and reliability of retrospective methodology is considerable (Chaikelson et al., 1994; Czarnecki et al., 1990; Gladsjo et al., 1992; Liu et al., 1996; Simpura et al., 1983).

Given the lack of ethnic diversity in our sample, caution must be taken in generalizing our results to ethnic/racial minority groups. As discussed by Watson and Sher (1998), the course of alcohol consumption and age-related patterns of recovery may vary among individuals of different ethnic backgrounds. Prior work on a mixed-aged sample (Cameron et al., 2002) suggests that there are ethnic differences in the factors motivating change in drinking behavior. Future research evaluating predictors of achieving and maintaining untreated remission should include more ethnic minority older adults.

There is a lack of consensus in the field about what constitutes treatment. Whereas some researchers have included individuals who reported "almost no formal help" or "minor formal help" in "untreated" remitted groups (Bischof et al., 2000), we defined treatment as any formal help for reducing alcohol consumption received at any time. Having a standard definition of what constitutes treated versus untreated remission would facilitate interpretation of research results and efforts to apply results. Furthermore, because very few older, remitted problem drinkers in our sample received help exclusively from mutual self-help groups such as AA, more work is needed to determine the differences and similarities in how older untreated and treated remitters differ from AA attendees.

Weaknesses in our examination of reasons for reducing alcohol consumption include an absence of information about stressor severity and timing, positive events, and approach-oriented motivations. Negative events are often focused on providing the impetus for changing drinking behavior (Stall and Biernacki, 1986); however, the process of untreated recovery can be presaged by a mixture of avoidance- and approach-oriented motivations (Granfield and Cloud, 2001). Furthermore, although prior research with mixed-aged adults has suggested that cognitive appraisal plays an important role in attaining remission (Bischof et al., 2000; Ludwig, 1985; Sobell et al., 1993), we did not assess the role of cognitive appraisal in late-life, untreated remission. Future work is needed to address these limitations.

Conclusions

The study provides promising leads for future studies and intervention development. Consistent with prior research with mixed-aged samples (Bischof et al., 2001; Humphreys et al., 1995), our results suggest that some older problem drinkers may need more, whereas others need less, intensive interventions to achieve remission. Many older problem drinkers who have experienced few drinking problems, have no history of treatment, and have never received advice to reduce drinking may achieve remission on their own. Such individuals might benefit most from low-intensity interventions aimed at accelerating remission. Another subset of older problem drinkers, who have never received treatment but are experiencing more severe drinking problems, might benefit from more intensive public health or health care system-based interventions that promote awareness, detection, and resolution of late-life drinking problems (see Fleming et al., 1999; Heather et al., 1990, Sobell et al., 2002). Furthermore, given that health problems are the most frequently cited reason for reducing alcohol consumption among older problem drinkers, interventions targeting late-life problem drinkers should emphasize the health consequences and potential medical repercussions of excessive drinking.

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