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# Alcohol treatment utilization: Findings from the National Epidemiologic Survey on Alcohol and Related Conditions

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**Abstract**

*Background:* Epidemiological studies consistently show low rates of alcohol treatment utilization among individuals with an alcohol use disorder (AUD). However, there is not as great consistency in the characteristics that predict alcohol treatment utilization.
*Methods:* Using data from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), we examined attributes associated with treatment utilization among individuals with an AUD. We used stepwise backward selection logistic regression analysis to examine demographic and clinical predictors of treatment utilization, in order to identify opportunities to improve the delivery of services to this population.
*Results:* Only 14.6% of individuals who met lifetime criteria for an AUD reported ever having received alcohol treatment (including self-help group participation). A greater proportion of respondents with both alcohol abuse and dependence (27.9%) reported having received treatment, compared with 7.5% of those with alcohol abuse only and 4.8% of those with alcohol dependence only. Older individuals, men, and those who were divorced, had less education or more lifetime comorbid mood, personality, and drug use disorders were also more likely to have received treatment.
*Conclusions:* The majority of individuals with an AUD never receive formal alcohol treatment, nor do they participate in self-help groups. Although natural recovery from an AUD is well documented, participation in alcohol treatment is associated with improved outcomes. The data presented here should be taken into account when efforts are made to enhance alcohol treatment utilization.
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*Keywords:* NESARC; Alcohol treatment; Epidemiology; Alcohol use disorders; Service utilization

## 1. Introduction

Alcohol abuse and dependence are common psychiatric disorders, recently estimated in the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) to affect 17.8 million adult Americans (Grant et al., 2004a). A variety of adverse consequences are associated with AUDs, including medical, social, and legal problems (Caetano and Cunradi, 1997). The estimated annual cost of alcohol abuse in the US is nearly US$ 185 billion (Harwood, 2000).

Despite the high prevalence of these disorders and their negative impact on individuals, families, and society, community studies show that many people with an alcohol or other substance use disorder (SUD) never receive treatment (Regier et al., 1993; Rabinowitz et al., 1999; Wu et al., 2003b; Mojtabai et al., 2002). For example, the National Comorbidity Survey (NCS) showed that, overall, 13.3% of individuals with a psychiatric disorder received an outpatient treatment during the preceding 12-month period (Kessler et al., 1999). However, while 11.6% of individuals with a diagnosis of alcohol abuse and 24.4% of individuals with alcohol dependence received treatment, 36.4% of individuals with a mood disorder and 26.5% of individuals with an anxiety disorder (including simple phobia) received any treatment. The recent NCS Replication (NCS-R) showed a cumulative lifetime probability of treatment contact being 52.7% for individuals with alcohol abuse and 69.8% for individuals with alcohol dependence (Wang et al., 2005a).

NESARC data show that, among individuals with a past prior year (PPY) history of alcohol dependence, nearly two-thirds were still alcohol dependent, in partial remission, or asymptomatic risky drinkers at the time of assessment. The rate of natural recovery rate (i.e., recovery without treatment) among these individuals was 24.4% (Dawson et al., 2005). The estimated natural recovery rate from alcohol dependence was approximately 40% in a smaller German sample (Bischof et al.,

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2005). These estimates contrast sharply with the rate of natural recovery observed in the National Longitudinal Alcohol Epidemiologic Survey (NLAES), which exceeded 70% (Dawson, 1996). NLAES data also showed that, for individuals with onset of an AUD during the 5 years preceding the survey, the rate of untreated recovery from AUD was closer to 50% (Dawson, 1996). In the NESARC, as with most of the earlier studies, there was a greater likelihood of recovery among females and among older, married individuals, effects that were independent of treatment history (Dawson et al., 2005). In summary, although natural recovery from an AUD is well documented, many individuals do not recover spontaneously, and might benefit from alcohol treatment services. Further, the observation that the likelihood of natural recovery decreases with increasing age suggests that treatment early in the course of the disorder may be most beneficial (Hermos et al., 1988).

There are many factors that contribute to the decision to seek alcohol treatment. Hasin and colleagues, using national data from the 1980s, showed that a diagnosis of alcohol dependence, greater severity of alcohol dependence, a sense of a compulsion to drink, and social pressure to drink were associated with seeking alcohol treatment (Hasin and Glick, 1992; Hasin, 1994; Hasin and Grant, 1995). Several studies (Brennan and Moos, 1991; Ross et al., 1999; Weisner et al., 2002) have shown that individuals who report more life stressors, such as legal or work-related problems, are more likely to seek treatment. More recent data (Tucker et al., 2004) show that the decision to seek treatment is based on an interaction of social pressures, severity of illness and related impairments, access to services, and perceived costs and benefits. Other data show that individuals seek treatment only after they experience substantial difficulties in daily functioning (Simpson and Tucker, 2004; Weisner and Matzger, 2003), and the number of life areas that alcohol has negatively affected correlates with the probability of seeking help (Ogborne and DeWit, 1999).

Among individuals with a SUD, the presence of a comorbid psychiatric disorder may be a particularly important predictor of treatment utilization. In the NCS, for example, 16% of individuals with comorbid mood and SUDs and 18% of individuals with comorbid anxiety and SUDs received substance abuse treatment, a rate more than twice that of individuals with a SUD only (Mojtabai et al., 2002). Moreover, these effects were additive, such that 34% of individuals with comorbid mood, anxiety, and SUDs received treatment (Mojtabai et al., 2002). Often, the individual seeks treatment for a psychiatric disorder, at which time a SUD is detected (Agosti and Levin, 2004; Schadé et al., 2004; Wu et al., 1999, 2003b; Mojtabai et al., 2002; Salloum et al., 1998). This pattern of findings may reflect the fact that many people view a mood or anxiety disorder as less stigmatizing than a SUD (Wu et al., 2003b).

Efforts to identify which individuals are most likely to seek treatment have yielded variable findings. Most studies show men to be significantly more likely to seek treatment for a SUD (Schober and Annis, 1996; Kaskutas et al., 1997; Mojtabai et al., 2002), though some have shown the opposite (Salloum et al., 1998; Weisner et al., 2001). Schober and Annis (1996) found that women with an AUD are more likely to seek mental health treatment for a co-occurring problem, whereas men are more likely to seek an alcohol-specific intervention.

Most studies show adults aged 35–54 years as being most likely to seek alcohol treatment (Wu et al., 1999; Ogborne and DeWit, 1999; Proudfoot and Teesson, 2002; Weisner et al., 2002; Wu and Ringwalt, 2004), with the elderly being least likely to do so (Proudfoot and Teesson, 2002; Satre et al., 2003). Although some studies have shown that younger age is associated with treatment-seeking behavior (Kaskutas et al., 1997; Kessler et al., 1999), college-age problem drinkers are more likely to seek help from friends or school counselors than to receive substance abuse treatment *per se* (Yu et al., 2003).

Studies of the relationship between ethnicity and alcohol treatment utilization have also yielded variable findings. In some studies, Blacks and Hispanics were more likely than Whites to seek treatment (Kaskutas et al., 1997; Weisner et al., 2002). In one study, Blacks and Hispanics were least likely to seek alcohol-specific treatment; their alcohol problems were often identified only through other primary diagnoses (Booth et al., 1992). In addition, compared to Whites, Native Americans are much more likely to use substance abuse services, while Asians and Pacific Islanders are much less likely to do so (Wu et al., 2003b).

We examined demographic and clinical attributes of alcohol treatment utilization in the National Epidemiologic Survey on Alcohol and Related Conditions (Grant et al., 2003, 2004a), a large general population survey. In this report, we examine the specific alcohol treatment modalities utilized by individuals with an AUD, the characteristics of individuals who sought alcohol treatment, and reasons for not seeking alcohol treatment among survey respondents who considered seeking treatment, but did not.

## 2. Methods

### 2.1. Study sample

The NESARC, covering the period 2001–2002, is the largest study ever of alcohol use and alcohol-related disorders. It included a nationally representative sample of 43,093 participants recruited from a non-institutionalized household population, 18 years and older, living in the US, including the District of Columbia, Alaska, and Hawaii (Grant et al., 2004a). Face-to-face personal interviews were conducted by experienced interviewers from the US Census Bureau, with a response rate of 81.2%.

### 2.2. Diagnoses and assessments

The alcohol use disorder and associated disabilities interview schedule-DSM-IV (AUDADIS-IV), a fully structured diagnostic interview for non-clinician interviewers, yields DSM-IV diagnoses (American Psychiatric Association, 1994). The reliability and validity of the diagnoses obtained using the AUDADIS have been demonstrated in national and international studies (Grant et al., 1995, 2003; Hasin et al., 1997).

The present report includes data on abuse and/or dependence on alcohol, amphetamines, prescription opioids (i.e., "painkillers"), heroin, sedatives, tranquilizers, cocaine, inhalants, hallucinogens, and cannabis, as well as dependence on nicotine. Other psychiatric disorders examined include mood disorders (i.e., major depression, dysthymia, hypomania, and mania), anxiety disorders (i.e., panic disorder, social phobia, specific phobia, generalized anxiety disorder), and personality disorders (i.e., antisocial, avoidant, dependent, obsessive-compulsive, paranoid, schizoid, and histrionic).

In this report, we used AUD diagnoses that were not hierarchical, meaning that abuse and dependence could be diagnosed separately, as well as jointly. This resulted in three diagnostic groups: alcohol abuse only, alcohol dependence only, and both alcohol abuse and dependence. Data are presented only for lifetime AUDs, since data on treatment utilization were available only for this timeframe.

Respondents were identified as having sought treatment based on their response to the AUDADIS question: "Have you ever gone anywhere or seen anyone for a reason that was related in any way to your drinking: a physician, counselor, Alcoholics Anonymous, or any other community agency or professional?" Alcoholics Anonymous (AA) is widely viewed in the community as alcohol treatment (Caetano, 1987) and was the treatment option most commonly endorsed by respondents in the National Longitudinal Alcohol Epidemiologic Survey (NLAES; the survey on which the NESARC was modeled). Further, it was included in an analysis of the NLAES data that focused on barriers to treatment (Grant, 1997), making its inclusion useful for purposes of comparison with those findings. A series of 13 additional questions were asked of those who acknowledged having ever utilized treatment, inquiring as to specific kinds of treatment utilized and the treatment timeframe (i.e., during the preceding 12 months only, during the period prior to the last 12 months only, or both). Respondents who had received treatment were also asked to provide the age at which they first received help for their drinking.

Individuals were also asked, "Was there ever a time when you thought you should see a doctor, counselor, or other health professional or seek any other treatment for your drinking, but didn't go?" Those who answered this question in the affirmative were asked to identify all of the applicable reasons for not getting help from a list of 27 possible responses.

### 2.3. Statistical analysis

Descriptive analyses compared individuals with an AUD who had ever received treatment with those who had not. Descriptive analyses examined the specific treatments that were received and, among individuals who had received treatment, the time that elapsed between their first having met criteria for an AUD diagnosis and their first alcohol treatment. In addition, among individuals who had considered treatment, but had never received it, the reasons for not seeking treatment were examined.

To determine the attributes associated with treatment utilization, logistic regression models were used to examine individual demographic characteristics (gender, age, income level, region of the country inhabited, marital status, educational level, employment status, and race/ethnicity) and the number of mood, anxiety, personality, and substance use disorders as predictor variables. Predictors that were statistically significant in univariate analyses were included in a step-wise logistic regression analysis that used backward elimination to arrive at a final logistic model that best predicts treatment utilization. When the logistic model showed a significant effect for a group of comorbid diagnoses, a subsequent logistic regression was used to determine which specific diagnoses (coded as present or absent), when entered together, predicted treatment utilization. Univariate and stepwise regression models were also used to examine the characteristics of respondents who, despite never having sought alcohol treatment, stated that they had thought they should seek such treatment. Additionally, we calculated the time from onset of AUD to time that treatment was first sought by respondents for whom such data were available.

All analyses were performed in the statistical software package SUDAAN v. 9.0 (Research Triangle Institute, 2005), in order to estimate the standard errors correctly by incorporating a proportional weight and modeling the stratified cluster design.

## 3. Results

Of the 43,093 participants, 30.3% met criteria for a lifetime AUD. The mean age of individuals with an AUD was 42.2 (S.D. = 14.7) years [median = 41, interquartile range (IQR) = 31–52] and 66.5% were male, 79.8% were White, 7.5% were Black, and 8.0% were Hispanic, 3.0% were Native-American, and 1.7% were Asian. The majority of individuals with an AUD (61.9%) were married, 87.8% completed high school, 27.1% completed college, 64% were employed, and the median household income was US$ 45,000.

Table 1
Alcohol treatment utilization (%) by alcohol use disorder diagnosis

| Lifetime alcohol use disorder diagnosis | Ever received treatment | Never received treatment |
|---|---|---|
| Alcohol abuse ($n = 6890$) | 7.5 | 92.5 |
| Alcohol dependence ($n = 669$) | 4.8 | 95.2 |
| Both abuse and dependence ($n = 4189$) | 27.9 | 72.1 |
| Any AUD ($n = 11{,}748$) | 14.6 | 85.4 |

As has previously been reported from NESARC (Grant et al., 2004b) and from other community studies (Regier et al., 1990; Kessler et al., 1997, 2005), comorbid psychiatric disorders were common among individuals with an AUD. The most common lifetime diagnosis among these individuals was a drug use disorder (48.7%), the most common of which were nicotine dependence (36.1%) and cannabis abuse and/or dependence (22.9%). A mood disorder was present in 32.2% of individuals with an AUD (most commonly major depression: 26.6%), an anxiety disorder in 25.4% (most commonly specific phobia: 13.3%), and a personality disorder in 24.8% (most commonly obsessive-compulsive personality disorder: 12.3%).

Among individuals with a lifetime AUD, 14.6% reported ever having sought alcohol treatment. Table 1 shows the rates of treatment utilization by respondents with an AUD, by diagnostic group. If one excludes self-help group attendance, only 11.8% of respondents with a lifetime AUD report having utilized treatment, including 5.1% of individuals with alcohol abuse only and 3.4% with alcohol dependence only. The mean age at which respondents first sought treatment was 30.5 (S.D. = 11.1) years.

The specific AUD group was significantly associated with the likelihood of having ever received treatment ($\chi^2_{(2)} = 934.43$, $p < .001$). Compared to individuals with a diagnosis of either alcohol abuse or dependence only (i.e., not both), a significantly larger proportion of respondents who met criteria for both disorders reported having utilized alcohol treatment services (crude OR = 4.92, 95%CI = 4.44, 5.55).

The types of treatment that were sought are shown in Table 2. The most common type of treatment sought was participation in a 12-step program, including AA, the overall rate of which among individuals with a lifetime AUD was 76.1%. This was followed in frequency by participation in an alcohol or drug rehabilitation program (overall rate = 45.2%), treatment by a private physician, psychiatrist, psychologist, or social worker (overall rate = 37.3%), and treatment in an alcohol or drug detoxification ward or clinic (overall rate = 34.3%).

In addition to being more likely to seek treatment, individuals with both alcohol abuse and dependence reported utilizing a significantly greater number of different kinds of alcohol treatment than did individuals with either abuse or dependence [abuse and dependence ($M = 3.9$, S.D. = 2.6); abuse only ($M = 2.6$, S.D. = 2.1); dependence only ($M = 2.3$, S.D. = 1.7) ($F_{(2,1661)} = 51.0$, $p < .001$)].

Results of the stepwise logistic regression analysis are presented in Table 3. Only three significant univariate predictors

Table 2
Types of treatment received by individuals with a lifetime alcohol use disorder diagnosis ($n = 1716$)

| Treatment setting | Abuse ($N = 515$) | Dependence ($N = 32$) | Both abuse and dependence ($N = 1169$) |
|---|---|---|---|
| 12-Step meeting | 71.3 | 62.5 | 77.6 |
| Alcohol or drug rehabilitation | 34.6 | 21.9 | 51.2 |
| Physician, psychiatrist, psychologist or social worker | 22.2 | 34.4 | 45.8 |
| Alcohol or drug detoxification ward or clinic | 23.6 | 21.9 | 38.4 |
| Outpatient clinic | 18.7 | 18.8 | 33.2 |
| Family or social services | 18.1 | 9.4 | 24.3 |
| Emergency room | 16.1 | 9.4 | 31.1 |
| Inpatient psychiatric unit | 15.2 | 12.5 | 28.2 |
| Any other agency or professional | 10.2 | 22.6 | 13.2 |
| Clergy | 6.5 | 9.4 | 19.1 |
| Halfway house | 6.7 | 3.1 | 9.3 |
| EAP[a] | 6.1 | 6.3 | 8.4 |
| Crisis center | 1.6 | .0 | 4.7 |

Percentage of individuals.
[a] Employee assistance program.

of lifetime treatment utilization were not retained in the stepwise model: race, employment status, and the number of anxiety disorders. Although not significant for the multivariate model, it is worth noting that treatment utilization varied somewhat by race. Native-Americans were the most likely to seek treatment (22.9%), followed by Blacks (17.1%), Hispanics (16.1%), Whites (14.0%), and Asians (9.0%). The remaining predictors showed significant effects that were similar to those in the univariate analyses, though the OR for each was reduced in the stepwise model. There were no two-way interactive effects of the predictor variables retained in the stepwise model.

Individuals who utilized alcohol treatment services were more likely to be older, divorced or separated, male, living in the West or Midwest, and having lower income and educational levels and more mood, personality and drug use disorders. Among the mood disorders, the logistic model showed that major depression (OR = 1.43, 95%CI = 1.23, 1.66), dysthymia (OR = 1.72, 95%CI = 1.39, 2.12), and mania (OR = 1.85, 95%CI = 1.49, 2.28) were significant predictors. Among the personality disorders, antisocial (OR = 2.60, 95%CI = 2.17, 3.13), avoidant (OR = 1.69, 95%CI = 1.23, 2.31), dependent (OR = 2.04, 95%CI = 1.10, 3.78), and schizoid (OR = 1.33, 95%CI = 1.02, 1.75) were significant predictors. Among the drug use disorders, nicotine dependence (OR = 1.85, 95%CI = 1.63, 2.11), cocaine abuse or dependence (OR = 2.55, 95%CI = 2.04, 3.19), cannabis abuse or dependence (OR = 1.46, 95%CI = 1.24, 1.71), and heroin abuse or dependence (OR = 2.19, 95%CI = 1.18, 4.08) were significant predictors. All effect sizes were of small magnitude except antisocial personality disorder, cocaine use disorders and heroin use disorders, which showed medium effects.

Five hundred of the respondents acknowledged that they had considered seeking treatment for their drinking, but had never done so. Table 4 shows the 10 most common reasons for having not sought treatment, foremost among which was the belief that one should be strong enough to handle his/her drinking problem alone, followed by thinking that the problem would get better by itself, a perceived ability to stop drinking on one's own, and

Table 3
Predictors of treatment utilization among respondents with an alcohol use disorder

| Variable | Coefficient | S.E. | Wald | $p$-Value | Odds ratio (95%CI) |
|---|---|---|---|---|---|
| Gender (male) | .50 | .07 | 45.47 | <.001 | 1.64 (1.42, 1.90) |
| Age (10-year intervals) | .09 | .02 | 15.70 | <.001 | 1.10 (1.05, 1.15) |
| Income (US$ 10,000 intervals) | −.03 | .01 | 7.94 | .005 | .97 (.95, .99) |
| Education | | | 9.73 | <.001 | |
| Less than high school | .62 | .12 | 25.10 | <.001 | 1.86 (1.46, 2.37) |
| High school | .45 | .10 | 20.25 | <.001 | 1.56 (1.29, 1.90) |
| Some college | .34 | .10 | 12.89 | <.001 | 1.41 (1.17, 1.70) |
| College graduate | Reference | | | | |
| Marital status | | | 24.41 | <.001 | |
| Married | −.17 | .10 | 3.28 | .072 | .84 (.70, 1.02) |
| Divorced/separated | .40 | .11 | 13.91 | <.001 | 1.49 (1.21, 1.84) |
| Never married | Reference | | | | |
| Region | | | 6.97 | <.001 | |
| Midwest | .26 | .11 | 6.05 | .014 | 1.30 (1.05, 1.59) |
| South | .01 | .10 | .01 | .948 | 1.01 (.82, 1.23) |
| West | .34 | .11 | 10.43 | .001 | 1.41 (1.14, 1.73) |
| Northeast | Reference | | | | |
| Mood disorders | .20 | .04 | 20.63 | <.001 | 1.23 (1.12, 1.34) |
| Personality disorders | .10 | .04 | 7.24 | .007 | 1.10 (1.03, 1.19) |
| Drug use disorders | .33 | .02 | 213.66 | <.001 | 1.39 (1.33, 1.45) |

For reference groups, coefficient = 0 and odds ratio = 1.

Table 4
Reasons for not seeking alcohol treatment ($n = 500$)

| Reasons | Percentage of respondents |
|---|---|
| Should be strong enough to handle it alone | 44.4 |
| Thought problem would get better by itself | 31.5 |
| Stopped drinking on my own | 24.4 |
| Did not think drinking problem was serious enough | 21.1 |
| Was too embarrassed to discuss it with anyone | 18.0 |
| Could not afford to pay the bills | 12.7 |
| Did not want to go to treatment | 11.2 |
| Hated answering personal questions | 10.3 |
| Did not think anyone could help | 8.4 |
| Did not know anyplace to go | 8.4 |

Includes only individuals with an alcohol use disorder who thought about, but did not utilize, alcohol treatment.

thinking that the problem was not serious enough to warrant treatment.

Table 5 shows predictors of having considered treatment among respondents with an AUD who had never sought treatment. As with those who had sought treatment, individuals who had thought about treatment, but had never received it, were less educated and had more mood, anxiety, and drug use disorders than those who had never considered it.

Among the 1169 respondents with data on both age of onset of an AUD and the age at which treatment was first sought, the mean time elapsed between these events was 4.08 years (S.D. = 8.8). It should be noted that, for 229 individuals (19.6%), this interval was negative, indicating that they received treatment prior to meeting criteria for an AUD.

## 4. Discussion

Alcohol use disorders are among the most costly and damaging public health problems in the US today (Harwood, 2000). During the period 2001–2002, although 17.8 million adult Americans were diagnosed with one or more current AUDs (Grant et al., 2004a), only about 1 in 7 individuals with an AUD reported ever having received any kind of alcohol treatment. Among those who received treatment, AA participation was the most common treatment option; about three-quarters of those who ever utilized treatment had attended AA, substantially greater than the proportion of individuals utilizing any other kind of alcohol treatment.

The rate of treatment utilization in NESARC is substantially lower than that seen in the NCS-R, where the cumulative lifetime probability of receiving treatment for alcohol dependence or abuse was 69.8 and 52.7%, respectively (Wang et al., 2005a). The delay to onset of treatment of about 4 years for those with an AUD in NESARC is also shorter than that seen in the NCS-R, in which the median duration of delay to first treatment contact are 9 and 6 years for alcohol abuse or alcohol dependence, respectively (Wang et al., 2005a). Findings from the NESARC concerning the types of treatment received (Table 2) are difficult to compare to previous reports, which focus on treatment received during the preceding 12-month period (Mojtabai, 2005; Wang et al., 2005b). As was true for the NLAES, among individuals in the NESARC who considered treatment, 3 of the 4 most common reasons for not seeking were the belief that one should be strong enough to handle a drinking problem alone, the expectation that the problem would improve spontaneously, and thinking that the problem was not serious enough to warrant treatment. However, although a substantial proportion of respondents in the NESARC reported that they did not seek treatment because they had stopped drinking on their own, spontaneous improvement was one of the least commonly endorsed reasons among NLAES respondents. The other notable difference between the two samples was that among the top reasons endorsed by respondents to the NLAES was the desire to keep drinking or getting drunk, which was not commonly endorsed by respondents to the NESARC.

The most robust predictors of treatment utilization among individuals with an AUD were male gender, lower educational level, being unmarried or coming from the West or Midwest regions of the US, and having a greater number of lifetime comorbid mood or drug use disorders. Among individuals with an AUD who did not receive treatment, lower educational level and more lifetime comorbid mood or drug use disorders distinguished those who had considered the need for treatment from those who had never done so.

Although some alcohol-dependent individuals recover without treatment, many do not (Bischof et al., 2003; Dawson et al., 2005; Wang et al., 2005a). In a comparison of alcohol-dependent adults from a general population sample with those admitted to substance abuse treatment, Weisner et al. (2003) found clear benefits of treatment. Specifically, 30-day abstinence rates 1 year after baseline were 57% for the treatment sample and 12% for

Table 5
Variables predicting having thought of seeking treatment among individuals with an alcohol use disorder who never utilized treatment ($n = 500$)

| Variable | Coefficient | S.E. | Wald | $p$-Value | Odds ratio (95%CI) |
|---|---|---|---|---|---|
| Education | | | 4.48 | .004 | |
| Less than high school | .73 | .20 | 5.01 | .004 | 2.07 (1.39, 3.07) |
| High school | .41 | .18 | 4.50 | .020 | 1.51 (1.07, 2.13) |
| Some college | .30 | .17 | 3.59 | .074 | 1.35 (.97, 1.87) |
| College graduate | Reference | | | | |
| Mood disorders | .38 | .08 | 21.76 | .000 | 1.47 (1.25, 1.72) |
| Anxiety disorders | .19 | .08 | 6.51 | .011 | 1.21 (1.04, 1.40) |
| Drug use disorders | .22 | .03 | 41.08 | .000 | 1.24 (1.16, 1.33) |

For reference group, coefficient = 0 and odds ratio = 1.

the population sample. Non-problematic drinking at follow-up also favored the treated sample (40% versus 23%). A recent examination of the NESARC data by Dawson et al. (2006) also suggests that treatment increases the chance of recovery among individuals with a diagnosis of alcohol dependence. Despite evidence of greater severity, PPY alcohol-dependent individuals in the NESARC who had ever sought treatment were more likely to be classified as having recovered during the survey period than those who never sought help (45.7% versus 32.5%). Prospective follow-up of individuals from the NESARC may enhance efforts to predict which individuals are likely to undergo remission in the absence of alcohol treatment.

These findings underscore the need for greater efforts to encourage people with AUDs to seek alcohol treatment. Since women, individuals with higher educational levels, and those without comorbid mood or drug use disorders are less likely to seek treatment, in the context of a broad-based effort, it may be important to ensure that efforts to promote treatment utilization include these individuals. Although males are more likely to receive treatment, they often do not receive treatment until they are older, and thus there is significant potential to improve outcomes by intervening with younger individuals, particularly males (Hermos et al., 1988). Efforts to increase the proportion of women with AUDs who seek treatment must take into account the fact that, although women are more likely to acknowledge psychological distress and to be motivated to enter treatment because of psychological and social pressures (Schober and Annis, 1996), they may be less likely to enter treatment if it is perceived as focusing on substance use rather than on psychological distress (Pelissier, 2004). Our findings also suggest that interventions should be designed to educate, inform, and de-stigmatize alcohol treatment.

Consistent with previous reports (Wu et al., 1999; Weisner et al., 2001), educational level was inversely related to the likelihood of alcohol treatment utilization. This finding is also consistent with the observation that lower income level was associated with greater treatment utilization. Although a lack of health insurance coverage represents a major barrier to health care utilization (Wu et al., 2003a; Katz et al., 1997), the availability of public entitlements has resulted in many people of lower socioeconomic status seeking substance abuse treatment (Timko et al., 1993; Weisner, 1993). Furthermore, the most common form of treatment endorsed by respondents in this study was participation in AA, which is available at no cost.

As might be expected, given that the rate of lifetime treatment utilization is cumulative, and consistent with prior findings (Hajema et al., 1999; Wu and Ringwalt, 2004), treatment utilization increased with age. Although young adults are most likely to report a recent substance use disorder, they use fewer treatment services and are less likely to perceive a need for such services (Hajema et al., 1999; Wu and Ringwalt, 2004). In the US, individuals aged 19–24 years are least likely to have health insurance, which can be a barrier to treatment utilization (Callahan and Cooper, 2005). In addition, this group may have the most to lose from the consequences of cultural stigmatization. Fear that a history of substance abuse treatment could limit job or other career opportunities, or adversely affect future access to or cost of health or other insurance could discourage them from seeking treatment.

Findings from the present study are consistent with findings showing that the presence of a comorbid psychiatric disorder is associated with treatment-seeking behavior among individuals with a SUD (Agosti and Levin, 2004; Schadé et al., 2004; Wu et al., 1999, 2003b; Mojtabai et al., 2002; Salloum et al., 1998). Overall, the comorbid disorders that had the greatest impact on the likelihood of receiving treatment were drug use disorders. Further, the greatest rates of treatment utilization were observed among individuals with both alcohol abuse and dependence. These findings are consistent with the observation that the severity of substance dependence and the related adverse consequences are associated with treatment-seeking behavior among individuals with a SUD (Hasin, 1994; Kessler et al., 2001).

The main limitation of this study is that treatment utilization is based on a single question that includes a wide variety of treatment options, including participation in AA, and is framed in terms of lifetime utilization. This limited our capacity to examine the presence of a cohort effect with respect to treatment-seeking behavior among individuals with a SUD (Kessler et al., 2001). A cohort effect is evident in recent increases in treatment utilization among individuals with a SUD (Kessler et al., 2001). This may result from the consolidation of drug and alcohol programs, changing attitudes toward treatment, and greater awareness and diversity of treatment options, as well as the expansion of school-based programs, employee assistance programs, mandatory treatment programs for drunk drivers, and substance abuse treatment programs in the criminal justice system (Kessler et al., 2001).

Another limitation of the current study is that the data are based exclusively on self-report. However, all interviews were conducted in private, and the respondents were assured of the confidentiality of their responses, minimizing the motivation to conceal diagnostic information or elements of the treatment history.

While greater efforts to increase treatment utilization among untreated individuals with an AUD may be beneficial to their recovery, denial of illness could thwart such efforts. The most common reason among NESARC respondents for not seeking treatment reflects concern that to do so is to acknowledge an inability to recover on one's one (see Table 4). Lack of knowledge or misconceptions regarding the nature and natural course of AUDs, stigmatization, and lack of knowledge regarding treatment options may also contribute to the failure to seek treatment, as reflected in the reasons offered for not seeking treatment among those who considered, but did not seek, treatment. Further, denial may inflate the number of supposed non-abstinent recoveries in those with apparent natural recovery (Vaillant, 2005).

One approach to increasing the availability of treatment, particularly that provided by professionals, is to promote the use of brief interventions in a primary care setting, which have been shown to be efficacious for reducing problem drinking (Babor, 1994). However, primary care physicians do not commonly deliver such interventions, preferring to refer such patients elsewhere for treatment (Fleming and Manwell, 1999). In this con-

text, the effort to develop medications to treat heavy drinking (Kranzler and Ciraulo, 2005) may improve the rate of identification and treatment by physicians. Olfson et al. (2002) found that the outpatient treatment of major depression increased during the 1990s following the introduction of the selective serotonin reuptake inhibitors, when there was rapid growth in the frequency of prescriptions for antidepressant medications. However, other efforts are needed to decrease the stigma associated with alcoholism and increase awareness among the general public and the medical and non-physician treatment community concerning the availability and effectiveness of treatment services.

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