

# Trends in the Treatment of Alcohol Problems in the US General Population, 1979 through 1990

## ABSTRACT

**Objectives.** The purpose of this study was to conduct a comprehensive analysis of alcohol-treatment service utilization trends in the general population during the 1980s.

**Methods.** Three national surveys of the US household population (1979, 1984, and 1990) were used for trend analysis of treatment utilization. Trends in demographic characteristics of persons with lifetime treatment rates and particular types of treatment were examined by means of logistic regression analysis, controlling for alcohol problem severity and other variables.

**Results.** Substantial increases in the numbers reporting treatment were found. In all surveys, Alcoholics Anonymous was the treatment used most frequently and its use increased most, especially for women. Men were more likely than women (odds ratio [OR] = 2.01, 95% confidence interval [CI] = 1.20, 5.39) and unmarried persons were less likely than married persons (OR = 0.47, 95% CI = 0.29, 0.77) to report treatment over time. Social consequences carried more predictive power than dependence symptoms.

**Conclusions.** From a general population perspective, while overall treatment capacity has increased, the structural changes in the public/private balance of services have not positively affected the representation of women or other characteristics of the treatment population. (*Am J Public Health.* 1995;85:55-60)

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## Introduction

Since 1970, major changes in the size and scope of the US system for treatment of alcohol-related problems have taken place.<sup>1-3</sup> Because of the extension of health insurance to cover treatment for alcoholism stimulated by the National Institute on Alcohol Abuse and Alcoholism,<sup>4</sup> concerns about cost containment in the health field in general, and policies of "new federalism" that have affected the provision of public treatment, patterns of growth and contraction have differed greatly between the private and public sectors.<sup>2,5-7</sup> Between 1979 and 1990, for example, the private system increased by 116% (with the number of for-profit agencies increasing by 604%, while the number of nonprofit agencies increased by 80%) and the public sector by only 11%.<sup>2,3,8</sup> The changes imply shifts in the characteristics of the treatment population and the demographic predictors of utilization.

In addition to this expansion, the specialized treatment system became more diversified, with new client groups entering treatment. This was most clearly evidenced by an increase between 1982 and 1990 in the number of programs offering early intervention services (from 1890 to 3174), drinking and driving programs (from 1392 to 2190), and employee assistance programs (from 1235 to 2185).<sup>2,7</sup>

Thus, while the number of individuals using public and private alcohol treatment agencies on a given day nearly doubled during the 1980s (from 292 752 to 563 430),<sup>7</sup> the major factors responsible for this increase imply that the correlates of use may have changed as well. For example, members of the general population reporting treatment in 1990 may be younger and have higher family incomes than those who reported treatment in

1979. It is difficult to tell how these changes may have affected the ratio of men to women entering treatment. On the one hand, many of the new treatment initiatives, such as criminal diversion and employee assistance programs, tend to recruit larger numbers of men than women. In the public sector especially, referrals increasingly come from the criminal justice system. The mean proportion of agencies in each state's treatment system that provided drinking and driving programs was 39% by 1987.<sup>9</sup> On the whole, persons in such programs are younger and more often male than other population groups in the system.<sup>10</sup> In the private for-profit and private nonprofit sectors, workplace referrals such as employee assistance programs play an increasingly important role and also have larger proportions of young and male service users.<sup>9</sup> However, at the same time, a strong focus on pregnant women and treatment has emerged, and federal and state legislation have mandated increased treatment allocations for women in the public sector that might have offset earlier lower utilization rates.

Coinciding with these developments has been an increase in the provision of care for alcohol problems (including self-help approaches) outside formal, alcohol-

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This paper was accepted September 16, 1994.

**TABLE 1—Lifetime Experience and Type of Alcohol-Related Treatment in US National Samples of Adults**

	Men			Women			Total		
	1979	1984	1990	1979	1984	1990	1979	1984	1990
Unweighted n	762	2093	969	1010	3128	1189	1772	5221	2058
Ever sought help with an alcohol problem, % <sup>a</sup>	2.7	5.5	8.3*	1.0	1.5	2.0	2.0	3.0	5.0*
Ever sought help with an alcohol problem at, % <sup>a</sup>									
Alcoholics Anonymous	1.3	3.4	4.9*	0.6	0.8	1.6	1.0	2.0	3.0*
Alcohol program	1.0	1.4	3.3**	0.4	0.6	0.4	1.0	1.0	2.0**
General hospital	0.4	1.3	2.1***	0.3	0.6	0.3	.. <sup>2</sup>	1.0	1.0***
Health/mental program	0.7	1.0	2.1***	0.3	0.4	0.6	.. <sup>2</sup>	1.0	1.0***
Mental hospital	0.2	0.2	0.8	0.1	0.2	0.2	1.0	1.0	1.0
A medical group or private physician	0.7	1.4	2.1	0.3	0.7	0.3	1.0	1.0	1.0
Social welfare department	0.1	0.8	0.4	0.0	0.0	0.0	.. <sup>b</sup>	.. <sup>b</sup>	.. <sup>b</sup>
Vocational rehabilitation program	0.1	0.6	1.1	0.1	0.2	0.1	.. <sup>b</sup>	.. <sup>b</sup>	1.0

<sup>a</sup>Percentages were calculated on weighted n's.

<sup>b</sup>Less than 0.1%.

\* $P \leq .001$ , Mantel-Haenszel chi-square test of linear trend, 1979–1990.

\*\* $P \leq .01$ , Mantel-Haenszel chi-square test of linear trend, 1979–1990.

\*\*\* $P \leq .05$ , Mantel-Haenszel chi-square test of linear trend, 1979–1990.

specific treatment agencies. For example, Alcoholics Anonymous (AA) has grown in a geometric fashion from about 100 members in 1940 to a reported 476 000 members in 1980, 653 000 members in 1983, and 979 000 members in 1990.<sup>11–14</sup> In addition, it has long been recognized that alcohol-related problems are handled by a broad range of general health and social service agencies as well as specialized programs,<sup>15–18</sup> and research attention has recently been directed at gauging the extent of alcohol-related problems in the caseloads of different types of agencies.<sup>19–24</sup> However, this research lacks comprehensive and comparable coverage across health and social service agencies, as well as measures of change.

Most of the discussion of these critical questions has been based on treatment statistics. The National Drug and Alcohol Treatment Utilization Survey (NDATUS) collects agency-level utilization data from public and private agencies.<sup>23</sup> Disaggregated data on client populations, however, are not available from this or any other source. We examine changes in treatment for alcohol problems in the United States over the decade of the 1980s, using national surveys of the adult household population.

## Methods

The analysis is based on three comparable probability surveys of the household population of the 48 coterminous US states conducted by the Alcohol Research Group in 1979, 1984, and 1990. The 1979 interviews ( $n = 1772$ ) were conducted by the Response Analysis Corporation, using a multistage sampling design.<sup>25</sup> Fieldwork on the 1984 ( $n = 5221$ ) and 1990 ( $n = 2058$ ) surveys was conducted by the Institute of Survey Research of Temple University. For all three surveys, a multistage sample design with 100 primary sampling units was used, although for the 1984 survey an additional 10 sampling units were selected from geographical areas with high proportions of Black and Hispanic residents, as part of a substantial oversampling of these two groups.<sup>26</sup> Response rates in the three surveys were 71%, 72%, and 70%, respectively. In each survey, one individual aged 18 years or older was randomly chosen for interview in each household in the sample. Census data were used to calculate weights for each sample to attain representativeness of the national adult population for that year on age, sex, and region, taking account of nonresponse rates. In addition, weights were calculated to adjust for

inefficiencies of the clustered sample designs and poststratification weighting procedures used by estimating an average design effect for each year. The average design effect ( $Deff$ ) was calculated using 31 demographic and drinking variables. This approach, suggested by Kish,<sup>27</sup> reduces the effective  $n$  such that  $n$  (effective) =  $n/Deff$ . (For further technical details, see Greenfield et al.<sup>28</sup>) For this paper, analysis was conducted on the weighted samples. The effective  $n$ 's for the three surveys were 1006 in 1979, 1230 in 1984, and 1150 in 1990.

## Measures

In each of the three surveys, current and former drinkers were first asked, "Have you ever gone to anyone—a physician, Alcoholics Anonymous, a treatment agency, anyone at all—for a problem related in any way to *your* drinking?" If the respondent answered yes, the interviewer continued, "I am going to read you a list of community agencies and professions. For each one, please tell me if you have gone there about a drinking problem." (See list shown in Table 1).

Two lifetime measures of alcohol problems, dependence symptoms and social consequences of drinking, were used; these measures have been used for other comparisons of these surveys<sup>26,29</sup> (Midanik LT, Clark WB. Drinking problems in the U.S.: description and trends [1984–1990]. *J Stud Alcohol*. In press). The dependence symptoms score sums the number of positive responses to 9 items, while the social consequences score sums positive responses to 12 items. Previous research suggests that dependence symptoms and social consequences ("getting in trouble" because of drinking) are each associated, perhaps differentially, with entering treatment.<sup>18,30,31</sup> Cutoff points of 3 or more dependence items and 2 or more social consequences are used for some analyses. These cutoff points were selected because they provide high comparability across the three surveys (Midanik, Clark, *J Stud Alcohol*, in press).

## Data Analysis

Linear trends across years were tested with the Mantel-Haenszel chi-square test overall, disaggregating data by sex, and then by three age groups within each sex.<sup>32,33</sup> Logistic regression<sup>33</sup> was used to predict the likelihood of ever having

received help based on demographic variables associated with treatment use in the literature (male sex, older age, lower educational levels, income in the lower quartile, and being unmarried).<sup>18,34,35</sup> Survey year was also included, with 1979 serving as the reference category, and for a five-level age variable, the middle age group (40 through 49 years) was chosen as the reference category. Frequency of dependence symptoms over the lifetime was included as a continuous variable, as was a count of social consequences.

## Results

Table 1 shows the proportions of men and women receiving any help and particular types of help related to an alcohol problem. Since alcohol treatment episodes are rare events in general populations, especially for women, trends observed within particular types of agencies should be regarded only as indicative. For men, between 1979 and 1990, trends are significant for alcohol services in any setting, specialized alcoholism treatment programs, AA, general hospitals, and health or mental health programs.

No significant differences over time were found among women reporting treatment, probably owing to their very low base rates (all 2% or less), and proportions did not vary considerably between non-alcohol-specific programs and the two alcohol-specific categories. The male-to-female ratio in specialized alcohol programs enlarged from 2.5:1 to 8:1 during the period. The male-to-female ratio also increased for the overall help measure (from 2.7:1 to 4.2:1) and for AA (from 2.2:1 to 3.1:1). At all three time points, higher proportions of both men and women reported going to AA than to any other single type of program.

Table 2 shows the age distribution by sex of those reporting service use. Despite the longer period "at risk" of lifetime treatment among older respondents, in 1990 older individuals were consistently less likely than younger respondents to report having gone for help for alcohol problems on each of these measures. Young and middle-aged men were more likely than older men to have been in treatment. Middle-aged and older men were more likely to have gone to AA than to have gone to another alcohol program in 1984 and 1990, while younger men were almost equally likely to have gone to each type of program. For the youngest group of men, significant linear trends across the

**TABLE 2—Lifetime Experience of Alcohol-Related Treatment, by Age and Sex, US National Samples of Adults**

	Men			Women		
	18–29 y	30–49 y	50+ y	18–29 y	30–49 y	50+ y
<b>Unweighted n's</b>						
1979	185	273	302	282	354	364
1984	639	802	637	928	1143	1014
1990	201	355	313	241	495	453
<b>Ever sought help with an alcohol problem, %<sup>a</sup></b>						
1979	1.9	4.4	1.8	0.7	2.0	0.5
1984	6.1	6.4	4.2	2.5	1.5	0.6
1990	10.3	9.6*	4.9	3.3	2.6	0.6
<b>Ever went to Alcoholics Anonymous, %<sup>a</sup></b>						
1979	1.4	1.3	1.1	0.3	1.0	0.5
1984	2.7	4.0	3.5	1.1	0.8	0.6
1990	5.8*	5.6	3.2	2.3	2.0	0.6
<b>Ever went to an alcoholism program, %<sup>a</sup></b>						
1979	0.5	1.7	0.7	0.3	0.5	0.3
1984	2.3	1.5	0.4	1.4	0.4	0.3
1990	4.8**	3.3	1.8	0.1	0.7	0.3

<sup>a</sup>Percentages were calculated on weighted n's.

\* $P \leq .05$ , Mantel-Haenszel chi-square test of linear trend by age group, 1979–1990.

\*\* $P \leq .01$ , Mantel-Haenszel chi-square test of linear trend by age group, 1979–1990.

**TABLE 3—Lifetime Experience and Type of Alcohol-Related Treatment for Those with Three or More Alcohol Dependence Symptoms and Those with Two or More Alcohol-Related Social Consequences, US National Samples of Adults**

	≥ 3 Lifetime Dependence Symptoms			≥ 2 Lifetime Social Consequences		
	1979	1984	1990	1979	1984	1990
Unweighted n	96	456	258	165	612	387
Ever sought help with an alcohol problem, % <sup>a</sup>	14	21	32*	9	18	24**
<b>Ever went to, %<sup>a</sup></b>						
Alcoholics Anonymous	11	12	22***	4	10	15*
Alcohol program	6	7	12	3	5	9***
General hospital	3	3	8	2	2	6
Health or mental program	5	4	9	3	3	6
Mental hospital	1	1	4	1	1	2
A medical group or private physician	2	4	8***	2	3	6
Social welfare department	0	1	2	1	1	1
Vocational rehabilitation program	... <sup>b</sup>	1	5	... <sup>b</sup>	1	3

<sup>a</sup>Percents calculated on weighted n's.

<sup>b</sup>Less than 0.5%.

\* $P \leq .01$ , Mantel-Haenszel chi-square test of linear trend, 1979–1990.

\*\* $P \leq .001$ , Mantel-Haenszel chi-square test of linear trend, 1979–1990.

\*\*\* $P \leq .05$ , Mantel-Haenszel chi-square test of linear trend, 1979–1990.

surveys exist for having gone anywhere for treatment and for having gone to AA, and the pattern was similar, if weaker, for middle-aged men.

Table 3 examines the treatment experiences of individuals who reported alcohol-related problems at some point in their lives. In 1990, almost one third of

**TABLE 4—Logistic Regressions for Demographic Variables and for Demographic and Alcohol Problem Variables on Any Form of Help for Alcohol Problems**

	Demographic Variables		Alcohol Problems Added	
	Odds Ratio	95% Confidence Interval	Odds Ratio	95% Confidence Interval
1984 survey	2.08	1.17, 3.72	1.81	0.95, 3.48
1990 survey	2.82	1.60, 4.95	1.54	0.81, 2.95
Male sex	4.17	2.64, 6.58	2.01	1.20, 3.39
Age 18–29 y <sup>a</sup>	0.55	0.31, 0.98	0.56	0.29, 1.07
Age 30–39 y <sup>a</sup>	0.75	0.42, 1.33	0.68	0.34, 1.33
Age 50–59 y <sup>a</sup>	0.40	0.18, 0.90	0.49	0.20, 1.23
Age ≥ 60 y <sup>a</sup>	0.28	0.14, 0.56	0.51	0.22, 1.16
High school graduate	0.69	0.44, 1.09	0.97	0.57, 1.66
Low income	1.45	0.90, 2.32	1.03	0.59, 1.79
Married	0.48	0.31, 0.73	0.47	0.29, 0.77
Alcohol dependence	...	...	1.31	1.16, 1.47
Social consequences	...	...	1.62	1.41, 1.86

Note. No treatment = 0, treatment = 1.

<sup>a</sup>The reference category was age 40–49 y.

those with three or more dependence symptoms and one fourth of those with two or more social consequences reported having had some treatment related to alcohol problems. The increases between 1979 and 1990 in the proportions of these subgroups are highly significant. AA accounted for the preponderant share by 1990 (almost 70% of those reporting three or more dependence symptoms, and more than 60% of those reporting two or more social consequences, who had gone somewhere for treatment had gone to AA; about one third had gone to an alcoholism treatment program). For individuals reporting dependence symptoms and social consequences, a significant linear trend was found for having gone somewhere for treatment and for having gone to AA. Significant linear trends were also found for individuals reporting three or more dependence symptoms having gone to a medical group or private physician and for individuals reporting two or more social consequences having gone to an alcohol treatment program. Trends appeared similar for other forms of care.

Table 4 reports the results of logistic regressions on the dichotomous variable of getting help for alcohol problems vs not getting help. On the left side of the table we examine the strength of the year of the survey as well as demographic variables as predictors of reporting treatment. For this regression, both year-of-study contrasts—1984 vs 1979 and 1990 vs 1979—were significant when we controlled for other variables, as were several of the demographic variables. Respondents in 1984

were more than twice as likely as respondents in 1979 to have entered treatment at some time in their lives; respondents in 1990 were almost three times as likely. Men were more than four times as likely as women to have entered treatment. Individuals in every age category except 30 through 39 years were less likely than those in the 40- through 49-year-old age group to have gone to treatment. Unmarried persons were half as likely as married persons to have been treated. Education and income were not significant.

On the right side of the table the two lifetime problem measures, alcohol dependence symptoms and alcohol-related social consequences, are added to the model, with all variables again entered simultaneously. Most variables lost their significance when the problem measures were added. Sex remained significant, with men twice as likely as women to enter treatment. Marital status retained its predictive power. Both alcohol problem measures were significant, but the social consequences measure had higher odds of predicting treatment. We conducted a likelihood ratio test for the difference between the models, comparing it with a chi-square distribution with 2 degrees of freedom. The alcohol dependence and alcohol-related social consequences measures were significant contributors to the model ( $P < .001$ ). This was further confirmed by the significance tests of the two estimated coefficients. Thus, when problem levels were controlled for, on the whole, demographic variables—with the

exception of being male and unmarried—lost their importance.

Interactions of sex and income, as well as interactions of year of the survey with sex, with income, with education, with age, and with marital status, were also tested. None of these interactions was significant and they were excluded in the final model.

Additional logistic regressions were conducted separately for each survey, using the same demographic and problem measures, to determine whether both methods (single-year and combined-year) produced consistent findings (data not shown). Overall, the results were similar to those shown in Table 4. For each year, only marital status and sex were significant after dependence symptoms and social consequences were added. Both problem measures were significant for the regressions on each survey, but social consequences had higher odds ratios than dependence symptoms in predicting treatment. Marital status remained significant in 1990 and sex remained significant in 1984. Odds ratios remained at similar levels across the surveys for both problem measures and for marital status, but for men, the odds of reporting treatment greatly increased.

## Discussion

The present report gives us a view of the development of alcohol treatment in the United States during the 1980s from a general population perspective. In spite of decreasing per capita alcohol consumption rates since 1981,<sup>36,37</sup> these findings document considerable growth in the proportion of the adult population that has experienced treatment or help from AA. This increase may be partially accounted for by the increases in treatment capacity nationally, as well as by increased use of combined alcohol and drugs by segments of the population.<sup>3,38,39</sup> However, it may also be due to the growing public awareness and concern about alcohol problems in the United States, which may have resulted in an increase in the reporting of problems at lower levels of consumption<sup>40</sup>; attention to those problems at even lower levels of consumption, as has been found in other reports on national data<sup>41</sup>; and an increase in social policies designed as early case-finding strategies.<sup>7</sup>

Like rates of heavy drinking and drinking problems, rates of having been treated are highest among men and among young and middle-aged adults.

The 18- through 39-year-old age group of men and women reported more lifetime use than other age groups. The age distribution generally suggests a cohort-related difference in ways of handling alcohol problems and is also consistent with higher rates of co-occurring drug abuse. As treatment provision has grown, AA has more than held its own as a primary source of help to individuals with alcohol problems: about 40% of men and 60% of women who reported having gone anywhere in 1979 had gone to AA, while the figure for 1990 was 60% for men and 80% for women, suggesting that AA is a particularly important resource for women. There also appears to be more of an overlap between use of AA and treatment agencies than in the past. It is becoming rare to find people in the formal treatment system who do not also have some experience with AA. AA and treatment at specialized alcohol agencies increased at slightly higher rates than treatment at non-alcohol-specific agencies. Many of those changes in rates appear to be related to significant increases in men's treatment use across the three surveys. While women's use of each type of service also increased, the increases were not statistically significant, in spite of the substantial increase in treatment capacity over the past 10 years. However, this finding may be due partially to low power in the analysis; the numbers are small because treatment is a rarer event for women than men. Across the three surveys, men reported using specialized alcohol programs more than other types of services, whereas women reported the use of other types of care almost as much as alcohol treatment programs and in fact reported more use of health and mental health programs than of specialized alcohol treatment programs.

The results indicate that, from a general population perspective, the gender gap in the utilization of alcoholism programs has not decreased and may be widening. While federal and state policies increasingly make provisions for women in need of services by augmenting programs for treating women, a significant increase has not yet been evidenced in general population utilization rates. The new groups of women entering treatment generally or through specialized programs such as those for pregnant addicts or alcoholics may not have influenced the statistics yet. This finding highlights the inherent dilemmas in household- vs treatment facility-based studies of service

utilization. Analysis of community alcohol treatment samples has found, for example, that higher proportions of minority ethnic groups in treatment samples report being homeless or living in settings that are not included in household surveys.<sup>42,43</sup> These service-based findings suggest that while some subgroups of minority populations may have higher representation in treatment, they may be those less likely to be found in a household survey. This may be the case for subgroups of women as well. Full interpretation of these differences in household surveys and treatment statistics is hampered by the lack of comprehensive data on utilization of public and private treatment systems. The only national data that include both public and private agencies (NDATUS) underreport private programs.<sup>2</sup> Thus, while one group may achieve higher representation in these service-based statistics, the public sector is overrepresented. An additional drawback of provider surveys is that the data are not client-level data and so cannot be examined in terms of other client characteristics, such as severity of alcohol problems. Also, multiple service use by individuals is not accounted for. Thus, general population surveys, while not without limitations, provide an important complement to service-generated findings.

These findings suggest that developments in both the public and private sectors during the past 10 years may not have greatly changed existing treatment patterns of particular population groups. They indicate the importance of examining both treatment statistics and general population data when investigating access and utilization of services. It is clear that simply achieving increased treatment capacity does not necessarily result in changes in utilization patterns for targeted population groups. Since the reservoir of unmet need exists in the majority subgroups (e.g., men) as well, increased capacity, without special outreach efforts, can readily be absorbed by them and may only accentuate preexisting utilization differences. □

### Acknowledgments

Preparation of this paper was supported by a National Alcohol Research Grant (AA-05595) from the US National Institute on Alcohol Abuse and Alcoholism to the Alcohol Research Group, Medical Research Institute of San Francisco.

The authors wish to acknowledge Gary Collins and Gloria Bocian for programming; Tammy Tam, PhD, for statistical consultation;

and the useful suggestions of two anonymous reviewers.

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### ***Call for Abstracts for the 1995 APHA Annual Meeting***

The 123rd American Public Health Association Annual Meeting will be held October 29 through November 2, 1995, in San Diego, Calif. The meeting's theme will be "Decision Making in Public Health: Priorities, Power and Ethics." The Call for Abstracts was published in the December 1994 issue of *The Nation's Health* and has *February 10, 1995*, as the deadline for submission.

If you are not a member of APHA and would like to receive a copy of the Call for Abstracts, please call (202) 789-5620.