ABSTRACT

Objectives. The purpose of this study was to determine the prevalence of recovery from alcohol problems with and without treatment, including whether such recoveries involved abstinence or moderate drinking.

Methods. Data from two surveys of randomly selected adults in the general population were analyzed. Random-digit dialing was used to conduct telephone interviews with 11,634 and 1034 respondents. Respondents 20 years of age or older were categorized on the basis of drinking status and history.

Results. Both surveys found that most individuals (77.5% and 77.7%) who had recovered from an alcohol problem for 1 year or more did so without help or treatment. A sizable percentage (38% and 63%) also reported drinking moderately after resolving their problem.

Conclusions. These two surveys are among the first to report prevalence rates for recovery from alcohol problems for treated and untreated individuals and for moderation and abstinence outcomes. (Am J Public Health, 1996;86:966-972)

Introduction

Even though estimates of the ratio of untreated to treated individuals with alcohol problems in the general population range from 3:1 to 13:1,1 there has been little interest in the fates of untreated individuals, including whether they can recover without treatment (natural recovery).2-4 Recently, prominent organizations such as the Institute of Medicine5 and the American Psychiatric Association6 have acknowledged that natural recoveries constitute a significant pathway to recovery from alcohol problems. However, while epidemiological and longitudinal studies of alcohol problems in the general population have led to speculation about the prevalence of untreated recoveries, these studies have not directly assessed recovery rates for both treated and untreated individuals or whether drinking outcomes involved abstinence or moderate drinking.1,4,7,9

Traditionally, alcohol problems have been viewed from the context of individuals who are severely dependent on alcohol.10 However, epidemiological studies show that while persons with severe alcohol problems constitute the majority of individuals in treatment programs, they represent a minority of those with alcohol problems.10,11 It has been estimated that the ratio of problem drinkers (i.e., mild alcohol dependence) to those severely dependent on alcohol is about 4:1.5 Although severely dependent alcohol abusers have more serious problems, most alcohol-related costs to society stem from the large numbers of problem drinkers (e.g., drunk driving, days of missed work, domestic violence).5,12 From a public health perspective, the fate of all individuals with alcohol problems is important.

In two recent surveys, randomly selected adults in the general population were asked a broad range of questions about their past and present use of alcohol. Using data from these surveys, this report examines the prevalence of treated and untreated recoveries from alcohol problems. Because research indicates that individuals with low-severity problems often recover by reducing rather than stopping drinking, recoveries were also classified as involving abstinence or moderate drinking.

Methods

Data were derived from two surveys: the National Alcohol and Drugs Survey ("National Survey"), conducted by Statistics Canada in March 1989,13 and the Ontario Alcohol and Drug Opinion Survey ("Ontario Survey"), conducted by the Institute of Social Research at York University (Toronto) in April and May 1993.14 In both surveys, persons living in institutions (e.g., those in hospitals) were excluded. All respondents were assured of anonymity (i.e., names were never asked). Random-digit dialing was the sampling method used in both surveys.14,15 Households without telephones (≤2%) could not be covered by this sampling method.

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Recovery from Alcohol Problems with and without Treatment: Prevalence in Two Population Surveys

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In the National Survey, telephone interviews were conducted with 11,634 Canadians, 15 years of age or older, from all 10 provinces. Persons living in the Yukon and Northwest territories were not interviewed because a sizable percentage did not have telephones. Interviewers randomly selected one potential respondent from within each household to complete the questionnaire (no proxy or substitution interviews were allowed). The overall response rate was 78.7%. Reasons for nonresponses included the following: refusal, illness, absent during survey, language problems, and no contact. The final sample was weighted to ensure representativeness and to compensate for survey nonresponse (e.g., households without telephones, households with multiple telephones, number of respondents within households, and census projection counts for each province). The exact weighting procedure and sampling design have been discussed elsewhere.15

The survey period was chosen to avoid holiday periods, which might overrepresent drinking by respondents (this procedure was not used in the Ontario Survey).15

In the Ontario Survey, telephone interviews were conducted with 1034 respondents 18 years of age or older. One respondent from within each household was randomly selected to complete the interview. Respondents had to speak one of Canada's two official languages (English or French; only six interviews were conducted in French). As a means of ensuring a representative sample and compensating for potential sources of survey error, the final overall response rate of 65% was weighted by considering the number of telephones and adults in each household to be a probability sample of adults in Ontario. An average design weight for a selection of variables was calculated, and the sample was downweighted to all cases to take account of design effects in tests of significance. The weighting procedure and sampling design for this survey have been described elsewhere.14

Of the original National Survey and Ontario Survey samples, data from respondents 20 years of age or older (in each survey, this was the closest age category to the legal drinking age of 19 in Canada) were considered for the present study (n = 10,796 and n = 1001, respectively). For all analyses, unweighted values are used in reporting sample sizes, while results from statistical tests are based on weighted data.

Both surveys asked all respondents questions that allowed for a determination of past or current alcohol problems (i.e., frequency and quantity, problems associated with use). (A copy of the questions used in both surveys is available from the first author on request.) If respondents had had an alcohol problem and had resolved it, they were asked questions about their drinking that allowed for a determination as to whether their resolution was to abstinence or nonabstinence (i.e., moderate drinking). They were also asked whether they had ever received any formal services, help, or treatment for an alcohol-related problem. In the National Survey, respondents were also asked the approximate length of their resolution. Several background questions (e.g., age, education) were also asked of all survey respondents.

The drinking criteria chosen for men and women in the present study were consistent with definitions used in previous research.16-20 The sample size and criteria for classifying subjects into each of the four groups are noted subsequently. Lifetime abstainers and respondents not meeting any of the following criteria were excluded from subsequent analyses.

Respondents who were classified as "resolved abstinent" (National Survey, n = 302; Ontario Survey, n = 34) were current abstainers who reported past problems related to their alcohol use and had quit drinking for at least 1 year prior to the interview. These respondents had to report experiencing at least one of the following types of alcohol problems prior to their resolution: (1) problems affecting their work, studies, or employment opportunities; (2) problems interfering with their family or home life; (3) problems affecting their physical health; (4) problems affecting their friendships or social life; and (5) problems affecting their financial position.

Those who were classified as "resolved nonabstinent" (National Survey, n = 144; Ontario Survey, n = 60) were current drinkers who reported past problems related to their alcohol use (same problems as for resolved abstinent subjects) and had reduced their drinking to a nonproblem level for at least 1 year prior to the interview. These individuals reported experiencing no current (i.e., past 12 months) problems due to their alcohol consumption, and their drinking levels in the past 12 months (i.e., the period covered by the survey) were not considered to constitute gender-related health risks.16-18 All respondents were first asked, “During the last 12 months, how often on average did you drink alcoholic beverages?” They were then asked, “On the days when you drank, how many drinks did you usually have?” When respondents were asked about drinks, they were told that the word “drink” meant “one straight or mixed drink with one ounce and a half of hard liquor,” “one bottle of beer or glass of draft,” or “one glass of wine or a wine cooler.” Allowable drinking was defined as (1) usual drinking of three drinks or fewer for men and two drinks or fewer for women; (2) no more than 2 days of five to seven drinks in the past year (to allow for a small amount of celebratory drinking [e.g., holidays]); and (3) a maximum number of drinks consumed on any one occasion in the past year of seven.

Those who were classified as current problem drinkers (National Survey, n = 1158; Ontario Survey, n = 104) were current drinkers who reported experiencing problems due to their alcohol use in the previous year (same problem definition as for resolved abstinent respondents) or who drank at a level associated with health risks. For men, the latter was defined as usually drinking seven drinks or more on days when they drank; for women, it was defined as usually drinking five drinks or more.19,20 Respondents also had to report drinking at least one time per week in the past year.

Those who were classified as “current social drinkers” (National Survey, n = 3319; Ontario Survey, n = 405) were current drinkers who reported no prior problems associated with their alcohol use and who drank at levels that would not be considered as presenting a potential health risk (see definition for resolved nonabstinent respondents).

All resolved respondents in both surveys were further classified as to whether they had ever used any of the following types of treatment, help, or services related to their alcohol problem: Alcoholics Anonymous or other support group; psychologist, psychiatrist, or social worker; psychiatric hospital; minister, priest, or rabbi; doctor or nurse; hospital or emergency department; alcohol/drug addiction agency; or detoxification center or halfway house. Ontario Survey respondents were also asked whether they had been in a drinking and driving program because of their drinking, but there were no affirmative responses among the resolved respondents.
Results

Figure 1 shows that of all respondents in both surveys who reported resolving an alcohol problem, 77.5% (n = 322; National Survey) and 77.7% (n = 70; Ontario Survey) did so without formal treatment or help. The remaining 22.5% (n = 124) and 22.3% (n = 24) in each survey reported using some type of alcohol-related service, self-help group, or counseling. Furthermore, of all recoveries in the National and Ontario surveys, 62.0% (n = 302) and 37.3% (n = 34) of respondents, respectively, reported returning to abstinence; the remaining recoveries, 38.0% (n = 144) and 62.7% (n = 53), respectively, involved moderation outcomes. More strikingly, as shown in Figure 1, in both surveys almost all (96.7% and 90.6%, respectively) of the moderate drinking recoveries involved respondents who had never received any alcohol-related help or treatment. The majority (65.7% and 56.0%, respectively) of abstinence recoveries also occurred in the absence of treatment. In both surveys, of all respondents who said they had used some type of help or treatment for their alcohol problem, the predominant resource reported was Alcoholics Anonymous (National Survey, 82.8%; Ontario Survey, 52.8%).

When treatment use by drinking recovery type was examined, chi-square tests revealed significant (both \( P < .001 \)) differences for each survey, suggesting that nonabstinence recoveries were more likely to occur among respondents who recovered without treatment than among treated individuals. Because resolved nonabstinence–treatment recoveries constituted a very small number of cases in both surveys (National Survey: 3.3%, n = 9; Ontario Survey: 9.4%, n = 7), they were excluded from further analyses.

Table 1 presents comparisons of sociodemographic and alcohol-related variables across the three resolved groups in both surveys: resolved abstinence–treatment, resolved abstinence–no treatment, and resolved nonabstinence–no treatment. Chi-square tests were performed on nominal (nonparametric) variables, and one-way analyses of variance (ANOVA) were performed on quantitative (parametric) variables.

In the National Survey, as shown in Table 1, there were significant differences between the three groups for 7 of the 10 variables. Respondents who returned to moderate drinking, in comparison with those who were abstinent, were more likely to be female, to be younger, to have some postsecondary education, to have higher incomes, and to have stopped smoking (among those who ever smoked; nondaily smokers were excluded), and fewer had two or more alcohol problems prior to their resolution. In the Ontario Survey, with two exceptions, there were no significant \( (P > .05) \) differences between the three groups on variables for which chi-square tests could be performed (i.e., for some variables, chi-square tests could not be performed because more than 20% of cells had expected frequencies of less than 5). As in the National Survey, a greater percentage of Ontario Survey respondents in treatment reported two or more alcohol-related problems. In both surveys, one-way ANOVAs showed that respondents in treatment reported a significantly greater mean number of alcohol-related problems. For the Ontario Survey, Scheffé post hoc comparisons revealed that the resolved abstinence–treatment group differed significantly from the other two
TABLE 1—Sociodemographic Characteristics of Three Resolved Drinker Groups from Two Canadian Surveys

<table>
<thead>
<tr>
<th>Group</th>
<th>Resolved Abstinent with Treatment</th>
<th>Resolved Abstinent with No Treatment</th>
<th>Resolved Nonabstinent with No Treatment</th>
<th>P*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>National Survey (n = 115)</td>
<td>Ontario Survey (n = 17)</td>
<td>National Survey (n = 187)</td>
<td>Ontario Survey (n = 17)</td>
</tr>
<tr>
<td>Male, % (no.)</td>
<td>75.9 (91)</td>
<td>62.3 (10)</td>
<td>79.1 (137)</td>
<td>28.7 (5)</td>
</tr>
<tr>
<td>Age &lt; 34 years, % (no.)</td>
<td>14.0 (19)</td>
<td>15.1 (2)</td>
<td>18.8 (39)</td>
<td>29.7 (5)</td>
</tr>
<tr>
<td>Family income ≥ $40,000, % (no.)</td>
<td>21.2 (20)</td>
<td>69.8 (12)</td>
<td>28.6 (38)</td>
<td>77.2 (13)</td>
</tr>
<tr>
<td>Married, % (no.)</td>
<td>68.7 (69)</td>
<td>62.3 (10)</td>
<td>66.9 (115)</td>
<td>67.3 (11)</td>
</tr>
<tr>
<td>Some postsecondary education, % (no.)</td>
<td>21.8 (21)</td>
<td>47.2 (9)</td>
<td>19.0 (32)</td>
<td>47.5 (7)</td>
</tr>
<tr>
<td>White collar, % (no.)</td>
<td>26.8 (19)</td>
<td>30.6 (6)</td>
<td>23.8 (24)</td>
<td>40.0 (5)</td>
</tr>
<tr>
<td>Resolved alcohol problem &gt; 5 years, % (no.)</td>
<td>58.9 (70)</td>
<td>. . . d</td>
<td>58.3 (115)</td>
<td>. . . d</td>
</tr>
<tr>
<td>Current ever smokers, % (no.)</td>
<td>73.9 (68)</td>
<td>41.0 (5)</td>
<td>57.3 (72)</td>
<td>44.1 (5)</td>
</tr>
<tr>
<td>2 or more past alcohol problems, % (no.)</td>
<td>81.6 (96)</td>
<td>84.9 (15)</td>
<td>48.3 (83)</td>
<td>38.6 (6)</td>
</tr>
<tr>
<td>No. of past alcohol problems, mean (SD)</td>
<td>3.6 (1.6)</td>
<td>3.6 (1.7)</td>
<td>2.0 (1.3)</td>
<td>1.8 (1.3)</td>
</tr>
</tbody>
</table>

Note. National Survey = 1989 National Alcohol and Drugs Survey; Ontario Survey = 1993 Ontario Alcohol and Drug Opinion Survey. Percentages, means, and standard deviations were based on weighted values. Sample sizes varied for some of the characteristics measured. NS = nonsignificant (P > .05).

*All analyses were chi-square tests except for mean number of alcohol consequences (one-way analysis of variance).

**Not determinable because more than 20% of cells had expected frequencies of less than 5.

†Both surveys: students and homemakers excluded; National Survey: respondents who worked in past year; Ontario Survey: current or prior employment.

‡Data for this variable not available.

§Nondaily smokers excluded.

The percentages of problem drinkers in the National and Ontario surveys with 2 or more reported alcohol problems in the previous 12 months were 39.8% and 50.7%, respectively.

⁄Out of a maximum of 5 possible problems.

*All groups differed significantly from each other (Scheffé post hoc comparisons, P < .05).

¶Resolved abstinent–treatment group differed significantly from the other two groups (Scheffé post hoc comparisons, P < .05).

For those individuals with alcohol problems who reported returning to moderate drinking, a major issue is whether their postrecovery drinking was like that of social drinkers in the general population. To address this, in both surveys the resolved nonabstinent–no treatment respondents’ drinking in the past year was compared with the drinking of the other two current drinker groups: social drinkers and problem drinkers. Table 2 shows the means and standard deviations for six drinking variables for the three drinker groups in each survey. For two of the six variables, Ontario Survey findings could not be examined because data parallel to those of the National Survey were not collected. One-way ANOVAs were performed on all variables for both surveys, and all of these analyses yielded significant differences. With one exception, the comparisons between the three current drinker groups in each survey showed that the resolved nonabstinent and social drinker groups were similar and that both differed significantly from the problem drinker group (Scheffé post hoc tests). The exception occurred for mean number of days drinking in the past week, for which Scheffé post hoc comparisons showed all groups to differ significantly. As shown in Table 2, problem drinkers reported more mean days drinking in the past week than the resolved nonabstinent respondents, who in turn reported more drinking days than the social drinkers.

### Discussion

Three major findings emerged from the two surveys. First, more than three quarters of all adults in both surveys who recovered from an alcohol problem for a year or more did so without formal help or treatment. Of note, this finding is consistent with a large body of evidence showing that of all cigarette smokers, 80% to 90% stop on their own.21,22 Second, these remarkably similar findings came from two independent surveys conducted a few years apart by two different interview groups. The fact that the results from the two surveys parallel each other suggests that conclusions based on these findings are likely to be robust. Third, although all respondents had to be recovered for a minimum of 1 year or more, more than half of all respondents in the National Survey, in which length of recovery was assessed, reported having been recovered for more than 5 years. This finding is significant because two other studies of treated23 and untreated24 recovered alcohol abusers have shown that relapses are highly unlikely after 5 years.

Although these findings may be seen as inconsistent with the traditional model of alcoholism,25 they must be viewed in the context that “the types of problems reported in surveys are rarely as severe as those observed in alcoholism clinics.”26,p72 From a public health standpoint, the critical issue related to societal
costs of alcohol problems is that problems of any nature and number enter into the final equation. This is important because persons whose problems are not severe account for the preponderance of costs (i.e., alcohol problems “occur at lower rates but among much greater numbers as one moves from the heaviest drinkers to more moderate drinkers.”39,40).

Both surveys revealed that a substantial number of all recoveries involved individuals who resolved their alcohol problem by reducing their drinking to levels that would not be considered a health risk and did not incur consequences. The current drinking of the resolved respondents who engaged in moderate drinking resembled that of members of the social drinker group who reported never having had an alcohol problem. There was a large difference between the two surveys in terms of the prevalence of nonabstinence recoveries (National Survey, 38%; Ontario Survey, 63%). However, when abstinence and nonabstinence prevalence rates for Ontario respondents (50.8% and 49.2%, respectively) in the National Survey were compared with those of Ontario Survey respondents (37.5% and 62.5%, respectively), a chi-square test revealed no significance difference ($P > .05$). Thus, nonabstinence recovery rates appear to be higher in the province of Ontario than in the national sample. These figures were not unexpected; several studies have shown that sociocultural factors not only are related to problem severity but also appear to be associated with recovery type.37-39 Specifically, of those who recover without treatment, resolved nonabstinent individuals are of higher socioeconomic status and have higher incomes and more education than resolved abstinent individuals. With respect to the province of Ontario, statistics show that individuals in this province have higher incomes and greater educational levels than those in many of the other provinces.15

The fact that almost all of the nonabstinence recoveries in both surveys occurred in the absence of treatment parallels findings from two other studies. In a study involving short-term recoveries (6 months), more untreated (45%) than treated (26%) alcohol abusers returned to nonproblem drinking.27 In a study of only untreated problem drinkers, almost all recoveries involved a return to moderate drinking.31 Another finding in both surveys that is consistent with results from other studies is that a greater percentage of women with alcohol problems returned to moderate drinking than to abstinence.4,5,30,32

In both surveys, resolved respondents who had been in treatment reported almost twice as many alcohol-related consequences as respondents who resolved without treatment. These data, coupled with the high percentage of such respondents reporting more than one alcohol problem prior to their resolution, suggest that respondents who had been in treatment had more serious alcohol problems than those who recovered on their own. Similar findings have been reported for long-term naturally recovered alcohol abusers recruited by advertisements.30

As with almost all major general-population surveys, the present surveys had methodological limitations. First, they involved self-reported data, retrospective reports, and no formal diagnostic assessment (e.g., Diagnostic and Statistical Manual of Mental Disorders [4th edition; DSM-IV]). Second, drinking assessments...
involved a short time frame (i.e., past week or past year). Third, the anonymity given respondents could have encouraged dishonesty (i.e., knowing that one’s answers could not be checked), although it could as easily have promoted more accurate reporting. Finally, both surveys involved telephone interviews (note, however, that over the years, survey research has increasingly relied on telephone interviews; in reviewing different interview methods, Polich and Kaelber concluded that there does not seem to be a reason to prefer a certain method over another23).

Although none of the questions in the two surveys allowed for a determination of the severity of alcohol problems, all past (resolved) and current problem drinkers did report experiencing some alcohol-related problems. Resolved drinkers in the two surveys reported an average of 2.2 and 2.1 (National Survey and Ontario Survey, respectively) alcohol problems (out of 5 possible problems) prior to their recovery, and close to half of the respondents (42%, National Survey; 47%, Ontario Survey) in each survey reported 2 or more problems. While some might argue that experiencing a single alcohol problem is not sufficient ground: for classifying one as a problem drinker, this definition is consistent with the criteria for an alcohol abuse diagnosis in the DSM-IV, according to which a maladaptive pattern of use leads to “clinically significant impairment or distress, as manifested by one (or more) of the following within a 12-month period”18 (the problems listed in the DSM-IV are similar to those used in the current surveys [i.e., work, school, home, significant social or interpersonal problems]).

Although there were no external validity checks, several factors add confidence to the data. First, although the two surveys were conducted in different locations, in different years, and by different organizations, their results were consistent. Support also comes from another recent study of adults who visited a science center in Ontario.33 Three quarters (48/64) of those who had resolved an alcohol problem for 1 year or more did so without treatment, and 57.8% (37/64) resolved through nonabstinence. Second, in the National Survey, two differently worded but similar questions about drinking (i.e., respondents’ mean estimated drinks per day in the past year using a calendar and reported mean drinks per drinking day in the week prior to the interview) captured almost identical drinking patterns for each of the groups of drinkers (see Table 2). Third, the proportions of individuals reporting problems with alcohol to all identified drinkers in both surveys (National Survey, 10.3%; Ontario Survey, 11.5%) were similar to prevalence figures in other major population surveys.20,34,35

Although the results from the present two surveys were strikingly similar, one notable difference (see Table 1) was that the Ontario Survey, in comparison with the National Survey, included more respondents who were younger, were female, had some postsecondary education, had higher incomes, and had white-collar jobs. To investigate whether these differences were related to the affluence of the province of Ontario as compared with other parts of Canada, we examined National Survey data for respondents from Ontario separately. Ontario respondents in the National Survey were found to have characteristics similar to those of respondents in the Ontario Survey. Thus, it appears that national survey respondents differ demographically from those in a particular province, a finding also observed in surveys between states in the United States.36,37 Although demographic differences were observed between the National Survey and the Ontario Survey, the important point is that respondents’ drinking and natural recovery rates were very similar.

Conclusions

Data from the two general population surveys reported in this paper allowed the calculation of prevalence rates of recoveries from alcohol problems with and without treatment. The findings from these two surveys significantly bolster the growing body of studies showing that many individuals with alcohol problems recover on their own. Furthermore, a sizable proportion of individuals reported drinking in a moderate nonproblem manner after resolving their problem. In this regard, and as noted in another study of natural recoveries, it is unclear whether we have identified multiple pathways out of the same kind of alcohol problem or different types of alcohol problems.28 Answers to this question must await future longitudinal research.

From a public health perspective, the study of individuals with alcohol problems who never receive treatment is important because most will never come to the attention of clinical service providers and because the majority of recoveries from alcohol problems occur outside of clinical programs. For these reasons, is important to broaden our perspective on alcohol problems from a clinic phenomenon to a public health problem.

Acknowledgment

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