INDIVIDUALS WITH EXCESSIVE ALCOHOL INTAKE RECRUITED BY
ADVERTISEMENT: DEMOGRAPHIC AND CLINICAL CHARACTERISTICS
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Abstract — Aims: Studies have shown that most individuals with alcohol problems have never received any treatment for their alcoholism. The purpose of the present study was to describe demographic and clinical characteristics in male individuals with excessive alcohol intake who were recruited by advertisements. These characteristics were compared between individuals with or without prior treatment histories. Methods: Subjects (n = 367) responded to the advertisements in a regional daily newspaper and called the investigators. A structured interview was performed and a complete dataset of demographic and clinical information was collected in 342 individuals. Results: Individuals with no prior treatment history (n = 238) were found to be more often cohabitant, employed, and they reported fewer on-going psychiatric symptoms than individuals with treatment histories (n = 104). Conclusion: Since individuals with no prior treatment history seldom experience psychiatric symptoms, they are less likely to seek treatment in the health care system. It is therefore of importance to find ways to reach this ‘hidden’ group early with excessive alcohol consumption. One way to do so might be via alcohol treatment programs at working places since the majority of them are employed.

INTRODUCTION
Studies have shown that most individuals with alcohol problems have never received any treatment (Room, 1989; Sobell et al., 1996). Despite this, research is mostly carried out on alcohol-dependent individuals in different kinds of treatment-settings and, as a consequence, most of the knowledge is obtained from this kind of sources (Walitzer and Connors, 1997). It is therefore of importance that more research focuses on never-treated groups of alcohol-dependent individuals, since they may differ in their clinical characteristics from alcohol-dependent individuals, who have a history of treatment for their alcoholism. There are, however, studies that actually are designed to compare non-treated with treated alcohol-dependent individuals. Thus, Grant (1996) investigated 2910 individuals with alcohol-use disorders and found that those who had an experience of treatment had more severe alcohol-related symptoms, higher alcohol consumption, less education, and was more often unemployed than those without treatment experience. Blomqvist (1999, 2002) confirmed some of these findings and consequently found that individuals in treatment-settings had lower education and were less employed during the program-period. They also had less experience of white-collar job and used drugs more frequently in comparisons with individuals who had no history of treatment. Timko et al. (1995) compared over 3-year follow-up period outcomes for 439 individuals who had drinking problems but had not yet received formal treatment. Those individuals who in this 3-year period entered some kind of treatment had more severe drinking problems, more negative life events and poorer psychosocial functioning. Finney and Moos (1995) found in their investigation regarding why people without prior treatment experience seek treatment, that those people who seek treatment, were more probable to see their drinking problem as severe, had experienced negative consequences as a result of their drinking, had more depressive symptoms, were more self-derogating, and had experienced more life-stressors and negative life events in the past year as compared with individuals who did not enter treatment. Some of these results was confirmed by Kaskutas et al. (1997), who investigated predictors of help-seeking behaviour in a longitudinal study of the general population. In that study, 2234 individuals were interviewed. Predictors seeking help were related to male gender, younger age, hispanic ethnicity, and having experienced social complications related to their drinking. Bucholz et al. (1994) compared alcohol-dependent individuals from three different settings: alcoholics from treatment facilities (n = 236), relatives of alcoholic probands who participated in a study (n = 275) and alcohol-dependent individuals who had never entered treatment (n = 91). One of the major results was that alcohol-dependent individuals, who had a history of treatment, had more severe alcohol-dependence than compared with the other groups. George and Tucker (1996) investigated the social context regarding why alcohol-dependent individuals seek treatment or not. In that study, 15 with no prior treatment experience and 30 with outpatient or self-help-group (Alcoholics Anonymous; AA) experience were interviewed. Individuals with treatment experience had greater alcohol-related psychosocial problems, and more encouragement from their social networks to seek help and were less encouraged by their network to drink alcohol. Raimo et al. (1999) compared alcohol-dependent individuals without prior treatment (n = 1582), with histories of out-patient treatment (n = 399) and in-patient treatment (n = 1591). They found a progression from individuals without prior treatment experience to those in-patient treatment experience of severe life-problems, other drug-problems, psychiatric disorders and alcohol-related adverse events.

We have from 1988 to 1996 performed four studies regarding the effects of various pharmacotherapeutical interventions on alcohol intake in individuals with excessive consumption of alcohol (Balldin et al., 1994, 2003; Eriksson et al.,

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For categorical variables \( \chi^2 \)-test was used and for continuous variables analysis of variance (ANOVA) or the non-parametric test Kruskal–Wallis was used. When the overall \( \chi^2 \)-test was significant, standardized residuals (\( R \)) was used to eventually detect a major contributor to the significant result. If \( R > 1.96 \) there was a major contributor regarding the significant result. Logistic regression was used to determine if some of the characteristics could predict a history of never treatment. The software package used in the statistical analysis was SPSS version 11.5.

RESULTS

Total sample

A total sample of 367 male individuals completed the interview. The mean age (±SD) was 49 ± 8 years. Almost everyone (99.7%) had a permanent residence, 67% of them were cohabitants and 84% were employed. The reported duration of excessive alcohol intake was 9 ± 7 years with a weekly intake during the last year of 677 ± 437 g pure alcohol. A total of 93% of the individuals had never used illicit drugs and 99% not during the last six months. A total of 75% reported that their excessive alcohol consumption was known by their relatives. The majority of the participants (77%) reported no on-going psychiatric symptoms. In those individuals who had psychiatric symptoms (23%), the three most frequently reported symptoms were depressed mood, anxiety, and insomnia, and 55% of this group reported use of pharmacotherapy for such symptoms. The individuals were also interviewed about their physical health status. A total of 63% reported no on-going physical health problems. Of those who had physical health problem (37%), the three most frequent symptoms/disorders were hypertension, asthma, and back-pain. Of them 50% used some somatic medication.

Subgroups

In order to investigate demographic and clinical characteristics in relationship to prior treatment history, 342 individuals out of 367 were included in statistical analyses since they had answered the question whether they have received any treatment for their excessive alcohol consumption (Table 1). The majority (70%; \( n = 238 \)) had never participated in any kind of treatment. The remaining 20% (\( n = 67 \)) reported that they had participated in out-patient and 10% (\( n = 37 \)) in-patient treatment. The out-patient treatment includes either visits to rehabilitation centres, attending AA-meetings or treatment by physicians. Attending AA-meetings is thus categorized as out-patient treatment. This categorization is similar

<table>
<thead>
<tr>
<th>Numbers of subjects</th>
<th>Total</th>
<th>Never-treated</th>
<th>Out-patient</th>
<th>In-patient</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ages (years)</td>
<td>342</td>
<td>238</td>
<td>67</td>
<td>37</td>
<td>NS</td>
</tr>
<tr>
<td>Cohabitant (%)</td>
<td>48 ± 8</td>
<td>48 ± 8</td>
<td>48 ± 8</td>
<td>49 ± 7</td>
<td>NS</td>
</tr>
<tr>
<td>Employment (%)</td>
<td>65</td>
<td>70</td>
<td>55</td>
<td>51</td>
<td>( P &lt; 0.02 )</td>
</tr>
<tr>
<td>Psychiatric symptoms (%)</td>
<td>85</td>
<td>90</td>
<td>83</td>
<td>57</td>
<td>( P &lt; 0.001 )</td>
</tr>
<tr>
<td>Use of medication for psychiatric symptoms (%)</td>
<td>23</td>
<td>18</td>
<td>28</td>
<td>40</td>
<td>( P &lt; 0.01 )</td>
</tr>
<tr>
<td>Somatic symptoms/disorders (%)</td>
<td>11</td>
<td>9</td>
<td>15</td>
<td>13</td>
<td>NS</td>
</tr>
<tr>
<td>Duration of excessive alcohol intake (years)</td>
<td>37</td>
<td>34</td>
<td>45</td>
<td>43</td>
<td>NS</td>
</tr>
<tr>
<td>Use of medication for somatic symptoms/disorders (%)</td>
<td>26</td>
<td>24</td>
<td>22</td>
<td>40</td>
<td>NS</td>
</tr>
<tr>
<td>Weekly alcohol intake (g pure alcohol)</td>
<td>30</td>
<td>30</td>
<td>31</td>
<td>24</td>
<td>NS</td>
</tr>
<tr>
<td>Relatives know about their excessive alcohol intake (%)</td>
<td>9 ± 7</td>
<td>7 ± 6</td>
<td>13 ± 7</td>
<td>14 ± 8</td>
<td>( P &lt; 0.001 )</td>
</tr>
<tr>
<td>No previous use of illicit drugs (%)</td>
<td>665 ± 426</td>
<td>641 ± 408</td>
<td>676 ± 371</td>
<td>799 ± 588</td>
<td>NS</td>
</tr>
</tbody>
</table>
to that used by Raimo et al. (1999). Regarding this categorization it should be noted that similar demographics, alcohol-use patterns, and alcohol problems have been reported in subjects attending AA-meetings only and those receiving formal outpatient treatment (George and Tucker, 1996).

Demographic and clinical characteristics for the three subgroups (i.e. no prior treatment experience, out-patient and in-patient treatment experiences) are presented in Table 1. There was an overall significant difference in being cohabitant among the three groups \( (P < 0.02) \). As seen in Table 1, the majority (slightly above two-thirds) of the individuals who had never been in treatment were cohabitants, compared with somewhat more than half of the individuals in the other two groups. There was also an overall significant difference concerning employment between the three groups \( (P < 0.001) \), and the major contributor \( (R = 4.4) \) relating to the significant result was that individuals in the in-patient group were to a lesser degree employed compared with the other two groups. Regarding reported psychiatric symptoms, an overall significant difference was found \( (P < 0.01) \). The major contributor \( (R = 2.3) \) for this significance was again the results of the in-patient group, who reported more psychiatric symptoms than the other groups. There was also an overall significant difference between the three groups \( (P < 0.001) \) in the duration in years of excessive alcohol consumption, where the in-patient group had the longest duration of years. Finally, there was an overall significant difference between the three groups regarding whether relatives had knowledge about their excessive alcohol consumption \( (P < 0.01) \). The major contributor for this result was that the relatives in the out-patient group had more knowledge about the alcohol consumption than the relatives in the other two groups \( (R = -2.4) \). None of the other demographic and clinical characteristics showed any overall significance among the three groups.

A logistic regression analysis was performed with ‘no earlier treatment history’ as the dependent variable. As independent/predictor variables the following parameters were used: reported psychiatric symptoms, employment, reported somatic symptoms/disorders, on-going treatment for somatic symptoms/disorders, on-going use of medication for somatic and/or psychiatric symptoms/disorders, weekly alcohol consumption during the last year, previous use of illicit drugs, and previous use of illicit drugs within the last 6 months. Two variables, duration of excessive alcohol consumption and the relatives’ knowledge about the excessive consumption were excluded in this analysis, because of too many missing data. A total of 342 cases were analysed and the full model was significantly reliable \( (\chi^2 = 41.06, \ df = 10, \ P < 0.001) \). The model accounted for between 10.6 and 14.6% of the variance. As seen in Table 2, two significant independent/predictor variables were associated with ‘no earlier treatment history’: employment and no reported psychiatric symptoms were predictive of such a history of non-treatment. Furthermore, there was also a tendency for these individuals to more often be cohabitant than the two groups with earlier treatment histories \( (P = 0.056) \).

**DISCUSSION**

In this study we have described the demographic and clinical characteristics in male individuals with excessive alcohol consumption who responded to advertisements in a regional daily newspaper. The advertisements were designed to recruit individuals for investigating the effects of different pharmacotherapeutical interventions in individuals with excessive alcohol consumption (Ballin et al., 1994, 2003; Eriksson et al., 2001a,b). Furthermore, we also compared these individuals’ demographic and clinical characteristics after they were sub-grouped according to their earlier experience of treatment, i.e. no prior treatment history, out-patient and in-patient treatment histories.

Overall, the individuals reported excessive alcohol consumption of quite a long duration (mean ~9 years). Despite this, most of the individuals were cohabitants, employed, reported no on-going psychiatric symptoms, and were physically healthy. Most of them (93%) had never used illicit drugs. About 70% of the individuals had never received any form of treatment for their excessive alcohol consumption, although they thus reported excessive drinking for several years. These results support findings in the studies of Bucholz et al. (1992) and Schuckit et al. (1995) of long delays (~10 years) before seeking treatment. This is of importance since individuals who enter treatment early after acknowledging their drinking problems have better drinking-related outcomes (Timko et al., 1999, 2000). It is therefore most necessary to analyse factors that may delay treatment-seeking behaviour for excessive alcohol consumption. Timko et al. (2000) found in their longitudinal study that individuals with alcohol problems who did not seek treatment were less probable to have legal problems or to be depressed. In our analysis, two predictors were significant for no treatment history: being employed and having no on-going psychiatric symptoms. These individuals also had a tendency to more often be cohabitant. Thus, the results from the present study suggest that being employed and not having any on-going psychiatric symptoms are remarkably enough ‘barriers’ for seeking treatment in spite of excessive alcohol consumption. Other reported barriers for seeking treatment are the stigmata associated with alcohol-dependence (Cunningham et al., 1993; Schober and Annis, 1996; Tucker, 1995), and whether the individuals look upon their alcohol problems as serious (Thom, 1986; Finney and Moos, 1995; Tucker et al., 2004). Moreover, concerns of privacy and practical and economic factors are impediments for participating in treatment (Tucker et al., 2004). It is therefore of importance to find methods to reach this ‘hidden’ group with regular excessive alcohol consumption at an earlier phase of their alcohol-dependence in order to prevent a progression into severe dependence. The findings in the present study may offer some guidance how to reach such individuals. For example, since most of these individuals report no psychiatric

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>Odds ratio</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment</td>
<td>0.92</td>
<td>0.33</td>
<td>7.94</td>
<td>1</td>
<td>2.50</td>
<td>P &lt; 0.01</td>
</tr>
<tr>
<td>No reported on-going psychiatric symptoms</td>
<td>1.32</td>
<td>0.35</td>
<td>14.7</td>
<td>1</td>
<td>3.76</td>
<td>P &lt; 0.001</td>
</tr>
</tbody>
</table>
symptoms, they are less probable to seek treatment in the health care system. However, most of them are employed and it is thus more probable to reach this population via alcohol treatment programs at working places.

Individuals in this study were also compared for demographic and clinical characteristics after being sub-grouped according to their histories of treatment for excessive alcohol consumption. Although our sample was smaller and the variables fewer than in the study of Raimo et al. (1999), the results are broadly in agreement. There was a progression from the in-patient group, out-patient group to the never-treated group concerning the variables being cohabitant and employed and having less on-going psychiatric symptoms. Thus, the never-treated group was socially more stable and reported less psychiatric symptoms than individuals with history of treatment, especially in comparison with the in-patient group. However, it must be taken into account that the never-treated group had significantly less years of excessive alcohol consumption. Whether this may have influence on the treatment-seeking behaviour cannot be elucidated in this study. It should be noted that the clinical characteristics, years of excessive alcohol consumption and having psychiatric symptoms, can influence each other. That is, longer duration of excessive alcohol consumption may be associated with more psychiatric symptoms. In a recent study of ours (Berglund et al., 2005) we have thus found that longer duration of excessive alcohol consumption is associated with higher values of the personality trait harm avoidance (reflecting anxiety proneness) in alcohol-dependent individuals. Vice versa, having more psychiatric symptoms may also lead to more severe and longer duration of alcohol-dependence.

Concerning the use of illicit drugs, there was no difference between the three groups. This finding is in contrast to Raimo et al. (1999) who found that individuals with histories of treatment had more frequent additional drug-dependence diagnoses. This is probably explained by that, in the present study, there were very few individuals who had earlier (7%) or at the time for the interview (1%) used illicit drugs (including cannabis). This is in itself notable since in the study of Raimo et al. (1999), the percentage of individuals with additional drug dependency ranged from 35.7 in the never-treated group to 64.2 in the in-patient group. The reason for the very low percentage of individuals with additional drug dependency in the present study may be the way the subjects were recruited. The individuals were thus recruited by advertisements entitled with the question: ‘Do you drink more alcohol than you actually want to?’. It is therefore possible that individuals with additional drug dependency may have avoided responding to the advertisements. If so, this may have implications for the generalizability of the findings in the present study. Thus, the subjects in the present study may not be representative for individuals with alcohol-use disorders as a whole (see also below). However, the present sample represents a group of individuals having addiction problems restricted only to alcohol.

A major limitation with the present study is the way the individuals were recruited. They were thus reached by advertisements that were designed to recruit individuals for investigating pharmacotherapeutical interventions on alcohol intake in individuals with excessive alcohol consumption. The individuals in the present study were thus by definition treatment-seeking. It is possible that individuals who respond to treatment by advertisements may have a less intense clinical pattern of alcoholism than individuals who seek treatment within the regular social or health care systems. There may therefore be limitations in terms of generalizability to all individuals with alcohol-use disorders. Nevertheless, we do believe, in similarity to Raimo et al. (1999), that this should not affect the ability to compare characteristics across the three groups (never-treated, out-patients, and in-patients) from the same sample. Consequently, the conclusion still remains that among treatment-seeking individuals no previous treatment is associated with being employed and not having psychiatric symptoms.

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