

At-Risk Drinkers in the Household and Short-Term Course of Alcohol Dependence*

DEBORAH HASIN, PH.D., KENNETH M. CARPENTER, PH.D.,[†] AND ANDREA PAYKIN, M.S.[†]

Department of Psychiatry and School of Public Health, Columbia University, New York, & New York State Psychiatric Institute, New York

ABSTRACT. *Objective:* Little is known about the effects of contextual factors on the chronicity of alcohol dependence in the general population. Many adults in the United States live with others in a wide range of relationships. The drinking of household members was investigated as a potential risk factor for persistence of DSM-IV alcohol dependence in a prospective study of household residents. *Method:* At-risk drinking (five or more drinks on at least one occasion) in adult household members living with respondents was assessed at the time of the baseline interview for the index subjects in the study ($N = 128$; 56% men) who lived with other adults and who met DSM-IV criteria for current alcohol

dependence. Index subjects' drinking and demographic variables were also measured at baseline. Approximately 1 year later, follow-up interviews determined the status of alcohol dependence in the 128 subjects. *Results:* Alcohol dependence was significantly more likely to be persistent among subjects with at-risk drinking among household members. *Conclusions:* The presence of other adult heavy drinkers in a household increased the risk of persistence of alcohol dependence in this community sample. Considerably more remains to be learned about the relationship and its treatment implications. (*J. Stud. Alcohol* 60: 769-775, 1999)

CONTEXTUAL FACTORS have become increasingly important in the understanding of various behavioral phenomenon. Such a perspective is consistent with theoretical models that focus on factors external to the individual as causative agents in the initiation and maintenance of behavioral patterns (Estroff, 1994; Hiday, 1995; Skinner, 1953). According to these formulations, the saliency of particular risk factors depends on particular contextual domains such as family and social group; e.g., Parker (1993) has outlined several social and cultural contexts that appear to influence alcohol-related violence.

In alcohol research, the influence of contextual factors has been studied somewhat differently in general population and clinical samples. In nontreated samples, the emphasis has been on the effect of contextual factors on alcohol and drug use, as distinct from the occurrence or remission of alcohol dependence. Contextual factors have been shown to influence drug and alcohol use in adolescents (Chassin et al., 1991; Kandel and Davies, 1992; Needle et al., 1986), and severity of drug use (Newcomb, 1992). The factors studied have included the location of drug or alcohol consumption, such as home, bar or

restaurant (Casswell et al., 1993; Gruenewald et al., 1995; Stockwell et al., 1993), and the interpersonal network (Mertens et al., 1996; Moos et al., 1990). Interpersonal networks have been shown to have a positive association with adolescent alcohol and drug use (Huba and Bentler, 1980; Newcomb, 1995; Newcomb and Bentler, 1986), to influence perceptions of alcohol consumption norms and expected effects among college students (Baer and Carney, 1993; Baer et al., 1991; Orcutt and Briggs, 1975) and to influence levels of alcohol consumption among women (Wilsnack et al., 1984).

In clinical samples, the emphasis has most often been on continuation or cessation of abstinence as a representation of chronicity or remission from alcoholism. Marlatt (1985), for example, showed that approximately 20% of all relapses could be attributable to social influence or pressure, a result that is consistent with experimental studies demonstrating modeling effects on alcohol consumption (Caudill and Marlatt, 1975; Lied and Marlatt, 1979). Other aspects of social networks have been shown to predict treatment compliance and outcome, such as subjectively perceived relapse risk in the home (Moos et al., 1979; Strug and Hyman, 1981; Walton et al., 1995). McCrady et al. (1986) demonstrated improved treatment of alcoholics when spouses who did not abuse alcohol were included in the treatment. Furthermore, treatment matching based on type of social support has demonstrated significant efficacy (Longabaugh et al., 1995).

Identification of important contextual factors among alcohol patients contributes to the understanding of risk factors for remission and relapse; however, the identification of predictors of the course of alcohol dependence in nonclinical samples offers several benefits. One benefit is the increase in knowledge about the natural history of alcohol dependence.

Received: July 22, 1997. Revision: February 19, 1998.

*This work was supported by National Institute on Alcohol Abuse and Alcoholism grants R01AA08159 and K02AA00161, and by the New York State Psychiatric Institute.

[†]Kenneth M. Carpenter is with Columbia University School of Public Health and New York State Psychiatric Institute, New York. Andrea Paykin is with the Department of Biostatistics, School of Public Health, Columbia University, New York.

Correspondence should be addressed to Deborah Hasin, Ph.D., Columbia University/NYS Psychiatric Institute, 1051 Riverside Drive, Box 123, New York, NY 10032.

Another is the possibility of identifying factors that could improve treatment for those who seek help. Social epidemiologic research has indicated that problem and nonproblem drinkers tend to have somewhat different drinking contexts, or environments in which they drink (Martin et al., 1992; Stockwell et al., 1993), and associate with individuals sharing similar drinking norms (Orcutt, 1978). In treatment and general population samples, an alcoholic spouse has been shown to be a poor prognostic sign for female, but not for male, alcoholics (Moos et al., 1990). However, adults in U.S. society share their living space with a wide variety of individuals other than spouses. An important component of the home environment of adults living with other adults is the people with whom they live. The previous focus only on spouses may have limited the investigation of a broader interpersonal contextual factor that could potentially be quite important. The influence of at-risk drinking in all types of adults in the household on the course of clearly diagnosed alcohol dependence has never (to our knowledge) been examined in a community sample.

A number of plausible explanations could be presented about adverse effects of at-risk drinkers in the household on the chronicity of alcohol dependence: peer influence, availability of alcohol in the home, imitation of behavior modeled by others and sabotage of an effort to adopt healthier drinking habits. Moreover, those sharing similar "drinking subcultures" may be less likely to receive pressure to reduce consumption levels or view their alcohol consumption as deviant (Cospers, 1979). However, before more complex theorizing can be pursued, a relationship must be empirically demonstrated. Thus, the present study employed a prospective design to test the hypothesis that other adult at-risk drinkers in one's household would exert an adverse effect on the course of alcohol dependence in a community sample.

Method

Sample

Subjects for this study were household residents of a sociodemographically diverse area near New York City. The methods of the study have been presented in detail elsewhere (Hasin et al., 1996a, in press). In brief, households were designated via random digit dialing. Randomly designated members of each household were screened for eligibility for the study, with oversampling for female participants.

Eligibility (inclusion) criteria included drinking five or more drinks on one occasion at least once in the year prior to screening, being within the ages of 18 and 65, and speaking English well enough to participate in the interview. Screening for eligibility was administered by telephone through a very brief set of questions on general health behaviors such as exercise, smoking, weight and drinking. Eligibility status and screening were conducted on 81% of the designated households. Eligible subjects were asked to participate in a

more extensive in-person interview that provided the baseline diagnostic data for this study. Of those screened and eligible to participate, 969 individuals (92%) participated. Of these, 876 (90%), participated in a second interview approximately a year later (mean time between interviews, 13.6 months) that provided the follow-up diagnostic data. Subjects were not interviewed while intoxicated. They were paid \$25 to participate. Interviews were conducted in privacy, in the subject's home or in another location (e.g., library, workplace) that was mutually agreeable to subjects and interviewers. There were no statistically significant differences between those followed up and those not followed in terms of age, sex, race and average ethanol consumption at baseline.

The drinking element of the screening (5+ drinks on an occasion at least once in the last 12 months) was designed to select household residents whose drinking placed them at higher than average risk for alcohol problems and alcohol use disorders while avoiding the high costs of an unscreened probability sample in which most respondents are uninformative about alcohol use disorders. The drinking eligibility criterion was developed from analyses (Hasin, unpub.) of data from a 1984 U.S. national survey on drinking practices and problems (Hilton, 1987) that was conducted on a sample of 5,221 household residents ages 18 and over. Results of these analyses indicated that 49.9% of male and 23.4% of female subjects above age 18 reported having had this drinking experience at least once in the previous 12 months. Of these, about 19% of the male and 14% of the female participants met criteria for current DSM-III-R alcohol dependence and an additional 9% (male) and 8% (female) met criteria for current DSM-III-R alcohol abuse. Only 1.4% of those who did not drink five or more drinks on an occasion at least once in the previous 12 months met criteria for any current DSM-III-R alcohol use disorder. About 20% of the subjects who reported the five or more drinks experience at least once in the prior 12 months and who did not meet full criteria for a current DSM-III-R alcohol use disorder reported a sub-clinical level of dependence symptoms.

We have more recently conducted additional analyses of the properties of the five or more drinks screener. For this, we used the National Longitudinal Alcohol Epidemiologic Survey data (NLAES; Grant, 1997), a 1992 national survey of 42,862 respondents 18 years old or older residing in the noninstitutionalized population of the contiguous United States. SUDAAN software was used to adjust variance estimation to take into account the complex sample design (Shah et al., 1996). Among NLAES subjects between the ages of 18 to 65, 39.3% of the men and 17.0% of the women had had five or more drinks at least once on a single occasion (weighted percents). Among all subjects who had five or more drinks at least once, 17.2% met full criteria for current DSM-IV alcohol dependence, 11.8% met criteria for DSM-IV alcohol abuse and 24.9% had one or two dependence symptoms. Thus, only 46% of the subjects meeting the five or more drinks screen were entirely free of symptoms of

DSM-IV alcohol use disorders. Among those not having at least one occasion of five or more drinks, 0.4% met full criteria for DSM-IV current alcohol dependence and 0.3% met criteria for current DSM-IV alcohol abuse. These results indicate that the screen greatly improved the efficiency of the entire sample, while missing an extremely small proportion of subjects who might have met criteria for an alcohol use disorder. This screener (five or more drinks on an occasion) has also been used by alcohol epidemiologists for a number of purposes in different regional and national surveys (Caetano and Tam, 1995; Midanik et al., 1996; Room, 1991; Tam et al., 1996).

The 128 subjects included in the analyses below were a subset of the full sample. Inclusion criteria for the present subset were: (1) subjects participated in both a baseline and follow-up interview; (2) subjects met full criteria for DSM-IV alcohol dependence at the time of the baseline interview and (3) subjects lived with other adults in the household. Of these 128 subjects, 56% were men, 24% were married, nearly all (93%) had at least a high school education and 63% were between the ages of 18 and 29 at the time of their baseline interview. The young age and unmarried status of these subjects (as for the larger sample as a whole) was expected, since we oversampled for women with at-risk drinking but not for age, marital status or other demographic characteristics.

Measures

The Alcohol Use Disorders and Associated Disabilities Interview Schedule (AUDADIS; Grant and Hasin, 1992) was used to assess the symptoms and criteria of DSM-IV alcohol dependence. The AUDADIS is a fully structured interview that was designed for administration by lay interviewers in a large National Institute on Alcohol Abuse and Alcoholism-sponsored U.S. national survey (NLAES) in 1992 (Grant et al., 1994). In the AUDADIS, the symptoms and criteria of alcohol use disorders are covered in detail for the prior 12 months. Computer algorithms developed for the AUDADIS operationalize the diagnostic criteria. The reliability of the AUDADIS was tested in a separate study of household residents (Grant et al., 1995). This study indicated excellent test-retest reliability for current and past AUDADIS diagnoses of DSM-IV alcohol dependence (.80 and .82, respectively). To demonstrate reliability in the present sample, we conducted an additional test-retest AUDADIS reliability study with 50 subjects who participated in the main study. These subjects were part of the main sample and consisted of consecutively interviewed subjects at the time we conducted the test-retest study. These subjects received their retest interview about a week after they participated in their baseline interview for the study. In these 50 subjects, reliability for current DSM-IV alcohol dependence (indicated by kappa) was .81. In addition, the validity of the AUDADIS alcohol dependence diagnosis has been studied

and shown to be excellent (Hasin et al., 1997d). For the follow-up interview, the AUDADIS was adapted to retain the full scope of coverage but to focus on the interval between the baseline interview and the follow-up.

Note that DSM-IV alcohol abuse was not a focus of this investigation. Its diagnosis was not included because of conceptual and methodological problems with the abuse diagnoses. These problems include (1) lack of a consistent conceptual basis for the disorder that has resulted in sharp changes in definition between DSM-III-R and DSM-IV (American Psychiatric Association, 1987, 1991, 1993, 1994); (2) lack of cross-system agreement between DSM-III-R, DSM-IV and ICD-10 on case identification of alcohol abuse, in contrast to the high agreement on case identification of alcohol dependence in U.S. and international samples (Hasin et al., 1996a,b, 1997b); (3) low reliability in the present sample (Hasin et al., 1996b, 1997a) and in a large clinical sample using the AUDADIS (Hasin et al., 1997a); (4) published as well as unpublished results from several major methodological studies conducted by other investigators that showed the reliability of the alcohol abuse diagnosis was very low compared to that of dependence when the diagnoses were kept distinct (e.g., Chatterji et al., 1997; Easton et al., 1997) and (5) equivocal or poor validity results for the diagnosis of alcohol abuse in the present study (Hasin et al., 1997c,d).

Other variables used in these analyses came from different sections of the baseline administration of the AUDADIS. Demographic information came from a background section. Heavy drinking was indicated by the frequency of drinking at least five drinks per occasion in the prior year, a question from the alcohol consumption section of the AUDADIS. Information on treatment was obtained in a detailed treatment utilization section.

Information on members of the household who were at-risk drinkers came from the "household composition" section of the AUDADIS, added by D.H. for this study. The household composition section was modeled in part on U.S. Census procedures ("control cards") for collecting demographic information about household members. Thus, in this section, household members were enumerated, along with their age, sex and relationship to the index subject for the study. After this census-style enumeration, a short set of questions was asked about each household member, including a question about whether the household member would have met the screening criterion for inclusion into this study by having five or more drinks on at least one occasion in the previous 12 months. This variable, the same one that was used to screen the sample originally (see above) was the indicator that the household member was an "at-risk" drinker.

Analyses

Bivariate relationships between the main variable of interest and the outcome of alcohol dependence were tested with chi-square tests and *t* tests. We tested the hypothesis of main

interest with logistic regression. In these analyses of subjects with alcohol dependence, the dichotomous outcome variable was the status of DSM-IV alcohol dependence at follow-up, indicated as present (persistent, or unremitted) or absent (remitted). The predictor of interest was a variable representing at-risk drinkers in the household. Due to the skewness of this variable, we created a three-level ordinal variable: no at-risk drinkers in the household, one at-risk drinker in the household, two or more at-risk drinkers in the household. We did not include numerous control variables in the final logistic regression model because (1) they showed no bivariate relationships to outcome in this sample; (2) their inclusion or removal did not affect the magnitude of the parameter estimate for the main variable of interest and hence they did not exert a confounding influence and (3) their inclusion resulted in a poor fit of the data to the model.

Results

Of the 128 subjects who lived with other adults and who met criteria for DSM-IV alcohol dependence at baseline, 31 (24%) experienced a full remission of alcohol dependence at follow-up. The rest continued to meet criteria for DSM-IV alcohol dependence at follow-up.

Subject characteristics by dependence status at follow-up interview are presented in Table 1. As shown in the table, the

TABLE 1. Subject characteristics by alcohol dependence status at follow-up, in percent (*n*)

Variable	Follow-up dependence status		
	Unremitted (<i>n</i> = 97)	Remitted (<i>n</i> = 31)	Total (<i>N</i> = 128)
Sex			
Male	54.6 (53)	58.1 (18)	55.5 (71)
Female	45.4 (44)	41.9 (13)	44.5 (57)
Age			
Below 30	61.9 (60)	64.5 (20)	62.5 (80)
30+	38.1 (37)	35.5 (11)	37.5 (48)
Race			
Nonwhite	15.5 (15)	16.1 (05)	15.6 (20)
White	84.5 (82)	83.9 (26)	84.4 (108)
Education			
High school + < High school	92.8 (90)	93.6 (29)	93.0 (119)
Marital status	7.2 (07)	6.5 (02)	7.0 (09)
Unmarried	76.3 (74)	74.2 (23)	75.8 (97)
Married	23.7 (23)	25.8 (08)	24.2 (31)
Religion			
Affiliated	11.3 (11)	16.1 (05)	12.5 (16)
Unaffiliated	88.7 (86)	83.9 (26)	87.5 (112)
Drug use			
No	60.8 (59)	48.4 (15)	57.8 (74)
Yes	39.1 (38)	51.6 (16)	42.2 (54)
Frequency of heavy (5+) drinking			
≤ 1/month	23.7 (23)	29.0 (09)	25.0 (32)
> 1/month	76.3 (74)	71.0 (22)	75.0 (96)
At-risk drinkers in the household			
None	37.1 (36)	61.3 (19)	43.0 (55)
One	40.2 (39)	32.2 (10)	38.3 (49)
Two or more	22.7 (22)	6.5 (02)	18.8 (24)

two groups of subjects were similar on demographic variables, on frequency of heavy (5+) drinking and on current drug use. The average age at onset of drinking was 16.9 in the group with unremitted dependence, and 16.5 in the group with remitted dependence, not a significant difference. Note that other ways of categorizing some of the variables (for example, religion) also produced similar proportions in the remitted and unremitted groups. None of the differences between the two groups was significant.

The number of other adults in the households at baseline (regardless of their drinking status) ranged from 1 to 7 (mean = 2.16). This did not differ significantly between remitted and unremitted subjects. The percentage of households with at least one of each of the following types of members was: spouse, 24.2%; significant other, 8.6%; parent, 52.3%; child, 11.7% and roommate, 8.6%.

In contrast to the above variables, the remitted and unremitted groups differed in the compositions of the households with respect to at-risk drinkers. The mean number of such drinkers in the household for those who remitted was .48, compared to a mean of .97 for those whose dependence did not remit. As shown in Table 1, the proportions of subjects with none, one or two or more at-risk drinkers in the household differed between the two groups. Due to the skewed nature of the data, the difference between the groups for number of drinkers in the household was tested with the Wilcoxon two-sample test, a nonparametric analogue to a *t* test that is based on rank order. With the continuity correction, the difference between the groups was significant, *p* = .01.

Table 2 shows the results of the logistic regression model that tested the association of the predictor variable, at-risk drinkers in the household, with the outcome, status of DSM-IV alcohol dependence at follow-up. As shown, an increase in the number of at-risk drinkers in the household increased the chances of remaining alcohol dependent at follow-up. The odds ratio for the household at-risk drinker variable was 2.27 (95% confidence interval 1.21-4.26. The value of the -2 log likelihood statistic was 7.37 with a *p* value of .0066, leading to a rejection of the null hypothesis that the values of explanatory variables in the model are zero.

Due to the sample size, the numbers were too small to test whether particular types of household members produced differences in effect; however, we provide descriptive information on the subjects for heuristic purposes. Of those living with spouses (*n* = 31), 60.9% of the spouses were at-risk drinkers among subjects whose alcohol dependence did not

TABLE 2. Logistic regression analysis for DSM-IV alcohol dependence status at follow-up

Variable	Parameter (±SE)	Wald χ^2	<i>p</i> value	Odds ratio	95% CI
Intercept	0.616 ± 0.27	5.133	.024		
At-risk drinkers in household	0.818 ± 0.32	6.465	.011	2.27	1.21-4.26

remit compared to 50.0% of the spouses among subjects whose alcohol dependence remitted. Of those living with siblings ($n = 36$), 71.4% of the siblings were at-risk drinkers among subjects whose alcohol dependence did not remit compared to 62.5% of the siblings among subjects whose alcohol dependence remitted. These are not large differences. Larger differences were found in some other categories. Of those living with parents ($n = 67$), 32.7% of the parents were at-risk drinkers among subjects whose alcohol dependence did not remit compared to 16.7% of the parents among subjects whose alcohol dependence remitted. Of those living with unmarried significant others (only 11 subjects, 8 of whom were men), all of the significant others were at-risk drinkers among subjects whose alcohol dependence did not remit compared to 50% of the significant others among subjects whose alcohol dependence remitted. Of those living with unrelated roommates (only 11 subjects), 81.8% of the roommates were at-risk drinkers among subjects whose alcohol dependence did not remit, compared to none for the subjects whose alcohol dependence remitted.

We did not obtain information about the timing of changes in household composition over the follow-up period, but we did repeat the questions on any at-risk drinkers in the household at follow-up. On an entirely post hoc basis, we provide descriptive information about these changes. Of subjects whose alcohol dependence did not remit, most (80.4%) remained constant in terms of the presence or absence of an at-risk drinker in the household between baseline and follow-up. One subject reported no at-risk drinkers in the household at baseline but such a drinker at follow-up, while 18 reported one or more such drinkers at baseline but not at follow-up. Of subjects whose alcohol dependence remitted, most (74.2%) remained constant in terms of the presence or absence of an at-risk drinker in the household between baseline and follow-up. Four subjects reported no at-risk drinkers in the household at baseline but such a drinker at follow-up, while four reported one or more such drinkers at baseline but not at follow-up.

One often encounters questions about the effects of treatment on results such as those just described. Very few of the subjects (6%) were in treatment or AA during the 12 months prior to their baseline interview. When we included a term in the logistic regression model indicating treatment in the prior 12 months, it did not have a significant effect. We did not pursue this question further because the issue applied to so few of the subjects and because the types of treatment they had varied so considerably.

Discussion

Results of the present study indicated a significant relationship between at-risk household drinkers and diagnostic status at 1-year follow-up. Specifically, a clear-cut adverse effect of at-risk drinkers in the household on the prognosis of alcohol dependence was found. The present results extend

previous research based on patient samples that have demonstrated effects of home setting on the risk of relapse (Walton et al., 1995). Specifically, the present study offers one possible mechanism by which household setting can influence the course of alcohol dependence over time.

Note that despite our concerns with the DSM-IV alcohol abuse diagnosis, our curiosity led us to conduct parallel analyses using DSM-IV alcohol abuse as the condition of interest rather than alcohol dependence (not shown). No significant effects or trends were demonstrated. We do not see this as being especially meaningful, given the problems with the alcohol abuse diagnosis described above.

Possible limitations of the present study include the reliance on self-report of drinking in oneself and in others. However, all subjects had been honest enough about their own drinking and drinking problems in their baseline interviews to meet DSM-IV criteria for alcohol dependence. Therefore, little reason existed to suspect that the subjects systematically minimized or exaggerated the drinking of their household members. One could argue that since adolescents have been shown to project their own drinking levels onto their reports of the drinking of their peers (Kandel, 1974), the same process might have influenced this study of adults. However, we do not think that this was the case. Even if some of this type of distortion occurred at baseline, the distortion would have to be differential by the follow-up status of dependence to bias the results. Since the study was prospective, the follow-up status of the subjects was not known to anyone at the time of the baseline interview when the reports on household composition and drinking were given.

In addition, despite the fact that we have no direct evidence on the accuracy of subjects' reports on household members, we note that informant reports have played a large role in alcohol research for years (e.g., in reports on family history, in research on drinking contexts, etc.). Direct interviews with all household members might be the next step to take in this area of research. However, such an expensive study would not be warranted without preliminary evidence of a relationship between persistence of alcohol dependence and drinking in household members. This study provides such evidence.

For heuristic purposes, we described the frequencies of different types of household members and the proportions of at-risk drinkers among them in the remitted and unremitted subjects. One of these descriptive results suggested that the proportion of at-risk drinker parents among the unremitted cases was about twice as high as among the remitted cases. If replicated under study conditions specifically designed to investigate the phenomenon, this finding could potentially open up many complex issues concerning the nature of parental influence on the course of alcohol dependence. We have previously shown that a positive family history of alcohol dependence was also related to chronicity of alcohol dependence among all subjects who were alcohol dependent at their baseline interview (Hasin et al., in press). This point should be pursued in future research.

The composition of one's household may change over time, and the drinking of one's family members or housemates may also change over time. While we did repeat the household composition questions at the follow-up interview, we did not obtain information on the timing of changes or the reasons that they occurred. Future studies with this or other samples should obtain this type of information. Neither did we obtain information on the timing or reasons for changes in treatment status; however, since such a very small number of the subjects had treatment, this could not have influenced the results.

In future research, more information on the nature of the relationships between the index subject and the other adults in the household might also be helpful. Such information could include degree of closeness of the relationship, time spent together, types of shared activities and attitudes of the index subject towards the drinking of the other adults in the household. Since the present study is the first of its kind and the results are positive, perhaps the findings can be taken as heuristic and will stimulate additional research on this topic.

The identification of particular "at-risk" households in a community sample coupled with a low treatment prevalence suggests that these households are unlikely to be represented in treatment settings and could benefit from various treatment related services. Further research should be directed at the mechanisms involved in the development of such households (i.e., "assortive living"), which may in turn provide avenues for better prevention.

The present results are important given the relative success of spouse and social network involvement in the treatment of alcoholism and smoking (McCrary, 1989; McCrary et al., 1986). Post hoc examination of the data suggested descriptively that at-risk drinking among parents, unmarried significant others and unrelated roommates was found more often in the living situations of those whose alcohol dependence did not remit. Descriptively, this effect appeared to be much stronger than an effect for spouses, but the point remains speculative until it can be empirically investigated further with a larger data set. Thus, while the inclusion of significant others in treatment programs appears beneficial, a broader definition of social context might also have treatment implications. Future research should also address the effects of particular types of relationship bonds (i.e., affective attachments, social, etc.) on the course of alcohol dependence and treatment outcome. Overall, the present results lend further support to treatment perspectives which are inclusive of the alcohol abuser's social network (Gordon and Zrull, 1991), and suggest a number of avenues to examine social contextual influences on the natural history of alcohol dependence.

References

- AMERICAN PSYCHIATRIC ASSOCIATION. *Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R)*, Washington, DC, 1987.
- AMERICAN PSYCHIATRIC ASSOCIATION. *Diagnostic and Statistical Manual of Mental Disorders Options Book*, Washington, DC, 1991.
- AMERICAN PSYCHIATRIC ASSOCIATION. *Task Force on DSM-IV: DSM-IV Draft Criteria*, Washington, DC, 1993.
- AMERICAN PSYCHIATRIC ASSOCIATION. *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)*, Washington, DC, 1994.
- BAER, J.S. AND CARNEY, M.M. Biases in the perceptions of the consequences of alcohol use among college students. *J. Stud. Alcohol* **54**: 54-60, 1993.
- BAER, J.S., STACY, A. AND LARIMER, M. Biases in the perception of drinking norms among college students. *J. Stud. Alcohol* **52**: 580-586, 1991.
- CAETANO, R. AND TAM, T.W. Prevalence and correlates of DSM-IV and ICD-10 alcohol dependence: 1990 U.S. National Alcohol Survey. *Alcohol Alcm* **30**: 177-186, 1995.
- CASSWELL, S., ZHANG, J.F. AND WYLLIE, A. The importance of amount and location of drinking for the experience of alcohol-related problems. *Addiction* **88**: 1527-1534, 1993.
- CAUDILL, B.D. AND MARLATT, G.A. Modeling influences in social drinking: An experimental analogue. *J. Cons. Clin. Psychol.* **43**: 405-415, 1975.
- CHASSIN, L., ROGOSCH, F. AND BARRERA, M. Substance use and symptomatology among adolescent children of alcoholics. *J. Abnorm. Psychol.* **100**: 449-463, 1991.
- CHATTERJI, S., SAUNDERS, J.B., VRASTI, R., GRANT, B.F., HASIN, D. AND MAGER, D. Reliability of the alcohol and drug modules of the Alcohol Use Disorder and Associated Disabilities Interview Schedule-Alcohol/Drug-Revised (AUDADIS-ADR): An international comparison. *Drug Alcohol Depend.* **47**: 171-185, 1997.
- COSPER, R. Drinking as conformity: A critique of sociological literature on occupational differences in drinking. *J. Stud. Alcohol* **40**: 868-891, 1979.
- EASTON, C., MEZA, E., MAGER, D., ULUEG, B., KILIC, C., GOEGUES, A. AND BABOR, T.F. Test-retest reliability of the alcohol and drug use disorder sections of the Schedules for Clinical Assessment in Neuropsychiatry (SCAN). *Drug Alcohol Depend.* **47**: 187-194, 1997.
- ESTROFF, S.E., ZIMMER, C., LACHICOTTE, W.S. AND BENOIT, J. The influence of social networks and social support on violence by persons with serious mental illness. *Hosp. Commun. Psychiat.* **45**: 669-679, 1994.
- GORDON, A.J. AND ZRULL, M. Social networks and recovery: One year after inpatient treatment. *J. Subst. Abuse Treat.* **8**: 143-152, 1991.
- GRANT, B.F. Prevalence and correlates of alcohol use and DSM-IV alcohol dependence in the United States: Results of the National Longitudinal Alcohol Epidemiological Survey. *J. Stud. Alcohol* **58**: 464-473, 1997.
- GRANT, B.F., HARFORD, T.C., DAWSON, D.A., CHOU, P.S. AND PICKERING, R.P. The Alcohol Use Disorder and Associated Disabilities Interview Schedule (AUDADIS): Reliability of alcohol and drug modules in a general population sample. *Drug Alcohol Depend.* **39**: 37-44, 1995.
- GRANT, B.F. AND HASIN, D.S. *The Alcohol Use Disorders and Associated Disabilities Interview Schedule*, Rockville, MD: National Institute on Alcohol Abuse and Alcoholism, 1992.
- GRANT, B.F., PETERSON, A., DAWSON, D.A. AND CHOU, S.P. *Source and Accuracy Statement for the National Longitudinal Alcohol Epidemiologic Survey*, Rockville, MD: National Institute on Alcohol Abuse and Alcoholism, 1994.
- GRUENEWALD, P.J., TRENO, A.J., NEPHEW, T.M. AND PONICKI, W.R. Routine activities and alcohol use: Constraints on outlet utilization. *Alcm Clin. Exp. Res.* **19**: 44-53, 1995.
- HASIN, D. Number of drinks per occasion and alcohol dependence symptoms: Analyses, New York: Columbia University, 1988, unpublished manuscript.
- HASIN, D., CARPENTER, K.M., MCCLOUD, S., SMITH, M. AND GRANT, B.F. The Alcohol Use Disorder and Associated Disabilities Interview Schedule (AUDADIS): Reliability of alcohol and drug modules in a clinical sample. *Drug Alcohol Depend.* **44**: 133-141, 1997a.
- HASIN, D., GRANT, B.F., COTTLER, L., BLAINE, J., TOWLE, L., USTUN, B. AND SARTORIUS, N. Nosological comparisons of alcohol and drug diagnoses: A multisite, multi-instrument international study. *Drug Alcohol Depend.* **47**: 217-226, 1997b.

- HASIN, D., LI, Q., MCCLOUD, S. AND ENDICOTT, J. Agreement between DSM-III, DSM-III-R, DSM-IV and ICD-10 alcohol diagnoses in US community-sample heavy drinkers. *Addiction* **91**: 1517-1527, 1996a.
- HASIN, D., MCCLOUD, S., LI, Q. AND ENDICOTT, J. Cross-system agreement among demographic subgroups: DSM-III, DSM-III-R, DSM-IV and ICD-10 diagnoses of alcohol use disorders. *Drug Alcohol Depend.* **41**: 127-135, 1996b.
- HASIN, D., PAYKIN, A. AND ENDICOTT, J. Course of DSM-IV alcohol dependence in a community sample: Effects of parental history and binge drinking. *Alcsm Clin. Exp. Res.*, in press.
- HASIN, D.S., VAN ROSSEM, R., MCCLOUD, S. AND ENDICOTT, J. Differentiating DSM-IV alcohol dependence and abuse by course: Community heavy drinkers. *J. Subst. Abuse* **9**: 127-135, 1997c.
- HASIN, D., VAN ROSSEM, R., MCCLOUD, S. AND ENDICOTT, J. Alcohol dependence and abuse diagnoses: Validity in community sample heavy drinkers. *Alcsm Clin. Exp. Res.* **21**: 213-219, 1997d.
- HIDAY, V.A. The social context of mental illness and violence. *J. Hlth Social Behav.* **36**: 122-137, 1995.
- HILTON, M.E. Drinking patterns and drinking problems in 1984: Results from a general population survey. *Alcsm Clin. Exp. Res.* **11**: 167-175, 1987.
- HUBA, G.J. AND BENTLER, P.M. The role of peer and adult models for drug taking at different stages in adolescence. *J. Youth and Adolesc.* **9**: 449-465, 1980.
- KANDEL, D. Interpersonal influences on adolescent illegal drug use. In: JOSEPHSON, E. AND CARROLL, E.E. (Eds.) *Drug Use: Epidemiological and Sociological Approaches*, Washington, DC: Hemisphere, 1974, pp. 207-240.
- KANDEL, D.B. AND DAVIES, M. Progression to regular marijuana involvement: Phenomenology and risk factors for near-daily use. In: GLANTZ, M.D. AND PICKENS, R.W. (Eds.) *Vulnerability to Drug Abuse*, Washington, DC: American Psychological Association, 1992, pp. 211-253.
- LIED, E.R. AND MARLATT, G.A. Modeling as a determinant of alcohol consumption: Effect of subject sex and prior drinking history. *Addict. Behav.* **4**: 47-54, 1979.
- LONGBAUGH, R., WIRTZ, P.W., BEATTIE, M.C., NOEL, N. AND STOUT, R. Matching treatment focus to patient social investment and support: 18-month follow-up results. *J. Cons. Clin. Psychol.* **63**: 296-307, 1995.
- MCCRADY, B.S. Extending relapse prevention models to couples. *Addict. Behav.* **14**: 69-74, 1989.
- MCCRADY, B.S., NOEL, N.E., ABRAMS, D.B., STOUT, R.L., NELSON, H.F. AND HAY, W.M. Comparative effectiveness of three types of spouse involvement in outpatient behavioral alcoholism treatment. *J. Stud. Alcohol* **47**: 459-467, 1986.
- MARLATT, G.A. Situational determinants of relapse and skill-training interventions. In: MARLATT, G.A. AND GORDON, J.R. (Eds.) *Relapse Prevention: Maintenance Strategies in the Treatment of Addictive Behaviors*, New York: Guilford Press, 1985, pp. 71-127.
- MARTIN, C., WYLLIE, A. AND CASSWELL, S. Types of New Zealand drinkers and their associated alcohol-related problems. *J. Drug Issues* **22**: 773-796, 1992.
- MERTENS, J.R., MOOS, R.H. AND BRENNAN, P.L. Alcohol consumption, life context, and coping predict mortality among late-middle-aged drinkers and former drinkers. *Alcsm Clin. Exp. Res.* **20**: 313-319, 1996.
- MIDANIK, L.T., TAM, T.W., GREENFIELD, T.K. AND CAETANO, R. Risk functions for alcohol-related problems in a 1988 US national sample. *Addiction* **91**: 1427-1437, 1996.
- MOOS, R.H., BROMET, E., TSU, V. AND MOOS, B. Family characteristics and the outcome of treatment for alcoholism. *J. Stud. Alcohol* **40**: 78-88, 1979.
- MOOS, R.H., FINNEY, J.W. AND CRONKITE, R.C. *Alcoholism Treatment: Context, Process, and Outcome*, New York: Oxford Univ. Press, Inc., 1990.
- NEEDLE, R., MCCUBBIN, H., WILSON, M., REINECK, R., LAZAR, A. AND MEDERER, H. Interpersonal influences in adolescent drug use: The role of older siblings, parents, and peers. *Int. J. Addict.* **21**: 739-766, 1986.
- NEWCOMB, M.D. Understanding the multidimensional nature of drug use and abuse: The role of consumption, risk factors, and protective factors. In: GLANTZ, M.D. AND PICKENS, R.W. (Eds.) *Vulnerability to Drug Abuse*, Washington, DC: American Psychological Association, 1992, pp. 255-297.
- NEWCOMB, M.D. Identifying high-risk youth: Prevalence and patterns of adolescence drug abuse. In: RAHDERT, E. AND CZECHOWICZ, D. (Eds.) *Adolescent Drug Abuse: Clinical Assessment and Therapeutic Interventions*. NIDA Research Monograph No. 156, NIH Publication No. 95-3908, Rockville, MD: Department of Health and Human Services, 1995, pp. 7-38.
- NEWCOMB, M.D. AND BENTLER, P.M. Cocaine use among adolescents: Longitudinal associations with social context, psychopathology, and use of other substances. *Addict. Behav.* **11**: 263-273, 1986.
- ORCUTT, J.D. Normative definitions of intoxicated states: A test of several sociological theories. *Social Probl.* **25**: 385-396, 1978.
- ORCUTT, J.D. AND BRIGGS, D.A. Testing a sociological theory of recreational drug effects. *Sociol. Social Res.* **59**: 136-149, 1975.
- PARKER, R.N. The effects of context on alcohol and violence. *Alcohol Hlth Res. World* **17**: 117-122, 1993.
- ROOM, R. Measuring alcohol consumption in the U.S.: Methods and rationales. In: CLARK, W.B. AND HILTON, M.E. (Eds.) *Alcohol in America: Drinking Practices and Problems*, Albany, NY: State University of New York Press, 1991, pp. 26-50.
- SHAH, B., BARNWELL, B. AND BIELER, G. *Software for the Statistical Analysis of Correlated Data (SUDAAN)*, Release 7.0, Research Triangle Park, NC: Research Triangle Institute, 1996.
- SKINNER, B.F. *Science and Human Behavior*, New York: Macmillan Publishing Co., Inc., 1953.
- STOCKWELL, T., LANG, E. AND RYDON, P. High risk drinking settings: The association of serving and promotional practices with harmful drinking. *Addiction* **88**: 1519-1526, 1993.
- STRUG, D.L. AND HYMAN, M.M. Social networks of alcoholics. *J. Stud. Alcohol* **42**: 855-884, 1981.
- TAM, T.W., MIDANIK, L.T., GREENFIELD, T.K. AND CAETANO, R. Selection bias in national surveys due to screening: Implications from a county general population survey. *Addiction* **91**: 557-564, 1996.
- WALTON, M.A., REISCHL, T.M. AND RAMANATHAN, C.S. Social settings and addiction relapse. *J. Subst. Abuse* **7**: 223-233, 1995.
- WILSNACK, R.W., WILSNACK, S.C. AND KLASSEN, A.D. Women's drinking and drinking problems. Patterns from a 1981 national survey. *Amer. J. Publ. Hlth* **74**: 1231-1238, 1984.