

SENSATION SEEKING AND FAMILIAL ALCOHOLISM: EVIDENCE FOR DEVELOPMENTAL DIFFERENCES IN TWO ALCOHOLIC SUBGROUPS

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ABSTRACT: Sensation seeking is a personality trait which has been found to be stronger among alcoholics than among nonalcoholics and which correlates negatively with age in various populations. The present study compared correlations of age and sensation seeking between a group of alcoholics meeting criteria for familial alcoholism and another group which did not meet these criteria. A total of eight different scores were taken from subjects' scores on the Sensation-Seeking Scale, fifth revision, and while seven of these scores were significantly negatively correlated with age in the nonfamilial sample, only two of these were correlated with age in the familial sample. Since this developmental consistency in the familial group is anomalous and since there are theoretical reasons for believing that sensation seeking is etiologically related to alcohol abuse, this study's findings suggest that stability of sensation seeking over time might be an etiological factor specific to familial alcoholism. The implications of this possibility for research and treatment are discussed.

INTRODUCTION

Zuckerman and his colleagues (e.g., Zuckerman, *et al.*, 1964, 1972, 1980) have defined a personality construct which they refer to as sensation seeking. Sensation seeking is defined as the behavioral expression of the optimum level of arousal construct (Zuckerman, *et al.*, 1964); that is, the extent to which persons engage in different types of behavior in order to maintain a preferred degree of arousal. Age has consistently been found to correlate negatively with sensation in different populations (Zuckerman, 1979).

Numerous studies (Galizio, *et al.*, 1983; Huba, *et al.*, 1981; Kilpatrick, *et al.*, 1982; Schwartz, *et al.*, 1978; Segal, *et al.*, 1980; Zuckerman, *et al.*, 1972) have revealed a relatively higher degree of sensation seeking (that is, the tendency to behave so as to maintain a relatively higher degree of arousal) in alcoholic samples in comparison to nonalcoholic samples. In addition, several of these studies (Gal-

izio, *et al.*, 1983; Huba, *et al.*, 1981; Schwartz, *et al.*, 1978; Segal, *et al.*, 1980; Zuckerman, *et al.*, 1972) have revealed a particularly strong expression of disinhibition, a tendency to maintain arousal through the circumventing of various sources of behavioral control, in alcoholics vis-à-vis nonalcoholics. It has been suggested (Schwartz, *et al.*, 1978) that alcoholics might drink in order to maintain a high level of arousal and that alcohol is effective in this regard because it is disinhibitory, both in terms of depressing cortical centers of control and in terms of cultural norms which permit disinhibited behavior among intoxicated persons.

In each of these studies, alcoholism was treated as a unitary construct. However, alcoholism may not refer to a single diagnostic entity, but instead it can be divided into different subtypes with distinct clinical pictures (Goodwin, 1979). Goodwin (1979) proposed an alcoholic classification, which he designated the familial subtype of the disorder. Familial alcoholism is defined as a type of alcohol abuse in which the patient has a family history of alcoholism, experiences an early onset of the disorder, exhibits relatively severe symptoms, and is free from other severe pathology. Goodwin suggested that familial alcoholism occurs only among males. Given the validity of the alcoholic subtype assumption, it is possible that members of the different subtypes would differ with respect to any number of variables. One possibility is that familial and nonfamilial alcoholics differ in the relationship between age and sensation seeking. The present study examines the relationship between age and sensation seeking in a sample of alcoholics divided into subsamples composed of those meeting Goodwin's (1979) criteria for the familial subtype of alcoholism and of those who do not.

METHODS

Subjects. The subjects in this study were 62 male inpatients from the Alcohol Treatment Program at the Veteran's Administration Medical Center in Brecksville, Ohio. Participation was voluntary. The only incentive offered to prospective participants was the opportunity to receive feedback on their performance on a test battery administered as part of the study. All volunteers were informed of the potential risks and benefits involved in participation. Potential volunteers were excluded only if they exhibited symptoms suggesting that they suffered from organic impairment. Three potential subjects were excluded on this basis.

Based on Goodwin's (1979) definition, subjects were assigned to the familial group, if they met the following operational criteria for the subtype: 1) familial subjects had two or more biological relatives who likely suffered from a drinking problem; 2) they either received treatment for the disorder prior to the age of 30 or else exhibited severe impairment in two or more functional areas (e.g., lost several jobs due to intoxication at work and had a divorce and estrangement from other family directly related to drinking) prior to that age; and 3) they were free from psychotic or major mood symptoms and reported a negative history for such symptoms, treatment with neuroleptics or lithium, etc. Of the 62 subjects studied, age data was recoverable for 57. Thirty-seven were assigned to the familial group, and 20 were assigned to the nonfamilial group.

Materials. The data reported in this study were collected using the Familial-Nonfamilial Drinking Questionnaire (FNF; Shazer, 1988) and the Sensation-Seeking Scale, fifth revision (SSS-V; Zuckerman, *et al.*, 1978). The FNF is a paper and pencil device created especially for use in the present research and was eventually administered in a structured interview format. It gathers family and drinking

TABLE 1. Correlations of age and sensation-seeking variables in familial and non-familial groups.

Sensation-Seeking Variables	Groups		
	Combined (n = 57) r	Nonfamilial (n = 20) r	Familial (n = 37) r
Total	−0.436***	−0.545**	−0.244
Total (Alcohol-Corrected)	−0.446***	−0.558**	−0.262
Total (Disinhibition-Corrected)	−0.417**	−0.486*	−0.290*
Disinhibition	−0.285*	−0.487*	−0.019
Disinhibition (Alcoholic Corrected)	−0.325**	−0.544**	−0.009
Thrill and Adventure Seeking	−0.439***	−0.401*	−0.397**
Experience Seeking	−0.387**	−0.550**	−0.236
Boredom Susceptibility	−0.020	−0.056	−0.100

* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.

history data relevant to the criteria for familial alcoholism. The SSS-V is a factor-analytically derived, 40-item paper and pencil device which yields a total sensation seeking score as well as scores for four subscales. The factors which the subscale scores reflect include disinhibition (Dis), as described above. Another factor is thrill and adventure seeking (TAS), the preference for maintaining arousal through speed and physically dangerous activities. The SSS-V also measures experience seeking (ES), the preference for maintaining arousal through exposure to novel situations and involvement in deviant groups. A final SSS-V scale is boredom susceptibility (BS), the extent to which persons experience diminished interest/arousal following repeated exposure to activities.

Statistical procedure. Pearson product-moment correlations were computed between age and all sensation-seeking variables. Bartlett's Box-F statistics, a test of homogeneity of variance, were also computed for age and sensation-seeking variables. Separate analyses were conducted for the entire sample as well as for the familial and nonfamilial subsamples. In addition to total SSS-V scores and subscale scores, three corrected scores were employed. Both total SSS-V and Dis scores were corrected for the presence of three alcohol related items on the Dis subscale by subtracting the contribution of these items from the original scores. These corrected scores were used to permit examination of correlations of age with total SSS-V and Dis scores that were independent of the effects of possible differential correlations of age with drinking itself that might be present in the different subsamples. In addition, total SSS-V scores were corrected by subtracting the contribution of Dis items from them. This was done to permit the examination of correlations of age with total SSS-V items independent of the effects of possibly differential correlations of age with Dis. Given the strong relationship between Dis and drinking, which has been reported in the literature, such a procedure seemed desirable.

RESULTS

The correlations of age and sensation-seeking variables obtained in the combined sample and in the familial and nonfamilial subsamples are presented in

TABLE 2. Differences in homogeneity of age and sensation-seeking variables between familial and nonfamilial groups.

Variables	Familial (n = 39) s ²	Nonfamilial (n = 23) s ²	Bartlett's F	p
SSS-V				
Total	29.16	30.69	0.208	0.648
Total (Alcohol-Corrected)	26.73	26.63	0.066	0.798
Total (Disinhibition-Corrected)	19.80	17.89	0.030	0.863
Disinhibition	4.20	4.24	0.192	0.661
Disinhibition (Alcohol Corrected)	2.49	2.43	0.209	0.648
Thrill and Adventure Seeking	5.76	8.70	0.184	0.367
Experience Seeking	4.12	2.62	0.798	0.372
Boredom Suseptibility	2.79	1.85	0.925	0.336
Age	73.96 ^a	141.61 ^b	2.677	0.102

^a n = 37.

^b n = 20.

Table 1. All of the sensation-seeking variables were significantly correlated with age in the combined and nonfamilial groups except for boredom susceptibility. It is worth noting that the alcohol-correlated total SSS-V and Dis scores in two of the groups were more strongly correlated with age than were the uncorrected scores. This suggests that the significant correlations obtained in the combined and nonfamilial groups were not merely artifacts of a strong correlation between age and drinking itself. It is also worth noting in Table 1 that in both the combined and the nonfamilial groups the magnitude of the correlation of age with uncorrected total sensation-seeking scores is greater than the correlation of age with Dis-corrected total scores. The size of this difference is greater in the nonfamilial than in the combined group.

In contrast to findings in the combined and nonfamilial groups, age correlated significantly with only two sensation-seeking variables in the familial group. One of these correlations was obtained with Dis-corrected total sensation-seeking scores. Correlations of age with total scores and with alcohol-corrected total scores were not significant in this group. A particularly noteworthy finding was the virtual absence of correlations of age with both Dis and alcohol-corrected Dis scores in the familial group.

Before it is possible to interpret these data as reflecting actual relationships between age and sensation-seeking, it is necessary to determine whether the obtained correlations were statistical artifacts. Specifically, the small correlations observed in the familial group vis-à-vis the nonfamilal group could have been a result of a relatively restricted range of values in the familial group. To determine whether this was the case, Bartlett's Box-F analyses were computed for age and for all scores on the sensation-seeking variables, in order to assess the significance of group differences in homogeneity of variance (Table 2). Visual inspection of the variances obtained reveals very small absolute between-groups differences in the magnitude of variances for all variables except age. The F values obtained were all nonsignificant, and only the value obtained for age approached significance ($p < 0.102$). Thus, it appears that a relatively restricted range of sensation-

seeking scores in the familial group cannot account for the comparatively small correlations obtained within it. While the between-groups difference in variances of subjects' ages was not statistically significant, the absolute value of the age variance in the familial group was rather small compared to that observed in the nonfamilial group and could have been, in part, responsible for the relatively small correlations in the familial group. However, two significant correlations were obtained within the familial group. It appears, therefore, that a relatively restricted range of ages among the familial alcoholics cannot entirely account for the comparatively small correlations obtained with this subsample.

DISCUSSION

The results of this study suggest that, in general, nonfamilial alcoholics' sensation seeking diminishes with age. They are similar to other, nonalcoholic, persons in this respect (Zuckerman, 1979). By contrast, while familial alcoholics' sensation seeking does diminish with age to a limited extent, this effect is not very strong. They are different from other, nonalcoholic, groups in this respect. Furthermore, the relationship between sensation seeking and age is virtually absent with regard to disinhibition, the sensation-seeking variable most strongly related to alcohol abuse (Galizio, *et al.*, 1983; Huba, *et al.*, 1981; Schwarz, *et al.*, 1978; Segal, *et al.*, 1972; Zuckerman, *et al.*, 1972). Thus, it may be that familial alcoholics differ from other alcoholics and from nonalcoholics specifically in terms of their disinhibition remaining stable over time. This possibility seems particularly compelling, since age correlations with total sensation seeking were significant for the Dis-corrected scores in the familial group but not for the scores that were not corrected for Dis. The lack of a relationship between age and sensation seeking in general among familial alcoholics might be a function of the lack of a relationship between disinhibition and age.

These results have obvious implications for research. Since familial and non-familial alcoholics differ in terms of the relationship between age and sensation seeking, research using unselected alcoholic samples in which sensation seeking is under investigation could well be confounded by sample characteristics of age and proportion of familial and nonfamilial subjects. Also, research investigating any variable related to sensation seeking could potentially be similarly confounded. An example of this exists within the data from the present study. If this investigation had examined the relationship between age and sensation seeking in alcoholics generally, the results would have suggested a negative correlation with age for alcoholics as a whole. At least some future research with alcoholics might well benefit from screening subjects for alcoholic subtype.

The results also have clinical implications. Since familial alcoholics apparently remain strong disinhibitors throughout their lives, if sensation seeking generally and disinhibition in particular are in fact etiologically related to alcohol abuse among familial alcoholics, it seems that interventions with familial alcoholics should address the sensation-seeking factor. If, for example, sensation seeking has a biochemical basis, as has been suggested (Zuckerman, *et al.*, 1980), perhaps pharmacologic interventions could be developed to change the biochemical factors involved. It might also be that specific expression of global sensation seeking are amenable to the effects of learning. For example, disinhibitors could possibly be trained to meet their sensation-seeking needs through an alternative modality, such as experience seeking. Because of the stability of sensation seeking

over time among familial alcoholics, any such intervention would have to continue throughout the patient's life or else lead to permanent changes. Such interventions would be specific to familial alcoholics, permitting the development of intervention strategies specific to the needs of nonfamilial alcoholics as well.

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