FEMALE CHILDREN OF ALCOHOLICS: THEIR FUNCTIONING IN EARLY AND MIDDLE CHILDHOOD

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ABSTRACT

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Children of alcoholics (COAs) have been found to be at greater risk for developing alcohol problems, as well as other problems. As alcoholism is clearly a heterogeneous disorder, there have been recent attempts to investigate the potentially differing effects on male COAs as a function of parental alcoholism subtype. No studies of young female COAs have yet examined this issue. This study examined early cognitive and behavioral outcomes in a population-based sample of female COAs, focusing on whether outcomes differed as a function of paternal alcoholism.

Participants were 126 girls (ages 3-11), and their parents, taking part in the Michigan State University - University of Michigan Longitudinal Study. Child outcome measures included the WISC-R, Stanford-Binet, WRAT-R, and Achenbach Child Behavior Checklist (CBCL). Families were divided into Antisocial Alcoholics (AALs), Nonantisocial Alcoholics (NAALs) and Controls based on whether fathers met DSM-IV criteria for Alcohol Abuse/Dependence, and were high vs. low in lifetime antisociality. Three-factor MANOVAS and ANOVAS (Risk Group X Age Cohort X Parent Reporting) were used for the CBCL, while two-factor MANOVAS and ANOVAS (Risk Group X Age Cohort) were used for other data.

Significant main effects for Risk Group were found for girls' IQ, and for

CBCL Total Behavior Problems, Externalizing Problems, and Social Problems. For IQ and the CBCL Social Problem scale, girls in AAL families had lower functioning than girls in Control families, with girls in NAAL families showing similar functioning to Controls. For CBCL Total Problem Behaviors, and the Externalizing scale, girls in AAL and NAAL families had more problems than Controls; there was no difference between girls from the two alcoholic groups.

The study also examined whether a cessation of alcohol problems in the fathers was related to differences in daughters' functioning. Girls in Non-Recovering Alcoholic families had lower IQs, more Total Behavior Problems, more externalizing behavior, and lower scores on the WRAT-R Spelling subtest than girls in Recovering Alcoholic families. Daughters in Recovering Alcoholic homes were functioning at similar levels to girls in Control families.

Results show that even at young ages, girls from alcoholic families have lower levels of functioning than controls, and that there are some different familial and child effects based on the type of paternal alcoholism. Results also suggest that the cessation of parental alcohol problems, and its concomitant change in family environment factors, reduces the likelihood of decreased levels of functioning among the girls raised in these homes.

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Introduction and Literature Review

Although estimates of alcohol use disorders vary as a function of definition, sampling strategies, and assessment techniques (Helzer, 1987), the 1992 National Longitudinal Alcohol Epidemiologic Survey (Grant et al., 1994) estimated that 13.8 million individuals in the United States over age 18 met criteria for a DSM-IV (American Psychiatric Association, 1994) diagnosis of Alcohol Abuse, Alcohol Dependence, or both. As the use of alcohol has the potential to cause problems for the individual drinker, for those persons coming into contact with the individual, and for society in general, it is considered one of the major health problems in the United States today (U.S. Dept. of Health and Human Services, 1993). Thus, there is great interest in studying the etiology of alcoholism, identifying its risk factors and its various manifestations.

Children of alcoholics (COAs) are a frequently used sample in these endeavors as they are considered to be a high-risk population because, in part, alcoholism tends to run in families (Cotton, 1979; Earls, 1987; Sher, 1991). Although the genetic and environmental factors that contribute to risk for alcoholism are not completely understood, progress in this endeavor is taking place (Sher, 1991). However, additional research using developmental system approaches is necessary to better understand the trajectories leading to alcohol problems (Zucker, Fitzgerald, & Moses, 1995). Such approaches have already been valuable for understanding adolescent drug use (e.g. Brook, Whiteman, Gordon, & Cohen, 1986a, 1986b, 1989). Thus, similar kinds of work with young children at risk for alcohol problems is currently in progress (e.g. Zucker, Noll, & Fitzgerald, 1986;

Zucker & Fitzgerald, 1992a).

COAs often show other problems in psychological functioning in addition to their elevated risk for later alcoholism (El-Guebaly & Offord, 1977; Sher, 1991; West & Prinz, 1987). Unfortunately, much of this research is overly simplistic in that it fails to integrate the notion that there are different types of alcoholism (Ellis, 1992). Thus, there is little consideration about whether future risk for alcoholism, or other behavior problems, varies with the alcoholic subtype of the parent(s) (i.e. with some subtypes being at greater risk and others at less elevated risk). Although still an empirical question, it is likely that subtyping COAs, based on the type of alcoholism in their parents, would be more distinguishing than just identifying them as a homogeneous class. Such efforts may also lead to a better understanding of the many contradictory findings that exist in the COA literature to date. This work has begun, with recent investigations showing distinctions between male COAs of different parental alcoholism subtypes (e.g., Ellis, Bingham, Zucker, & Fitzgerald, 1996).

Another gap in the current COA literature is that, as with the adult alcoholic literature, most of the focus is on males rather than females. This has been justified by the observation that alcohol abuse/dependence is three times more common among males than females (Grant et al., 1994). However, the fact that there are almost four million alcoholic women in the United States suggests a problem worthy of investigation. Studies focusing on female COAs are one means of addressing this issue.

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analyze the data for sex differences. Thus, the lack of differences between COAs and controls, observed in some of these studies, may be due to true group differences being masked by gender differences (Pihl, Peterson, & Finn, 1990). That is, males and females may be differentially sensitive to the effects of living with an alcoholic parent(s) (Searles & Windle, 1990). This may be even more true if parental alcoholism subtypes are considered, as the potential different underlying biopsychosocial processes may also differentially affect the offspring as a function of the child's gender.

According to Gomberg & Nirenberg (1993), suggestions that the same theoretical constructs can explain female and male alcoholism are not supported by recent studies. For example, Gomberg and Nirenberg reviewed studies showing that there is a higher comorbidity of other psychological disorders in female alcoholics than male alcoholics. In addition, the authors suggested that the consequences of alcohol-related problems may be more severe for women than men, in terms of the woman's psychological functioning, interpersonal functioning, health-related issues, and social attitudes about her drinking.

Wilsnack and Wilsnack (1993) identified several psychosocial risk factors for problem drinking in women, including depression, sexual dysfunction, a lack of stable social roles, low self-esteem, and a history of childhood sexual abuse. The pathways leading to alcoholism in women more than likely include genetic vulnerabilities as well (Hill, 1993). Hill reviewed the extant literature and derived evidence to support the hypothesis that there are at least two types of alcoholism in women. One of these types results from environmental pressures, growing out of

late-onset heavy drinking (peak ages are 35-49). A second type has an earlier onset (between 18-24) and appears to be more genetically mediated.

Additional discussion regarding possible female subtypes of alcoholism will take place in a later section of this literature review. However, it is clear that alcoholism in women is also heterogeneous, and perhaps derives from developmental pathways that result in at least two types. Thus, there is clearly a need to investigate early development of alcoholism in females. The goal of the present investigation was to complete gaps in the current literature by examining the early origins of problems in young female children of alcoholic fathers, who are further differentiated by comorbid symptomatology. The study characterizes early origins of problems for these female COAs both in terms of potential risk factors for later alcoholism, as well as for other problematic outcomes.

This review, then, turns first to a more thorough discussion of the literature regarding COAs. The emphasis here is on cognitive, behavioral, emotional, and health factors; other factors such as biochemical markers are beyond the major focus of the current work (see Sher, 1991, and Windle & Searles, 1990, for reviews of the biological literature). Knowledge already obtained about female COAs is highlighted. Throughout the review, potential gender differences are also noted.

A brief review of the literature on alcoholic subtypes follows. Finally, possible linkages between the COA and alcohol subtyping literatures are discussed, providing the basis for the current investigation.

Children of Alcoholics

Methodological inadequacies limit the interpretation of many of the findings from COA research, making it difficult to draw firm conclusions about the effects of growing up in an alcoholic environment (Seilhamer & Jacob, 1990; Sher, 1991; West & Prinz, 1987). Some of these shortcomings involve sampling issues, while others are more related to assessment and analysis. Some sampling problems in prior studies include: (a) lack of adequate control groups (e.g. Herjanic, Herjanic, Wetzel, & Tomelleri, 1978; Tarter, Hegedus, Goldstein, Shelly, & Alterman, 1984); (b) wide age ranges in samples of COAs without analyzing possible differences among these various ages (e.g. Ervin, Little, Streissguth, & Beck, 1984; Herjanic et al., 1978); (c) use of clinic samples of alcoholic parents, thus limiting the generalizability of findings (e.g. Moos & Billings, 1982; Murphy, O'Farrell, Floyd, & Connors, 1991); and, as already mentioned above, (d) a lack of information about female COAs.

Other methodological issues include: (a) inconsistent or vague criteria for diagnosing alcoholism in the parents (e.g. Churchill, Broida, & Nicholson, 1990; Marcus, 1986); (b) little attention to drinking-related variables such as duration and severity of parental alcoholism (e.g. Marcus, 1986; Saunders & Schuckit, 1981); (c) failure to examine multiple sources of information (e.g. Aronson & Gilbert, 1963; Saunders & Schuckit, 1981); and (d) failure to address possible confounding variables such as SES, other psychopathology in the parents, and other family variables such as disorganization (e.g. Fine, Yudin, Holmes, & Heinemann, 1976; Prewett, Spence, & Chaknis, 1981). However, perhaps the greatest weakness in the COA literature is the failure to significantly address the heterogeneity involved,

despite all indications that there is more than one type of alcoholism.

Despite these methodological limitations, and the often contradictory findings in previous studies, reviewers of the literature on COAs (El-Guebaly & Offord, 1977; Sher, 1991; West & Prinz, 1987) have concluded that as a whole, there is an association between parental alcoholism and an increased incidence of deficits and behavior problems in children from these families (both when they are children and when they become adults). General conclusions suggest that COAs, in comparison to non-COAS, are more likely to be hyperactive, to engage in antisocial behavior, to have lower academic achievement, to have lower cognitive abilities, to have more negative alcohol consequences, and to have greater expectancies for positive reinforcement from alcohol (Sher, 1991). However, whether these conclusions hold for female COAs, as well as male COAs, is less well understood. Also, many children, in fact a majority of those children from alcoholic homes, do not develop psychological disorders (West & Prinz, 1987). Thus, there is a need to continue studying individual differences in COAs in order to uncover specific factors leading to various outcomes (West & Prinz, 1987).

Cognitive Functioning

Drawing conclusions about the effects of parental alcoholism on children's cognitive functioning is difficult due to the different types of measures used to assess intellectual and academic functioning, the number and nature of comparison groups, control for prenatal exposure to alcohol, and identification of additional stressors that may adversely affect children's development and performance (West & Prinz, 1987). Nevertheless, there appears to be substantial evidence that COAs have cognitive and

academic deficits relative to non-COAs.

General Intellectual Functioning. With regards to IQ, several studies have found significantly lower IQs in COAs as children and as adults (Aronson, Kyllerman, Sabel, Sandin, & Olegard, 1985; Bennett, Wolin, & Reiss, 1988; Drejer, Theilgaard, Teasdale, Schulsinger, & Goodwin, 1985; Ervin et al., 1984; Gabrielli & Mednick, 1983; Steinhausen, Nestler, & Huth, 1982; Streissguth, 1976; Streissguth, Little, Herman, & Woodell, 1979). Other studies do not report lower IQs in COAs (Fitzgerald et al., 1993; Herjanic et al., 1978; Johnson & Rolf, 1988; Tarter et al., 1984), although many of these show a nonsignificant trend in this direction. It should also be pointed out that those studies that showed significant differences often found that the COAs still fell within normal ranges (Sher, 1991). Thus, the IQ differences observed between COAs and non-COAs appear to be relative, rather than actual deficits.

One explanation for the contradictory findings regarding IQ is that most of the differences in these studies appear related to areas of verbal ability and abstracting/conceptual reasoning abilities (Hesselbrock, Bauer, Hesselbrock, & Gillen, 1991). Studies using measures that do not more finely differentiate IQ may be attenuating possible true differences. Another confounding factor in many of these studies (both those with positive and negative findings) is the failure to control for prenatal exposure to alcohol, and thus its potential impact on the COA's current functioning.

Confounding factors are also demonstrated in the results of another study (Noll, Zucker, Fitzgerald, & Curtis, 1992). This research found lower

Developmental Quotients in very young male COAs. However, such differences existed only in the area of personal/social development when other factors such as SES and stimulation of home environment were controlled. These results point to the importance of controlling factors that may contribute to cognitive deficits other than parental alcoholism.

Finally, another study looking at intelligence in COAs (Kern et al., 1981) reported potential gender differences. In this investigation, results showed lower IQs in male children of alcoholics, but not when male and female COAs were combined. The other studies cited above did not analyze possible gender differences when mixed-gender samples were used.

Other research has looked at more specific cognitive-perceptual attributes and neuropsychological functioning. Again, there are conflicting results (see reviews by Pihl et al., 1990; Windle, 1990, for additional details). One noteworthy finding among these studies is evidence that COAs may have decreased planning ability, impulse control, and impaired problem-solving abilities (Tarter, Jacob, & Bremer, 1989; Wilson & Nagoshi, 1988). Such deficits may be important to the findings of increased hyperactivity/attention problems often observed in COAs. In addition, almost all the significant differences between COAs and non-COAs reported in Wilson and Nagoshi's study (1988), were in the form of three-way interactions with gender and age. This again suggests the importance of not assuming similar effects among male and female COAs, but rather investigating potential differences between the sexes.

Academic Functioning. Researchers have looked at academic differences between COAs and non-COAs, again with conflicting results. Studies using standardized measures of academic functioning have generally found that COAs show impaired functioning relative to non-COAs (Bennett et al., 1988; Ervin et al., 1984; Hegedus, Alterman, & Tarter, 1984; Marcus, 1986). However, Johnson and Rolf (1988) reported no reduced academic functioning in COAs using the Wide Range Achievement Test - Revised (WRAT-R; Jastak & Wilkinson, 1984), although maternal ratings of the children from the School Competence score of the Child Behavior Checklist (Achenbach & Edelbrock, 1983) and the Cognitive Competence subscale of the Perceived Competence Scale for Children - Parent Version (Harter, 1982) showed lower cognitive competencies and expectations.

Other aspects of school performance, frequently using school records, were also studied with COAs showing lower grade point averages and more repeating of grades (Schuckit & Chiles, 1978), generally poorer schoolwork (Hughes, 1977), a decreased likelihood to graduate from high school despite no differences in IQ or cognitive skills (Miller & Jang, 1977), and a greater number of repeated grades and referrals to school psychologists (Knop, Teasdale, Schulsinger, & Goodwin, 1985). Nevertheless, there is contradictory evidence as other investigators have not found significant academic deficiencies in COAs (Murphy et al., 1991; Rimmer, 1982). Interestingly, a gender difference was found in one of these studies (Murphy et al., 1991) showing that daughters of alcoholics had more variability in school attendance than did sons of alcoholics.

Behavioral Undercontrol

Behavioral undercontrol is an umbrella term for several constructs such as antisocial behavior, aggression, rebelliousness, impulsivity, inattention, hyperactivity, and delinquency (Windle, 1990). A number of longitudinal studies have shown a relationship between behavioral undercontrol as a child and subsequent adult alcohol abuse (Jones, 1968; Loper, Kammeier, & Hoffman, 1973; McCord & McCord, 1960; Robins, 1986; Vaillant, 1983). This relationship is descriptive of women, as well as men (e.g. Robins, 1986).

Some studies have investigated behavioral undercontrol in COAs through the use of personality scales such as the MacAndrew Alcoholism Scale (MAC; MacAndrew, 1965), a Minnesota Multiphasic Personality Inventory (MMPI) - derived scale that samples undercontrolled traits. Evidence exists that young, nonalcoholic, adult COAs score higher than controls on the MAC (Knowles & Schroeder, 1989; Saunders & Shuckit, 1981). Mann, Chassin, and Sher (1987) reported a similar finding with COAs in a high-school sample using items from the MAC, and items from the California Personality Inventory socialization scale. Sher, Walitzer, Wood, and Brent (1991) also demonstrated differences between college freshmen COAs and non-COAs on similar measures of behavioral undercontrol. In this study, men showed more behavioral undercontrol than women, although no significant Gender X Family History interactions were observed.

Sher (1991) pointed out that many of the statistically significant differences between COAs and non-COAs on these personality measures have rather small effect sizes, and therefore are of questionable clinical significance. Other studies, have

failed to show differences in behavioral undercontrol using similar personality measures with college-aged or older COAs and their peers (Alterman, Bridges & Tarter, 1986; Alterman, Searles, & Hall, 1989; McKenna, & Pickens, 1983).

Although these personality measures show contradictory findings, there is other evidence suggesting that COAs display more behavioral undercontrol than their peers. Using the Child Behavior Checklist (Achenbach & Edelbrock, 1983), a parental rating of children's behavior, studies have shown that male and female COAs tend to score higher on the Externalizing scale (measuring behavioral undercontrol) than non-COAs (Chassin, Rogosch, & Barrera, 1991; Jacob & Leonard, 1986; Rubio-Stipec, Bird, Canino, Bravo, & Alegria, 1991). Other studies have found an association between parental alcoholism and childhood conduct problems (Fine et al., 1976; Merikangas, Weissman, Prusoff, Pauls, & Leckman, 1985; Steinhausen, Gobel, & Nestler, 1984; Steinhausen, Nestler, & Huth, 1982; Stewart, deBlois, & Cummings, 1980; Stewart, deBlois, & Singer, 1979). Studies have also supported an association between parental alcoholism and delinquent and/or truant outcomes for the children in these families (Alterman, Bridges, & Tarter, 1986; Chafetz, Blane, & Hill, 1971; Fine et al, 1976; Hughes, 1977; Miller & Jang, 1977; Offord, Allen & Abrams, 1978: Rimmer, 1982; Robins, West, Ratcliff, & Herjanic, 1978; Schuckit & Chiles, 1978; Werner, 1986). Finally, a relationship exists between parental alcoholism and substance abuse (alcohol or other substances) in adolescents (Chasin et al., 1991; Herjanic, Herjanic, Penick, Tomelleri, & Armbruster, 1977; Lund & Landesman-Dwyer, 1979; Merikangas et al., 1985; Rydelius, 1983; Schuckit & Chiles, 1978).

The linkage between childhood hyperactivity and parental alcoholism is another area that sheds light on the issue of behavioral undercontrol. Early studies found an increased prevalence of alcoholic parents in families of hyperactive children (Cantwell, 1972; Morrison & Stewart, 1971). More recent studies evaluating children of alcoholic parents have also found relationships between parental alcoholism and child hyperactivity (Aronson & Gilbert, 1963; Aronson, Kyllerman, Sabel, Sandin, & Olegard, 1985; Bell & Cohen, 1981; Fine et al., 1976; Knopp et al., 1985; Lund & Lundesman-Dwyer, 1979; Schulsinger, Knop, Goodwin, Teasdale, & Mikkelsen, 1986; Steinhausen et al., 1982). Such a relationship was even reported in very young children with respect to parents' ratings of their child's hyperactivity (Ham, Fitzgerald, & Zucker, 1993), and young children's observed level of impulsiveness (Fitzgerald et al., 1993).

Contradictory evidence is not easily found in this area. One study did report COAs as less impulsive than non-COAs (Tarter, Hegedus, Goldstein, Shelly, & Alterman, 1984). However, all subjects in this study were from a delinquent population; not the most appropriate sample due to high overall levels of impulsive behavior among both groups. This last study, though, points out one problem in the linkage between parental alcoholism and hyperactivity. That is, a controversy exists as to the comorbidity of hyperactivity and conduct disorder (Hinshaw, 1987). Hinshaw suggested that there is overlap between hyperactivity and conduct disorder, although subgroups of children within these domains differ. Over the years, a greater distinction has been made in diagnostic practices between attention/hyperactivity behavior and impulsive/delinquent behavior, with separate

disorders currently identified in DSM-IV (American Psychiatric Association, 1994). However, many of the studies reported above do not clearly delineate these differences. Thus, it remains inconclusive as to whether it is hyperactivity (in an activity sense), attention problems, impulsivity, aggression, or various combinations of these factors which may be the greater differentiating factor between COAs and non-COAs.

In conclusion, although there are currently some contradictory findings making solid conclusions difficult to draw, there is evidence that COAs tend to be characterized by an undercontrolled behavioral style (Sher, 1991; Windle, 1990). Much less clear though is whether this is true for female COAs as well as male COAs. In fact, the entire literature on externalizing behavior among girls in the general population is quite sparse (Lahey & Loeber, 1994). However, Lahey and Loeber suggested that there are key differences among genders, as girls with conduct disorders tend to have later onset and less aggressive behavior than boys with similar problems. This again points to the need to take a more developmental perspective when studying the etiology of behavioral disorders.

Most of the COA studies reviewed above did not analyze potential gender differences when females were included in the samples. The few that did do not currently provide sufficient data to form conclusions. For example, Chafetz et al. (1971) showed no significant differences between genders in terms of externalizing behavior despite some overall differences between COAs and non-COAs. Sher et al. (1991) found greater family alcoholic effects for women, than men, in their study of college-aged COAs, but none specifically related to externalizing behavior. Jacob

and Leonard (1986) found significant differences in problem behavior among boys of alcoholic and boys of depressed parents (versus controls), but similar problem behavior only in girls of the depressed parents (i.e. no differences between girls of alcoholic parents and controls). Thus, this study provides evidence that parental alcohol may not impact girls as much as boys in terms of problem behavior. On the other hand, Chassin et al. (1991) found greater externalizing problems in children of alcoholic parents with no overall gender differences. However, the girls in their sample with an alcoholic mother and nonalcoholic father showed the most externalizing behavior, while boys with two alcoholic parents showed the most externalizing behavior. This study suggests that there are potential gender differences in externalizing behavior based on which, or how many, parents of the child has the alcohol difficulties. Clearly then, additional research with female COAs is needed to understand more fully if behavioral undercontrol issues are a distinguishing factor for them, as they seem to be for their male counterparts.

Other Emotional Functioning

There is considerable comorbidity between alcoholism and more internalized disorders such as depression and anxiety, especially in females (Sher, 1991). Thus, research has looked at the levels of these disorders in COAs with at least some support for increased problems in COAs (Russell, Henderson, & Blume, 1985). However, a review of the literature leads to difficulties in determining which emotional issues or problems account for the observed differences between COAs and non-COAs. For example, West and Prinz (1987) reviewed ten investigations showing a positive association between parental alcoholism and impaired emotional

functioning. However, the dependent variables in the reviewed studies covered various aspects of emotional functioning including depression, anxiety, lowered self-esteem, and perceived lack of control over one's environment. In addition, West and Prinz suggested that this body of research is plagued by methodological problems, similar to those already discussed, such as nonstandardized assessment measures, uncorroborated self-report measures, and designs for which effects cannot be attributed directly to parental alcoholism. Nevertheless, a more extensive review of these findings is necessary since these types of internalizing problems may be most pertinent to studies focusing on female COAs.

Studies have shown increased depression or lowered mood states in COAs (Hughes, 1977; Moos & Billings, 1982; Rolf, Johnson, Israel, Baldwin, & Chandra, 1988; Schuckit & Chiles, 1978), as well as elevations on various rating or personality scales measuring depressive symptoms (Anderson & Quast, 1983; Tarter et al., 1984). Studies using the Achenbach CBCL (measuring other aspects of internalizing behavior in addition to depression) also found COAs generally showing greater problems (Chassin et al., 1991; Jacob & Leonard, 1986; Rubio-Stipec et al., 1991). However, the results of one of these studies found inconsistent reports between the parents and the adolescents in the sample; the parents reported greater problems for COA adolescents, while the COAs did not rate themselves as different than their non-COA peers (Chassin et al., 1991).

Studies looking at a broader definition of emotional problems (psychiatric or emotional distress) have also reported that COAs have more problems than non-COAs (Sher et al., 1991; Steinhausen et al., 1984). Included in these definitions are

anxiety disorders as well as depression.

Besides actual anxiety disorders, some studies have looked at the possibility of heightened arousal, or heightened emotionality, as being a personality trait in COAs. The results of these studies (Finn & Pihl, 1987; Knop et al., 1985; Schuckit, 1982) showed no significant differences between COAs and non-COAs (males were the only subjects in two of the studies and the majority of subjects in the third sample also were male), although one study (Finn & Pihl, 1988), using a sample of males only, found some mixed results. This last study looked at differences among multigenerational (parents and grandparents) COAs and unigenerational (parents only) COAs. Multigenerational COAs, but not unigenerational COAs, were more problematic on a neurotic scale than non-COAs. On the other hand, unigenerational COAs, but not multigenerational COAs, rated themselves as higher on emotionality than non-COAs. Thus, overall, evidence supporting heightened arousal or emotionality in COAs is not very strong (Sher, 1991; Windle, 1990).

A couple of studies explored the impact of parental alcoholism on children's locus of control. These studies (Kern et al., 1981; Prewett et al., 1981) found younger COAs to have a more external locus of control than their non-COA counterparts. However, there is also evidence that such differences diminish with age as adolescent and adult COAs do not show greater external locus of control relative to their same-aged peers (Churchill et al., 1990; Russell et al., 1985).

Finally, there is some evidence that COAs tend to have lower self-esteem than non-COAs (Bennett et al., 1988; Berkowitz & Perkins, 1988; Hughes, 1977; Sher et al., 1991; Roosa, Sandler, Beals, & Short, 1988). However, other studies have not

replicated these findings (Churchill et al., 1990; Herjanic et al., 1977; Herjanic et al., 1978). Again, though, methodological differences among the studies appear to be the major reason for these contradictory findings (e.g. the use of different, and some less rigorous, assessment measures, and the use of quite different samples in these studies). In addition, it is not clear if lowered self-esteem reflects a personality dimension or a response to feelings of depression (Sher, 1991).

In conclusion, there is some evidence that COAs may be at risk for developing a variety of anxiety-depressive symptoms. However, inconsistencies among studies cloud the picture. Although it is not the only improvement that might assist in teasing out the true nature of these type of problems with COAs, studies paying more attention to possible gender differences, as well as to different alcoholic subtypes, could be of great assistance.

Health Problems

Although not as extensively researched, the issue of child physical health problems, other than those created by Fetal Alcohol Syndrome, has also been of interest in studies of COAs. This also is the area where the most gender differences have been reported.

Biek (1981) found that somatic complaints were reported almost twice as often in medical clinic outpatients with a problem-drinking parent as in those without a problem-drinking parent. Of the group reporting a problem-drinking parent, 78% of them were female.

Steinhausen et al. (1982) conducted structured interviews regarding the frequencies of various symptoms in children born to epileptic, alcoholic, or healthy

mothers. Results indicated that children of alcoholic mothers were significantly more impaired than the other two groups in rates of outpatient therapy, eating problems, headaches, and sleeping problems.

Roberts and Brent (1982) found that female members of alcoholic families had higher physician utilization rates and higher numbers of distinct diagnoses than did their matched controls. A similar result was not found for males on these two indices. Unfortunately, both spouses and children of an alcoholic were included in these analyses, making it difficult to conclude whether it was the adult, the COA, or both, who contributed to the observed difference. Nevertheless, this study suggests significant gender differences.

On the other hand, two studies have not found significant differences in physical health problems among COAs (Moos & Billings, 1982; Rimmer, 1982). Rimmer found no differences in the rates of health problems among children of parents hospitalized for alcoholism, depression, or obstetrical-gynecological problems. However, West and Prinz (1987) suggested that one reason for these negative results may have been the more stringent definition of health problems used by Rimmer.

Finally, Moos and Billings (1982) compared the health status of children in families of recovered alcoholics, relapsed alcoholics, and non-alcoholics. When physical problems were considered individually, no differences among the groups were found. However, on a composite measure of physical problems, children of relapsed alcoholics showed a tendency (though not statistically significant) to have more problems than control children.

Concluding Remarks and Future Needs Regarding the COA Literature

As can be seen from the review above, although much data has been gathered about the effects of growing up with parental alcoholism, conclusions are still difficult to draw. As discussed at the outset of this review, methodological limitations of several of the studies are responsible for many of the current problems.

Although not all these issues can be addressed in a single study, there are several areas which investigations have especially ignored that could provide needed information towards better understanding of COAs. First, a greater understanding of the effects of parental alcoholism on female COAs is needed, given that there are indications of different sensitivity to growing up in an alcoholic environment based on one's gender. Second, the majority of the COA literature has focused on older COAs (older children, adolescents, or adults), virtually ignoring potential effects on the development of very young COAs. Yet, a few studies with very young male COAs showed that effects are already distinguishable at these young ages. Similar studies with very young females are thus needed to see if similar results are found.

Third, most of the studies reviewed involved clinical alcoholic families (i.e. those recruited based on the fact that they were involved in some form of treatment). This limits the generalizability of these findings. Studies using community-based samples are needed to corroborate some of the results from these more restricted studies.

Fourth, some results suggest the need to address potential moderating effects when, and if, parental alcohol problems curtail during the child's development. There is evidence that the family functioning in homes of recovered alcoholics

appears more like that of nonalcoholic families, than like current alcoholic families (Moos & Billings, 1982). One would therefore expect that such factors would decrease the risk for the development of problems in the children from these recovered alcoholic homes. However, an important area requiring future investigation is whether there is a certain critical period in the child's development during which the recovery status of the parent moderates future risk.

Finally, although some studies have addressed co-existing factors in addition to parental alcoholism, the issue of the heterogeneity of alcoholism itself (e. g. different subtypes) has been virtually ignored. It is to this issue that I turn next.

Typologies of Alcoholism

Since the late nineteenth century, clinicians and researchers have attempted to identify subtypes of alcoholics (Babor & Lauerman, 1986). Babor and Lauerman noted that these classification schemes were often based upon the alcoholic's drinking pattern, the chronicity of alcoholic symptoms, various etiological theories, and other behavioral and psychophysiological variables. Most past attempts at classification have not gained wide acceptance because they have failed to meet some of the criteria necessary for a useful system such as homogeneity within categories, heterogeneity between categories, stability, comprehensiveness and specificity, multidimensionality, utility, and validity (Babor & Meyer, 1986). However, in recent years, new attempts to develop valid typologies have occurred due to the increased awareness of the heterogeneity of alcoholics, and the need to understand alternate etiological pathways which may lead to more effective prevention and treatment (Zucker, 1994).

Jellinek (1960) classified alcoholics (he did not specify whether he was addressing males, females, or both) into five types based on different progressive stages: alpha, beta, gamma, delta, and epsilon. Jellinek suggested that alpha and beta alcoholics experience psychological dependence, but not loss of control over their drinking. Beta alcoholics differ from alpha ones in that they may exhibit medical problems, although neither are physically dependent on alcohol. Gamma alcoholics do show signs of physical addiction, as well as loss of control over their drinking. Jellinek described gamma alcoholism as the species that produces the most serious kinds of damage to the individual (medically, psychologically, and socially). However, gamma alcoholics are able to abstain from drinking without serious withdrawal symptoms. Delta alcoholics experience withdrawal symptoms when abstaining from drinking, as well as being psychologically and physically dependent on alcohol. They can control the amount of their intake, although some use is needed to reduce the withdrawal symptoms. Finally, Jellinek termed epsilon alcoholics as periodic drinkers. He did not further define, or describe, this type of alcoholism as he believed it was the least known species.

Hesselbrock (1986) pointed out that Jellinek's typological system is similar to that used in DSM-III (American Psychiatric Association, 1980). Alpha and beta alcoholics are similar to DSM-III criteria for alcohol abuse, while gamma and delta alcoholics conform to criteria for alcohol dependence. DSM-III-R (American Psychiatric Association, 1987) and DSM-IV (American Psychiatric Association, 1994) criteria continue to show this distinction between addicted and non-addicted alcoholics. A weakness, though, in Jellinek's classification schema is the fact that it

does not adequately deal with the diversity and multidimensional nature of alcoholism; that is, the individual variability of those alcoholics who do not follow the prescribed sequence of stages (Hesselbrock, 1986).

Classification systems which have received the most attention recently have grown out of etiological theories of alcoholism (Ellis, 1992). Cloninger and his colleagues (Cloninger, Bohman & Sigvardsson, 1981) developed a typology based upon genetic research consisting of two types of alcoholism. Type I, or milieu-limited, alcoholism is characterized by a late adult onset, little criminality, and is associated with loss of control, and guilt over drinking. It may be inherited through both male and female relatives, although it is also seen as more environmentally than genetically mediated. Type II, or male-limited alcoholism, has an earlier onset, is often associated with aggressive, impulsive behavior, and is more heavily genetically rather than environmentally mediated. As implied by the name, it occurs almost exclusively in males. Although Cloninger and his colleagues have found research evidence supporting this classification system, a limitation to their subtypes is a failure to distinguish developmental antecedents, particularly environmental ones, for each type of alcoholism (Zucker, Ellis, & Fitzgerald, 1994a). In addition, a substantial number of alcoholics cannot be equivocally classified as Type I or Type II (Zucker et al., 1994a).

Using cluster analyses of 17 defining characteristics including premorbid risk and vulnerability, severity of dependence and alcohol-related factors, chronicity and negative alcohol-related consequences, and comorbid psychopathology, Babor and his colleagues (Babor et al., 1992) proposed another multidimensional typology. Two

types of alcoholics were identified which are somewhat similar to Cloninger's subtypes. Type A alcoholics were characterized by less premorbid risk and vulnerability, later onset, less severe dependence, fewer alcohol-related problems, a less chronic course with fewer negative consequences of alcohol consumption, and less comorbid psychopathology. Type B alcoholics were characterized as having more premorbid risk and vulnerability, earlier onset, more severe dependence and alcohol-related problems, a more chronic course with more negative consequences of alcohol consumption, and more comorbid psychopathology. Subsequent studies (Brown, Babor, Litt, & Kranzler, 1994; Litt, Babor, Del Boca, Kadden, & Cooney, 1992) have shown this typology to have clinical utility for treatment matching in male alcoholics. However, at present, its validity for female alcoholics remains unclear.

Zucker (1987, 1994) proposed at least four different subtypes of alcoholism, each with its own cause and course. Antisocial Alcoholism is hypothesized to have a genetic diathesis, an early onset of both alcohol-related and antisocial behavior, and a significant background for family history positive for alcoholism. In addition, there is evidence suggesting that high levels of other drug involvement are also found among antisocial alcoholics (Zucker, 1994). The existence of Antisocial Alcoholism has already been identified in several different adult populations (e.g. Babor et al., 1992; Zucker et al., 1994b; Zucker, Ellis, Fitzgerald, Bingham, & Sanford, in press).

Developmentally Limited Alcoholism is characterized by frequent, heavy drinking which peaks during the early 20's, then remits to more social drinking with

the successful assumption of adult career and family roles. What distinguishes this subtype from Antisocial Alcoholism is that it is life-stage specific, and a normative process of adolescence for a large subset of individuals (Zucker, 1994).

Negative Affect Alcoholism is the third proposed alcoholism subtype. This type of alcoholism is more common in women, and often involves the use of alcohol for mood regulation or enhancement of social relationships. Zucker (1994) noted that adult longitudinal data bases generally provide support to a negative affectivity syndrome leading to later problematic alcohol involvement. However, he added that additional longitudinal work with children is necessary to establish a true causative pathway from depression to alcoholism.

Originally, Zucker (1987) suggested Developmentally Cumulative Alcoholism as the fourth subtype. Any genetic diathesis that was posited to exist in this form of alcoholism was hypothesized to be environmentally mediated. Thus, in this subtype, culturally induced drinking processes and/or other environmental factors (e.g. family, work) lead to alcohol use sufficiently cumulative to produce alcohol dependence. More recently, though, Zucker (1994) suggested a need to differentiate this subtype into finer distinctions to further account for different developmental trajectories. Thus, Primary Alcoholism I: Isolated Alcohol Abuse involves a single "incident" of alcoholism often following an event such as marital dissolution. Primary Alcoholism II: Episodic Alcoholism is a midpoint of the risk spectrum which begins to approximate the clinical syndrome. Finally, Primary Alcoholism III: Developmentally Cumulative Alcoholism is the clinical syndrome which is seen as the product of alcohol specific variation and developmental processes.

As can be seen from the brief review above, although much progress has occurred in the past decade regarding alcoholic classification systems, there is still not sufficient agreement regarding the exact subtypes. However, one common thread in most of the typologies reviewed involves the distinction between Antisocial (with its earlier onset and apparent higher genetic basis) and Nonantisocial alcoholics. Recently, it has been proposed that a subset of female alcoholics can similarly be identified based on the levels of antisocial behavior (Zucker & Gomberg, 1993). Zucker and Gomberg argued that although other comorbid diagnoses are more common than Antisocial Personality Disorder in women, there has been a failure to look at the occurrences of these disorders in a relative sense. For example, the authors stated that although phobias show a strong association with alcoholism, their comorbidity with alcoholism among women is not remarkable when compared to the general population of women, or to alcoholic men. On the other hand, Zucker and Gomberg pointed out that the incidence of Antisocial Personality Disorder is quite rare in the general population of women, but relatively quite high in alcoholic women.

While some studies have not found Antisocial Alcoholism in females (e.g., Bohman, Sigvardsson, & Cloninger, 1981), other more recent studies have provided evidence for an antisocial subtype of alcoholism in women (Glenn & Nixon, 1991; Hesselbrock et al, 1984; Lex, Sholar, Bower, & Mendelson, 1991). In addition, Hesselbrock and Hesselbrock (1993) suggested that previous research showing internalizing symptoms as more predictive of future alcohol problems in women may be true when antisocial behavior is less severe in females. However, the authors

suggested that severe Antisocial Personality Disorder in females may more closely resemble the linkage to alcoholism previously reported in only males. Thus, additional research is needed into the relationship between early externalizing behavior in young females and its later relationship with alcoholism.

Alcoholic Subtypes and its Relevance to the COA Literature

Clearly, the current research indicates the need to view alcoholism as a heterogenous disorder. Therefore, distinguishing COAs based on even two subtypes of parental alcoholism (Antisocial versus Nonantisocial) would be useful at this stage of development for understanding alcoholic heterogeneity. As was pointed out earlier, the failure to distinguish different subtypes of alcoholism may be one of the important contributors to the contradictory findings among COA studies. The evidence regarding alcoholic subtypes suggests different developmental trajectories and causative factors (e.g. some subtypes have a greater genetic diathesis than others). Thus, it would therefore seem to follow that COAs should differ in significant ways based on the type of alcoholism their parents experience, due to the different biopsychosocial factors impacting their development as well.

There is currently some evidence regarding the potential usage of alcohol typologies in studies of COAs (Cloninger et al., 1981; Ellis, 1992, Ellis, Bingham, Zucker, & Fitzgerald, 1996; Zucker, Ellis, & Fitzgerald, 1994a). In Cloninger's identification of Type I and Type II alcoholics described previously, efforts were also made to look at the type of alcoholism expressed by the biological parents of their COA sample. The authors reported that Type 2 alcoholism (with its higher genetic component) was associated with both severe alcoholism and criminality in the

biological fathers of these men. On the other hand, Type 1 alcoholism was not. Thus, Antisocial Alcoholics, in particular, may pass the same type of alcoholism onto their male offspring (Ellis, 1992). Whether this might be through genetic or environmental factors, or more likely a combination of the two, remains to be seen.

More recent investigations provide some evidence of the mechanisms by which this risk may be transmitted even in the very early years of a COA's life (Ellis, 1992, Ellis et al., 1996; Zucker et al., 1994a). In these studies, young male children (ages 3-5) of Antisocial Alcoholic (AAL) families experienced higher levels of behavior problems than similar children in Nonantisocial Alcoholic (NAAL) or Control families. Further analyses confirmed that different factors played a role in the development of child externalizing behavior problems among the groups. In AAL families, heritable factors predicted externalizing behavior in the young children though this was not true for the other groups. This was in contrast to the NAAL group in which marital conflict best predicted behavioral difficulties in those children. Finally, only temperamental mismatch between parent and child predicted externalizing behavior problems among children of Control families.

The results of these studies, along with the recent evidence showing the relationship between antisocial behavior and alcoholism in women, suggest that girls may also experience differences based on the type of alcoholism exhibited by their parents. Identifying potential differences based on parental subtype, and the possible environmental and genetic factors that lead to these differences, is important to developing early prevention and treatment strategies, as well to improving the overall understanding of alcoholism in women.

Statement of the Problem

Alcoholism is a heterogeneous, not homogeneous, disorder. One body of evidence for its heterogeneity comes from the extant literature regarding subtypes of alcoholism; the observed differences clearly suggest different developmental pathways and different biopsychosocial processes in their creation. Although there is not clear agreement regarding the final number, or nature, of these subtypes, there is considerable knowledge about two of the more common developmental trajectories that lead to differing alcoholisms (i.e. Antisocial versus Nonantisocial Alcoholism).

One weakness in the existing literature is the heavy focus on male alcoholics; alcoholism in females was essentially ignored. However, there is now interest in understanding alcoholism in women, as well as men. With new knowledge comes the ability to understand whether female and male alcoholics differ from one another, both in terms of clinical manifestations of the disorder(s) and etiology. Thus, some current investigations are examining potential subtypes of alcoholism among women. Antisocial Alcoholism is less common in women, whereas negative affectivity (e.g. depression) is the more central component to female alcoholism. However, Zucker and Gomberg (1993), in reviewing the literature on antisociality in women alcoholics, concluded that there is a subset of female antisocial alcoholics with current symptomatology and developmental trajectories similar to their male counterparts. This points out the need for more thorough and comprehensive investigation into this phenomenon.

In trying to understand the etiologies of various problems, a promising methodological strategy is to study individuals who are at high-risk for the disorder.

There is a great deal of existing research that provides evidence that children of alcoholics (COAs) are a high-risk population. COAs, both males and females, are more likely to become alcoholic than children with nonalcoholic parents, although this risk is higher for male COAs. In addition, male and female COAs have been shown to be at risk for other biological, psychological, and social difficulties. However, many COAs do not develop significant problems either in childhood, or as adults. Thus, there has been an increased emphasis on trying to elucidate factors that increase or decrease risk in COAs. The study of these individual differences in COAs has already provided evidence for early developmental problems that may ultimately prove to be pathways into later alcoholism.

Unfortunately, most of these investigations rely on samples of male COAs. Those studies that include female COAs, are usually analyzed in a way that homogenizes findings among the sexes, not permitting a more thorough understanding of female COAs or of possible gender differences. The current research aimed to focus on young female COAs in order to investigate early developmental patterns that may lead to future problems as these girls mature. Such data are important for understanding the developmental trajectories of potential subtypes of alcoholism among women.

Hypotheses

The current study examined differences in developmental functioning for girls in early and middle childhood who varied in COA status, and in exposure to an alcoholic family environment. Among a sample of young female COAs (divided into Antisocial and Nonantisocial subtypes based on the father's history of antisociality) and a matched control sample of female children of nonalcoholic parents, the following hypotheses were proposed:

1. There would be differences between the girls in the three groups on measures assessing the girls' current behavior, health, IQ, and academic achievement. Girls from Antisocial Alcoholic (AAL) families would show lower levels of functioning than girls from Nonantisocial Alcoholic (NAAL) families. Girls in the Control group would be highest in their level of adaptation.
2. Age is a marker of increased exposure to a damaging environment. On these grounds, older girls in the alcoholic families would function at lower levels than the younger girls.
3. The recovery status of alcohol abuse in the parents would be a significant factor, such that cessation of drinking problems at an early enough age in the young female's development would reduce negative effects relative to girls whose parents continued to have problems with alcohol; that is, girls in Recovering families would look more like the group of Control girls on the outcome measures.

Method

Participants

Participants in the present study were 126 families with daughters ages three through 11. The sample is a subset of families involved in the Michigan State University - University of Michigan Longitudinal Study (Zucker, 1987; Zucker & Fitzgerald, 1992a). This ongoing longitudinal project utilizes a population-based sample of alcoholic men and their families, along with a contrast group of non-substance abusing families drawn from the same neighborhoods where the alcoholic families reside. Seventy eight families were Alcoholic, whereas 48 were Nonalcoholic Controls. All families were Caucasian. The limited ethnic/racial composition was dictated by the fact that census data in the area where data collection took place indicated that other ethnic and racial groups would represent less than 10% of the sample. Given the extensive literature demonstrating a substantial relationship between patterns of alcohol/substance involvement and ethnic/racial status, and the fact that effective analyses for such differences could not be undertaken with the proposed study sample size, it was decided to exclude such variation, rather than have it contribute to error.

Families were invited to participate in a long term study of family health and child development. All families received some payment for participation. Men were recruited via both court contact and community canvass protocols. A network of relationships with all district courts in a four-county area of mid-Michigan provided access to all males convicted of drunk driving in this geographic locale during the project recruitment period. In order to be eligible, men were required to have had a

blood alcohol concentration (BAC) of 0.15% (150mg/100ml) or higher at first arrest,or a BAC of 0.12% if a history of prior alcohol-related arrests existed. At initial recruitment, positive alcoholism diagnosis was first established using items from the Short Michigan Alcohol Screening Test (SMAST; Selzer, Vinokur, & Van Rooijen, 1975) shortly after recruitment; and again later with items from the NIMH Diagnostic Interview Schedule (DIS-Version III; Robins, Helzer, Croughan, & Ratcliffe, 1980). Fathers needed to meet Feighner diagnostic criteria (Feighner et al., 1972) for either probable or definite alcoholism. Thereafter, DSM-IV diagnoses for alcohol dependence or alcohol abuse were verified for each father.

At the time of recruitment, all Alcoholic fathers were required to have sons between the ages of three and six, with whom they were living, and also to be residing with the child's mother. Mothers' drinking status was assessed for Alcoholic families, but the presence of alcoholism in these individuals was neither a requirement or a basis for exclusion into the study.

The second strategy involved recruiting Alcoholic fathers out of the same neighborhoods where the Drunk Driver Alcoholic fathers resided. These families were accessed during neighborhood canvasses for Nonalcoholic (Control) families (see below). Thus, they provided an ecologically comparable subset of high risk families drawn out of the same social stratum as the Drunk Drivers, but where the alcoholism was identified by way of community survey, rather than by way of legal difficulty. These Alcoholic fathers also met Feighner criteria for probable or definite alcoholism, had children and partners who met the same inclusion criteria as the Drunk Driving group, but had no drunk driving or drug involved arrest record

occurring during the lifetime of the three to five year old male target child (MTC).

In addition to Alcoholic families, a group of community Control families was recruited via door-to-door community survey techniques. These families were recruited out of the same neighborhoods as the Alcoholic families, and were homogeneous with them regarding the age of the MTC. An effort was also made to match Control families with Alcoholic families on the basis of family socioeconomic status by recruiting them from the same neighborhood in which the Risk family lived. Canvassers initiated a door-to-door search a block away from the Alcoholic family, staying within the same census tract, and screened for Nonalcoholic families with a male child of appropriate age. However, in some cases, locating a neighborhood Control proved impossible due to high levels of drug and/or alcohol abuse among potential Control families living in these neighborhoods. In such cases, the recruitment moved to an adjacent neighborhood. Occasionally, it was also necessary to go even more broadly afield in order to locate another socio-demographically comparable community in which to continue the search.

Families are assessed at three year intervals so that Wave 1 involves children of ages 3-5, Wave 2 of children ages 6-8, Wave 3 of children ages 9-11, etc. Beginning at the second wave of data collection data for the MTC, data were also collected from a female sibling in families where there was a daughter between the ages of three and 11. When there were multiple female siblings in the family, the female target child (FTC) chosen for inclusion was alternated among families between an older or younger sibling to the MTC. Inclusion criteria for this FTC specified that she be the biological child of both natural parents of the MTC (some

families had experienced divorces and remarriages by the time this second wave of data were collected).

All families were able to continue their participation in the larger study, even if they declined their daughter's participation. However, all families who had eligible FTCs, in fact, agreed to have their female child participate. The data in the present study were from the families with an FTC within the ages of three through eleven. These data were from the FTC's first data collection wave, although they were acquired during various time waves of the MTC's data collection protocol. Thus, the current study involves only cross-sectional, rather than longitudinal data. As was the case when originally recruited into the study, neither parent in Control families met DSM-IV criteria for Alcohol Abuse or Alcohol Dependence.

Procedure

Data were collected by trained project staff who were blind to family alcoholic status. Due to the large amount of data collected from each family, a number of contacts with the family were necessary. This number differed, dependent on the age of the MTC and FTC. The visits involved approximately 9-10 hours of contact time with each parent, and seven hours of contact time with each target child. Contacts included questionnaire sessions, semi-structured interviews, and interactive tasks. Most of the contacts occurred in the families' homes, although one contact occurred on the university campus (for interactional assessments). Special arrangements were made to collect data from families that relocated from the area since the inception of the study. However, an effort was made to minimize any differences between data collection in these families and the families whose data were

collected in the usual manner. The data for the current project only involve those measures needed for testing the study's hypotheses.

Measures

Parent Measures

Background Demographic Information. Information on demographics came from a questionnaire assessing education, occupation, family income, parents' occupation, and marital history. Socioeconomic status (SES) of participants was calculated using the Duncan TSEI2 Socioeconomic Index (Steven & Featherman, 1981), an occupationally-based measure of social prestige. Significant evidence exists in the sociological literature to suggest that occupation, not income or education, is the optimal indicator of SES and that the perceived prestige of an occupation best captures its underlying socioeconomic dimension (Mueller & Parcel, 1981). An average of the two parent's Duncan score was used as the family's SES. Lowest possible Duncan scores were used for families where neither parent was employed.

Parental Alcoholism. As described previously, all parents completed the Short Michigan Alcohol Screening Test (SMAST; Selzer et al., 1975) and the DIS-Version III (Robins, Helzer, Croughan, & Ratcliffe, 1980). The SMAST is a well validated screening inventory used to assess alcohol problems. It consists of 13 items that are answered with either a "Yes" or "No" response.

The DIS-Version III is a structured interview that allows trained lay interviewers to gather extensive information about physical, alcohol-related, and drug-related symptoms, as well as other areas of mental health. This information can

then be used to make diagnoses by way of popularly used nosological systems. Although the entire DIS was administered to each parent, only the information from the alcohol use section was used in this study.

The Drinking and Drug History Questionnaire (Appendix A; Zucker, Fitzgerald, & Noll, 1990) was also administered to the parents. This instrument gathers information from the subject about his/her use of alcohol and other drugs. Only information from the alcohol section was used in the present study. This section focuses on the amount of alcohol usage in the past six months. In the Lifetime Version of this instrument (given the first time the family entered into the study), the questionnaire also inquires about the largest amount of alcohol consumed during a 24-hour period at any point in the participant's life. At later timewaves, the alcohol section assessed use in the last three years, in addition to the last six months. Finally, the instrument asks the participant whether s/he has experienced various problems as a result of alcohol usage, and if so, the frequency of these problems (during one's lifetime for the Lifetime Version, and during the last one year and last three years for other versions).

A diagnosis regarding mother's and father's alcoholism was made by a trained clinician using DSM-IV criteria based on information provided by the parent on the Drinking and Drug History Questionnaire, the SMAST, and the DIS - Version III. Diagnoses were made over the following periods: lifetime, past three years, and the past year. A positive lifetime diagnosis for alcoholism was made if the individual met at least DSM-IV Alcohol Abuse criteria during their children's lives. In the current sample, 85 of the 126 families had a father meeting such criteria. Of these

85 families, seven fathers met alcohol abuse/dependence criteria, but all drinking problems had ceased by the age of 22, as well as before the birth of any child. These seven families fit a Developmentally Limited Alcoholism subtype described by Zucker (1994) and were classified as Control families, rather than Alcoholic families, because of the lack of significant alcohol problems during adulthood. The information regarding diagnoses for the past three years was used in the analyses examining potential differences in Recovering versus Non-Recovering alcoholic families.

Antisocial behavior. The Antisocial Behavior Inventory (ASB; Appendix B; Zucker & Noll, 1980; Ham, Zucker, & Fitzgerald, 1993) was used to assess antisocial behavior in the fathers. This 46-item inventory is a revision of an earlier antisocial behavior inventory used in the Rutgers Community Study (Zucker & Barron, 1973; Zucker & Fillmore, 1968). The revised version contains items that are also salient for adult antisocial activity. Each participant responds to the frequency that he has engaged in various "adventures" during his life (e.g. "lied to a teacher or principal", "taken part in a robbery") using the following scale: (a) "Never" - never done this in his life, (b) "Rarely" - once or twice in his life, (c) "Sometimes" - three to nine times in his life, and (d) "Often" - more than ten times in his life. The lifetime version of this measure then assesses antisocial behavior as a child, and as an adult.

A series of reliability and validity studies (Zucker, Noll, Ham, Fitzgerald, & Sullivan, 1994) with different populations has shown adequate test-retest reliabilities (0.91 over four weeks) and internal consistency (alpha = 0.93). The instrument also

differentiates between individuals with long histories of antisocial behavior (e.g. prisoners) versus individuals with minor offenses versus university students. Finally, the instrument has shown the ability to differentiate alcoholic from nonalcoholic adult males (Fitzgerald, Jones, Maguin, Zucker, & Noll, 1991).

Alcoholic subtype. In order for FTCs to be identified as offspring of Antisocial Alcoholics (AALs) or NonAntisocial Alcoholics (NAALs), fathers were classified as AALs or NAALs. Fathers' scores on the ASB were summed separately for childhood (Items 1-18) and adult domains (Items 19-46). By using this method, a pattern of sustained antisociality, rather than one that is more time-limited, distinguished AALs from NAALs (Zucker, Ellis, & Fitzgerald, 1994b, Zucker, Ellis, Fitzgerald, Bingham, & Sanford, 1996). In order to be qualified as an AAL, the father had to have a score of 10 or higher during both childhood and adulthood. In a previous study (Zucker et al., 1996), this typing strategy has been successful in distinguishing AALs from NAALs regarding age of onset, severity, number, and life course of alcohol problems, measures of social adaptation, amount and severity of other psychopathology, and salience of family history load for alcoholism. Those alcoholic fathers not meeting this cut-off point were classified as NAALs. Fathers not abusing alcohol were considered to be Control subjects regardless of their scores on the ASB.

Child Measures

Female Target Child's Current Behavior. Each parent completed the Achenbach Child Behavior Checklist - Parent Version (CBCL; Achenbach & Edelbrock, 1983). The CBCL is a factor-analytically derived parent report form

used to descriptively classify children for research and clinical purposes. Parents rated their children during the past six months on a number of behavior items using a scale of "0" (Not True), "1" (Somewhat or Sometimes True), and "2" (Very True or Often True). The CBCL yields scores on two Broadband factors reflecting Externalizing and Internalizing behavior. It also provides an overall index of child behavior problems called the Total Behavior Problem score, and a Social Competency score. Finally, various Narrowband factors are also defined (Withdrawn Behavior, Somatic Complaints, Anxious/Depressed, Social Problems, Thought Problems, Delinquent Behavior, and Aggressive Behavior).

The CBCL has been normed and standardized on children aged four to sixteen (Achenbach & Edelbrock, 1983). Achenbach and Edelbrock demonstrated test-retest reliability of item scores on the CBCL ranging from 0.95 at a one-week interval, to 0.84 at a three-month interval. Parent agreement on the item scores was 0.99. Similar reliabilities were established on scale scores and Total Problems with one-week test-retest reliabilities of 0.89. The median parent agreement on scale scores was 0.66. Adequate construct validity was established through correlations between CBCL scores and scores on other measures of child behavior problems. External validity was also demonstrated to be adequate.

In addition to parent ratings, teachers also rated the FTC's current behavior using the Child Behavior Checklist - Teacher Form (TRF; Achenbach & Edelbrock, 1983). This form is similar to the CBCL except that teachers rate the child's behavior only for the previous two months. Some of the items are also changed to reflect behavior about which teachers have more ability to report. Factor analysis of

the TRF yielded Broadband Internalizing and Externalizing factors like those on the CBCL. Narrowband factors were also derived. In the current study, the youngest aged girls (i.e. those not yet attending school) did not have TRFs completed.

Intellectual Functioning. Current general intellectual functioning for FTCs, ages six or older, was measured with the Wechsler Intelligence Test for Children - Revised (WISC-R; Wechsler, 1974). The WISC-R, a commonly used intelligence measure, was developed for use with children ages six through sixteen. It consists of twelve subtests with six of them assessing Verbal skills, and six of them assessing Performance skills. Scaled scores are calculated for each subtest. In addition, a Verbal IQ, a Performance IQ, and a Full Scale IQ score were calculated.

The WISC-R was normed on groups which are representative of the U.S. population of children (Wechsler, 1974). The average internal reliability coefficients across the entire age range for the Verbal, Performance, and Full Scale IQs were 0.94, 0.90, and 0.96, respectively. Reliabilities for individual subtests were also good, with the average coefficients ranging from 0.77 to 0.86 for the Verbal tests, and from 0.70 to 0.85 for Performance tests. Test-retest reliabilities were also obtained with results similar to those obtained for internal consistency. Adequate validity of the instrument has been established through correlations with other individually-administered intelligence tests.

Intellectual functioning in FTCs below the age of six was assessed with the Third Revision (Form L-M) of the Stanford-Binet Intelligence Scale (Stanford-Binet; Terman & Merrill, 1973). The Stanford-Binet, another commonly used measure of intelligence, consists of several subtests designed to measure general mental

adaptability. It is used with children as young as two, as well as with adults. An overall IQ was obtained by calculating the subject's obtained Mental Age and comparing it to his/her Chronological age. In the current study, the IQ calculation was based upon the 1972 norms because they are the latest ones available for this instrument.

Although different IQ measures (Stanford-Binet vs. WISC-R) were administered depending on the age of the FTC, scores from these two measures are generally quite similar, with correlations between Full Scale IQ on the WISC-R and the Stanford-Binet IQ reported to be 0.82 (Sattler, 1982). The only psychometric difference between the two measures is the standard deviations; the WISC-R has a standard deviation of 15 while the Stanford-Binet has one of 16. On these grounds, Stanford-Binet and WISC-R IQs were standardized using each measure's own mean and standard deviations, then pooled and used in the analyses. That is, a z-score was calculated for each girl who had an IQ from the Stanford-Binet by subtracting 100 from her obtained IQ, and then dividing this number by 16 ($z = IQ - 100 / 16$). For each girl with an IQ from the WISC-R, a z-score was calculated by subtracting 100 from her obtained IQ, and then dividing this number by 15 ($z = IQ - 100 / 15$). These calculated z-scores were then used in subsequent analyses.

Academic Achievement. The Wide Range Achievement Test - Revised (WRAT-R; Jastak & Wilkinson, 1984) was used to assess current academic achievement in the FTCs. The WRAT-R was designed to assess a child's skill in basic academic coding tasks. The test consists of three subtests (Reading, Spelling, and Arithmetic) and yields standard scores, percentiles, and grade ratings. It was

standardized on a national sample of 5600 individuals ranging in age from 5 years, 0 months to 74 years. It is a widely used instrument with adequate reliability and validity. In the current study, the WRAT-R was only given to school-aged FTCs (i.e. those six years of age and older) because its usage is inappropriate for younger ages.

Health Problems. The Child Health and Developmental History Questionnaire (Appendix C; Zucker & Fitzgerald, 1992b) was completed by the mother, or primary caregiver, of the FTC. This instrument was created by the MSU-UM Longitudinal Study and is intended for children aged six and older. Thus, again, the youngest FTCs in this study did not have data available for analysis.

Questionnaire items are structured, and as specific as possible, to allow the parent to more reliably answer historical questions. The questionnaire focuses on the following areas: growth and development, child's health, social development, family background information, and school history. In the current study, the following variables were calculated from participant responses: Number of Developmental Services Received (# of "Yes" responses to questions Q1A - Q1E in Section II), Number of Hospitalizations (# of hospitalizations recorded on Q4 in Section IV), Number of Accidents (# of accidents recorded on Q5 in Section IV), Number of Sensory Problems (Total # of "Yes" responses to Q9, Section IV; Q2-Q5, Section VII; Q2-Q5, Section VIII; and Q2, Section IX), Number of Different Medications Taken (# of "Yes" responses to Q3a-Q3l, Section IV, not including Q3i), Elimination Problems ("Yes" responses to Q2 and Q3, Section VI), Height (Q3, Section III), Weight (Q4, Section III), General Sleep Problems (Sum of Items Q2a-Q2n, Section V), and Sleep Apnea Problems (Sum of Items Q2a, Q2c, and Q2j, Section V).

Results

Missing and Problematic Data

On rare occasions during data collection, an instrument, or part of an instrument was coded as "suspect," or problematic, by the administrator. This occurred when testing conditions were so poor that the administrator was concerned the data obtained did not accurately represent the person's functioning, or because the participant was uncooperative even though s/he completed the instrument. In the present study, only two child participants had a portion of their data coded in this manner. The instrument in question in each case was the IQ measure. These two individual's scores were clearly outliers when plotted against other scores on the basis of their status. It was therefore decided that these two pieces of data should be treated as missing data.

For a small number of participants, data were missing on several of the measures, although the same participant family typically was not missing data from more than one instrument. For the intelligence measures (Stanford-Binet and WISC-R), since there were only four percent (five out of 126 participants) with missing data, data estimates were calculated using least squares regression analyses run on available non-missing data. Stepwise entry was used to build the models. Since the purpose of the study was to examine alcohol risk group differences and age differences in the variables being estimated, and since strong evidence already exists that study data vary substantially (Zucker et al., 1996; Bingham et al., 1996), missing data were estimated separately by family Risk Group (AAL, NAAL, Control) and FTC Age Cohort (ages 3-5, ages 6-8, ages 9-11). The predictor

variables used were paternal and maternal IQ scores, paternal and maternal education levels, and Externalizing, Internalizing, and Total Behavior Scores on the Father and Mother CBCL, and the Teacher TRF.

Missing data estimates were also performed for the eight Narrowband factors, two Broadband factors, and Total Behavior Problems of the Mother and Father CBCLs, as again, the amount of data missing was not very great (8.6% of the sample was missing father data only, 1.6% of the sample was missing mother data only, and 6.3% of the sample was missing both parents' data). Analyses similar to the ones described for the IQ measures were run. However, the predictor variables in these analyses were FTC WRAT-R Arithmetic, Spelling, and Reading scores, scores from Total Behavior Problems, the two Broadband, and eight Narrowband scales of the Teacher TRF, and scores from Total Behavior Problems, and the two Broadband and eight Narrowband scales of the non-missing parent CBCL. For Mother data, no regression equations with the current predictors could be identified on the Anxious/Depressed, Social Problems, Attention Problems, and Aggressive Behavior scales for Control participants only. For Father data, no regression equations could be identified for Control participants on the Aggressive Behavior scale; for NAALs on the Somatic Complaints, Attention Problems, Internalizing, and Total Behavior Problems scales; and for AALs on the Thought Problem and Delinquent Behavior scales. For these data, the mean of each scale for the respective Risk Group and Age Cohort was used as the missing data point.

Due to the large amount of missing data on the WRAT-R, the Teacher TRF, and the Child Health and Developmental History Questionnaire, estimates were not

performed for these measures. Data were missing here because these instruments were not part of the protocol for the youngest girls (ages 3-5) since their ages were inappropriate for the instruments. All analyses involving these measures are only performed on families with girls assessed between the ages of six and eleven.

Following data estimation, the estimated variables were compared to the original variables to ensure that no bias had occurred as a result of estimation procedures. To test this possibility, a stacked two-group design using LISREL 8.1 (Joreskog & Sorbom, 1993) was used to compare the mean and covariance structures of the estimated and original variables (Bingham & Crockett, in press) with all parameter estimates invariant. IQ, and each parent's rating of Total Behavior Problems on the CBCL, were done in one comparison (Goodness of Fit Index = 0.99 [$\underline{X}^2$ (6) = 2.31, $\underline{p}$ = 0.89]). Each parent's ratings on the two Broadband factors of the CBCL were done on another comparison (GFI = 0.99 [$\underline{X}^2$ (10) = 5.22, $\underline{p}$ = 0.88]). Finally, a third comparison was done using the eight Narrowband scales of each parent's CBCL rating (GFI = 1.00 [$\underline{X}^2$ (136) = 28.21, $\underline{p}$ = 1.00). The high GFI indices on all three comparisons provided evidence of extremely good fit. They indicate that the central tendency, dispersion of the estimated variables, and the patterns of covariation among the variables were not altered significantly by the data estimation procedure.

Demographic Variables

Table 1 presents the number of AAL, NAAL, and Control families across the three Age Cohorts in this study. As can be seen in the table, the figures indicate that group membership percentages of participant families were approximately equal

Table 1. Number of Families with Girls in AAL, NAAL, and Control Groups Across Ages 3-11 (N=126)

	RISK GROUP			AGE COHORT TOTALS
AGE COHORT	AALs	NAALs	Controls	
Ages 3-5	13 (23%)	25 (44%)	19 (33%)	57
Ages 6-8	8 (20%)	16 (40%)	16 (40%)	40
Ages 9-11	6 (21%)	10 (34%)	13 (45%)	29
RISK GROUP TOTALS	27	51	48	

Note. Percentages in the table are the percentage of Risk Group families for that FTC age period (i.e. individual cell n / Age Cohort n)

across Age Cohorts. Thus, potential interactions between group membership and age cohort that might be relevant to substantive hypotheses (i.e. that differences between Risk Groups on variables was due to an overweighing of families of a Risk Group in certain Age Cohorts), can be ruled out as potential confounds.

To control for Type I error, MANOVAs were conducted within each of the major domains of study investigation. A Wilks multivariate analysis of variance (MANOVA) for Risk Group differences was conducted on the following demographic variables: FTC age, maternal age, paternal age, maternal years of education, paternal years of education, annual family income, and family SES. Demographic information on the sample is presented in Table 2. The MANOVA showed significant Risk Group effects upon demographic variables [F (14, 234) = 3.19, $p < .01$]. Univariate analyses of variance (ANOVAs) showed significant group differences for Maternal Education, Paternal Education, Family Income, and Family SES (see Table 2).

Post-hoc comparisons using the Student-Newman-Keuls Test (SNK) with alpha level set at 0.05 were used to identify which of the three groups differed (see Table 2). Mothers in AAL families had significantly less education than did mothers in Control families, while fathers in AAL families had less education than fathers in both NAAL and Control families. The annual family income in AAL families was lower than the income in either NAAL or Control families, and the income in NAAL families was significantly lower than the income in Control families. Finally, SES was significantly lower in AAL families than in Control families.

Table 2. Demographic Characteristics of AAL, NAAL, and Control Families with Female Children

	RISK GROUP			
	AALs (n=27)	NAALs (n=51)	Controls (n=48)	
VARIABLE	Mean (SD)	Mean (SD)	Mean (SD)	Univariate F
	[Multivariate F (14,234) = 3.19, p < .01]			
FTC Age	6.78 (2.37)	6.43 (2.72)	7.12 (2.30)	0.95
Maternal Age	33.85 (3.77)	34.89 (4.21)	34.97 (4.56)	0.69
Paternal Age	37.67 (6.18)	36.17 (5.27)	36.29 (4.72)	0.79
Maternal Education (in years)	12.70 (1.68)	13.86 (2.06)	13.75 (2.26)	3.07*a
Paternal Education (in years)	12.48 (1.65)	13.90 (2.24)	14.73 (2.26)	9.58**ab
Annual Family Income	30.98 (19.27)	43.87 (20.99)	52.76 (22.68)	9.06**abc
Family SES	296.31 (114.01)	359.16 (153.89)	396.90 (149.74)	4.18*a

Note. Annual Family Income is represented in thousand dollar units

* p < .05 ** p < .01 [df = (2,123) for all Univariate Tests]
[a] AALs < Controls [b] NAALs < Controls [c] AALs < NAALs

Child Outcome Variables

Intellectual Functioning

Table 3 shows means and standard deviations for FTC IQ scores. A 3 (Risk Group) X 3 (Age Cohort) ANOVA revealed a significant main effect for Risk Group [F (2,117) = 4.49, $p < .05$]. Neither a significant Age Cohort effect, or a significant interaction, were found. Post-hoc comparisons using the SNK showed that girls in AAL families had significantly lower IQs than did girls in Control families.

Academic Achievement

Table 4 shows means and standard deviations for WRAT-R standard scores. A 3 (Risk Group) X 2 (Age Cohort) MANOVA revealed a significant main effect for Age Cohort [F (3,60) = 3.25, $p < .05$]. Although the means for Risk Group were in the predicted direction, these differences were not statistically significant. There was also no significant interaction observed.

Univariate ANOVAs for the Age Cohort factor showed significant group differences on the Reading and Spelling subtests, but not the Arithmetic subtest of the WRAT-R. For Reading and Spelling, older girls scored significantly higher than younger girls (see Table 4).

Child Behavior Problems

Table 5 displays results from analyses on CBCL Total Behavior Problems and the two Broadband factors, while Table 6 shows results from CBCL Narrowband factors. For CBCL Total Behavior Problems, a 3 (Risk Group) X 3 (Age Cohort) X 2 (Parent Reporting) ANOVA was performed, while separate 3 (Risk Group) X 3

Table 3. Z-Scores for Intellectual Performance of Girls in AAL, NAAL, and Control Families Across Ages 3-11

	RISK GROUP			AGE COHORT TOTALS
	AALs (n=27)	NAALs (n=51)	Controls (n=48)	
AGE COHORT	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Ages 3-5 (n=57)	0.25 (1.19)	0.49 (0.84)	0.94 (0.78)	0.59 (0.93)
Ages 6-8 (n=40)	0.19 (0.91)	0.42 (0.98)	0.66 (0.65)	0.47 (0.57)
Ages 9-11 (n=29)	-0.01 (0.66)	0.89 (0.87)	0.79 (0.85)	0.66 (0.87)
RISK GROUP Totals	0.17 (0.98)	0.55 (0.89)	0.80 (0.75)	

Univariate ANOVA

F(2,117) for Risk Group = 4.49*[a]

F(2,117) for Age Cohort = 0.30

F(4,117) for Risk Group X Age Cohort = 0.58

Note. To allow pooling of Stanford-Binet (ages 3-5) and WISC-R (ages 6-11) IQs, these data were converted to z-scores (See text in Method section)

* $p < .05$ [a] AALs < Controls

Table 4. Achievement Test (WRAT-R Standard Scores) Results of Girls in AAL, NAAL, and Control Families Across Ages 6-11

		RISK GROUP						AGE COHORT TOTALS		
		AALs (n=14)		NAALs (n=26)		Controls (n=29)				
VARIABLE	AGE COHORT	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)	n
Reading	6-8	91.25	(15.29)	93.37	(15.12)	98.81	(12.37)	95.12	(14.09)	40
	9-11	104.00	(6.99)	106.40	(16.66)	105.17	(11.72)	105.36	(12.58)	28
RISK GROUP Totals		96.71	(13.69)	98.38	(16.70)	101.54	(12.30)			
Spelling	6-8	87.63	(17.74)	91.88	(13.79)	100.63	(14.50)	94.53	(15.44)	40
	9-11	101.67	(8.82)	102.30	(12.81)	104.08	(15.04)	102.97	(15.44)	29
RISK GROUP Totals		93.64	(15.85)	95.88	(14.14)	102.17	(14.58)			
Arithmetic	6-8	90.75	(10.40)	94.94	(14.47)	98.13	(14.76)	95.38	(13.83)	40
	9-11	89.17	(18.72)	102.70	(20.76)	106.38	(16.98)	101.55	(19.21)	29
RISK GROUP Totals		90.07	(13.92)	97.92	(17.20)	101.83	(16.06)			

Multivariate F (6,120) for Risk Group = 1.90
Multivariate F (3,60) for Age Cohort = 3.25*
Multivariate F (6,120) for Risk Group X Age Cohort = 0.98

Univariate F Tests (For Age Cohort Only)

Reading	Spelling	Arithmetic
F(1,62) = 9.19**	F (1,62) = 6.07*	F (1,62) = 1.24

Note. One 9-11 year old Control FTC was missing data on the Reading Subtest

* $p < .05$ ** $p < .01$

(Age Cohort) X 2 (Parent Reporting) MANOVAS were performed for the two CBCL Broadband factors and the eight Narrowband factors. None of the analyses showed main effects or interactions with the Parent Reporting factor, thus the means and standard deviations reported in Tables 5 and 6 are aggregated across both parents.

As can be seen in Table 5, the ANOVA for CBCL Total Behavior Problems revealed a significant main effect for Risk Group [F (2,234) = 4.20, $p < .05$]. No other main effect or interactions were significant. Post-hoc analysis using the SNK showed that AALs and NAALs had significantly greater Total Behavior Problems than Controls. NAALs and AALs did not differ.

The MANOVA on CBCL Broadband factors showed significant main effects for Risk Group and Age Cohort (see Table 5). Univariate Fs showed that these effects were only significant for Externalizing Behavior Problems [Risk Group F (2,234) = 4.85, $p < .05$; Age Cohort F (2,234) = 4.32, $p < .05$) and not for Internalizing problems. Post-hoc analyses using the SNK showed that AAL and NAAL girls had more Externalizing Behavior Problems than Controls. Again, NAALs and AALs did not significantly differ. Post-hoc tests also revealed that girls in the younger two groups (ages 3-5 and 6-8) had more Externalizing problems than the older girls (ages 9-11).

Significant main effects for Risk Group and Age Cohort were also found on the MANOVA for CBCL Narrowband factors (see Table 6). Univariate Fs for the Risk Group effect showed a significant difference for the Somatic Complaints [F (2,234) = 3.07, $p < .05$] and the Social Problems scale [F (2,234) = 4.10, $p < .05$]. However, post-hoc analyses revealed no significant differences between any

Table 5. Parents' Ratings of Their Daughters' Behavior Using CBCL Total Behavior Problems and Broadband Factors in AAL, NAAL, and Control Families Across Ages 3-11 (T-Scores)

		RISK GROUP			AGE COHORT TOTALS	
VARIABLE	AGE COHORT	AALs (n=27) Mean (SD)	NAALs (n=51) Mean (SD)	Controls (n=48) Mean (SD)	Mean (SD)	n
Total Beh. Problems	3-5	52.19 (6.60)	49.86 (6.94)	48.45 (7.07)	49.92 (6.99)	57
	6-8	50.81 (5.95)	52.16 (8.21)	46.31(10.25)	49.55 (9.34)	40
	9-11	49.58 (8.54)	47.35 (6.75)	46.88 (8.71)	47.60 (7.98)	29
Risk Group Totals		51.20 (6.84)	50.09 (7.74)	47.31 (8.64)		
Externalizing Behavior	3-5	53.92 (6.72)	51.02 (7.50)	51.03 (7.23)	51.68 (7.28)	57
	6-8	52.88 (6.78)	55.09 (8.21)	48.00 (9.01)	51.81 (8.80)	40
	9-11	49.58 (7.38)	48.85 (5.84)	46.88 (9.22)	48.12 (7.78)	29
Risk Group Totals		52.65 (6.97)	51.87 (7.74)	48.90 (8.55)		
Internalizing Behavior	3-5	49.65 (6.88)	47.50 (6.81)	46.42 (7.83)	47.63 (7.22)	57
	6-8	48.50 (5.55)	49.91 (9.42)	48.09 (8.72)	48.90 (8.44)	40
	9-11	51.33 (8.40)	48.35 (8.74)	50.00 (8.56)	49.71 (8.51)	29
Risk Group Totals		49.69 (6.84)	48.42 (8.08)	47.95 (8.30)		

	ANOVAS and MANOVAS	
Variable	Multivariate Fs	Univariate Fs
Total Problems		Parent (1,234) = 1.87 Risk Group (2,234) = 4.20*ab Age Cohort (2,234) = 1.44
Broadband	Parent (2,233) = 0.83 Risk Group (4,466) = 3.05* Age Cohort (4,466) = 6.19**	
Externalizing Behavior		Risk Group (2,234) = 4.85**ab Age Cohort (2,234) = 4.32*cd
Internalizing Behavior		Risk Group (2,234) = 0.72 Age Cohort (2,234) = 1.20

Note. Means and Standard Deviations are aggregated across both Parents.
None of the Multivariate or Univariate interactions were significant.

* $p < .05$ ** $p < .01$ [a] AALs > Controls [b] NAALS > Controls
[c] Ages 3-5 > Ages 9-11 [d] Ages 6-8 > Ages 9-11

Table 6. Parents' Ratings of Their Daughters' Behavior Using CBCL Narrowband Factors in AAL, NAAL, and Control Families Across Ages 3-11 (T-Scores)

		RISK GROUP			AGE COHORT TOTALS	
		AALs	NAALs	Controls		
	AGE	(n=27)	(n=51)	(n=48)		
VARIABLE	COHORT	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	n
Withdrawn	3-5	52.04 (2.78)	54.26 (5.00)	53.71 (5.17)	53.57 (4.70)	57
	6-8	53.00 (3.65)	53.38 (4.24)	53.09 (5.18)	53.19 (4.49)	40
	9-11	53.92 (5.79)	54.05 (5.21)	53.46 (5.67)	53.76 (5.45)	29
Risk Group Totals		52.74 (3.87)	53.94 (4.78)	53.44 (5.26)		
Somatic	3-5	54.19 (4.81)	52.72 (3.49)	51.92 (2.36)	52.79 (3.60)[1]	57
Complaints	6-8	53.69 (4.91)	53.12 (4.34)	53.84 (4.64)	53.52 (4.43)	40
	9-11	57.00 (7.05)	53.35 (5.81)	53.24 (4.90)	54.59 (5.76)[1]	29
Risk Group Totals		54.67 (5.45)	52.97 (4.26)	53.26 (4.13)		
Anxious/	3-5	52.85 (4.40)	51.54 (2.51)	51.79 (3.31)	51.92 (3.29)	57
Depressed	6-8	51.25 (2.02)	54.75 (5.80)	52.56 (5.26)	53.17 (5.17)	40
	9-11	52.58 (4.70)	52.20 (4.03)	53.38 (5.32)	52.81 (4.73)	29
Risk Group Totals		52.31 (3.92)	52.68 (4.30)	52.48 (4.60)		
Social	3-5	57.08 (7.92)	53.10 (4.70)	52.24 (3.18)	53.72 (5.50)	57
Problems	6-8	54.38 (6.10)	53.78 (4.85)	53.06 (5.98)	53.61 (5.53)	40
	9-11	53.92 (5.90)	52.05 (4.45)	52.08 (5.25)	52.45 (5.10)	29
Risk Group Totals		55.57 (7.04)[ab]	53.11 (4.70)[b]	52.47 (4.80)[a]		
Thought	3-5	54.08 (5.80)	52.42 (4.81)	51.87 (3.99)	52.61 (4.83)	57
Problems	6-8	51.25 (2.72)	52.81 (4.95)	52.00 (4.75)	52.18 (4.49)	40
	9-11	52.17 (3.56)	52.45 (5.41)	50.88 (3.28)	51.69 (4.18)	29
Risk Group Totals		52.81 (4.71)	52.55 (4.93)	51.65 (4.07)		
Attention	3-5	53.92 (4.60)	52.54 (3.55)	52.32 (3.33)	52.78 (3.76)	57
Problems	6-8	51.94 (2.52)	53.31 (3.57)	52.59 (5.17)	52.75 (4.12)	40
	9-11	53.17 (5.42)	51.20 (2.14)	53.19 (5.48)	52.31 (4.58)	29
Risk Group Totals		53.17 (4.32)	52.52 (3.38)	52.53 (4.57)		
Delinquent	3-5	55.31 (5.97)	54.46 (4.43)	53.24 (4.05)	54.25 (4.81)	57
Behavior	6-8	55.06 (4.43)	56.63 (6.64)	53.34 (4.57)	55.00 (5.61)	40
	9-11	54.75 (6.69)	52.20 (3.94)	53.19 (5.48)	53.17 (5.28)	29
Risk Group Totals		55.11 (5.63)	54.70 (5.33)	53.26 (4.60)		
Aggressive	3-5	55.15 (5.79)	53.84 (4.64)	53.79 (5.32)	54.12 (5.14)[1,2]	57
Behavior	6-8	54.19 (4.85)	56.44 (6.49)	52.84 (5.21)	54.55 (5.85)[2]	40
	9-11	52.25 (3.41)	51.80 (3.66)	52.23 (3.95)	52.09 (3.69)[1]	29
Risk Group Totals		54.22 (5.12)	54.25 (5.36)	53.05 (4.94)		

Multivariate F

Parent (8,227) = 1.62
Risk Group (16,454) = 1.99*
Age Cohort (16,454) = 2.08**
Parent X Risk Group (16,454) = 0.56
Parent X Age Cohort (16,454) = 0.96
Risk Group X Age Cohort (32,839) = 1.27
Parent X RG X AC (32,839) = 0.77

Note. Means and SDs are aggregated across both Parents.
Means with the same superscript differ at $p < .05$ (Student-Newman-Keuls Test) and also are the only variables in which Univariate Fs were significant for that factor.

* $p < .05$ ** $p < .01$

two groups on the Somatic Complaints scale. For the Social Problems scale, the SNK showed that AALs had greater problems in this area than Controls and NAALs. Controls and NAALs did not differ.

Univariate Fs for the Age Cohort effect showed significant differences between groups on the Somatic Complaint [F (2,234) = 3.53, $p < .05$] and Aggressive Behavior scales [F (2,234) = 4.08, $p < .05$]. Post-hoc analyses showed that girls ages 3-5 had less problems than girls ages 9-11 on the Somatic Complaints scale, while girls ages 3-5 and ages 6-8 had more problems than girls ages 9-11 on the Aggressive Behavior scale.

Although there was not a significant main effect for which parent was rating the FTC in any of the above analyses, nor any interactions with the Parent factor, mother and father ratings are not completely independent of the other two factors (i.e. Risk Group and Age Cohort). In order to rule out whether the significant Risk Group and Age Cohort main effects were due to the paired nature of the Parent factor within Risk Group, ANOVAs and MANOVAs were run using a nested design. None of these tests were significant demonstrating that the Risk Group and Age Cohort effects were not attributable to the fact that parent ratings were not independent.

Finally, a 3 (Risk Group) X 2 (Age Cohort) ANOVA, using Teacher TRF Total Behavior Problems as the dependent variable, showed no significant findings. Similarly, separate 3 (Risk Group) X 2 (Age Cohort) MANOVAS for the two TRF Broadband Factors, and the eight TRF Narrowband factors, yielded no significant differences for main effects or interactions.

Child Health Issues

Since the Child Health and Developmental History was not administered to all girls ages 3-5, and also was missing for a smaller number of older girls as well, statistical power for these analyses was lower. Also, the incidence rate for the health issues reported was very low, with little variability. Nevertheless, factorial (Risk Group X Age Cohort) MANOVAS and ANOVAS were run on the following variables: Number of Developmental Services Received, Number of Hospitalizations, Number of Accidents, Number of Sensory Problems, Number of Different Medications Taken, Elimination Problems (bedwetting or soiling), Height, Weight, General Sleep Problems, and Sleep Apnea Problems. No significant effects were found in any of these analyses. In addition, Chi-Square analyses for Risk Group and Age Cohort, examining possible differences in presence or absence of Elimination Problems, and presence or absence of Hospitalizations or Accidents, showed no significant effects.

The Effects of Recovery from Alcohol Problems

In order to assess possible effects of remission of alcohol problems upon child functioning, Alcoholic families were classified into Recovering and Non-Recovering families based on whether the father met DSM-IV criteria for Alcohol Abuse or Dependence within the last three years. Of the 51 NAAL families, 15 fathers no longer experienced an alcohol diagnosis within three years of the FTC data collection. Nine of the 27 AAL families no longer had a father experiencing an alcohol diagnosis within the past three years.

It should also be noted that none of the fathers in the Control families

developed an alcohol diagnosis. The following ANOVAS and MANOVAS were run on only Alcoholic families in order to look for possible changes resulting from the remission of alcohol problems. Since there was a very small number of subjects in each Age Cohort group (e.g. only three Recovering NAAL 6-8 year olds and two Recovering AAL 9-11 year olds), age differences could not be analyzed. When significant main effects for Recovery Status were found, planned comparisons with Control families were run in order to test if there were differences between Control, Recovering, and Non-Recovering families.

A 2 (Risk Group) X 2 (Recovery Status) MANOVA was performed for demographic variables (see Table 7). As can be seen in the table, this analysis showed significant multivariate main effects for both Risk Group and Recovery Status. There was no significant multivariate interaction. Univariate F analyses showed AAL families lower than NAALs in Maternal Education [F (1,74) = 6.36, p < .05], Paternal Education [F (1,74) = 11.74, p < .01], Annual Family Income [F (1,74) = 6.96, p < .05], and Family SES [F (1,74) = 4.62, p < .05]. The only significant Univariate F for Recovery Status was that fathers in Recovering families were older than fathers in Non-Recovering families [F (1,74) = 4.91, p < .05].

Child Outcome Variables

Intellectual Functioning and Academic Achievement. Table 8 shows analyses for FTC IQ scores and WRAT-R standard scores. As can be seen in the table, the 2 (Risk Group) X 2 (Recovery Status) ANOVA on FTC IQ scores showed that girls in AAL families had lower IQs than did girls in NAAL families. The analysis also revealed that girls in Non-Recovering alcoholic homes had lower IQs than did girls

Table 7. Demographic Characteristics of AAL and NAAL Families with Girls Considering Fathers' Recovery Status

		RISK GROUP				RECOVERY STATUS TOTALS		
		AALs (n=27)		NAALs (n=51)				
VARIABLE	RECOVERY STATUS	Mean	(SD)	Mean	(SD)	Mean	(SD)	n
FTC Age	Recovering	6.90	(2.52)	7.94	(2.99)	7.55	(2.81)	24
	NonRecov.	6.71	(2.37)	5.80	(2.36)	6.10	(2.38)	54
Risk Group Totals		6.78	(2.37)	6.43	(2.72)			
Maternal Age	Recovering	33.13	(2.45)	35.80	(4.83)	34.80	(4.24)	24
	NonRecov.	34.21	(4.31)	34.51	(3.94)	34.41	(4.03)	54
Risk Group Totals		33.85	(3.78)	34.89	(4.21)			
Paternal Age	Recovering	39.70	(7.95)	38.39	(6.28)	38.88	(6.81)[1]	24
	NonRecov.	36.65	(5.05)	35.24	(4.58)	35.71	(4.74)[1]	54
Risk Group Totals		37.67	(6.18)	36.17	(5.27)			
Maternal Ed. (in years)	Recovering	12.78	(1.72)	14.27	(2.15)	13.71	(2.10)	24
	NonRecov.	12.67	(1.71)	13.69	(2.03)	13.35	(1.97)	54
Risk Group Totals		12.70	(1.68)[a]	13.86	(2.06)[a]			
Paternal Ed. (in years)	Recovering	12.44	(1.67)	15.00	(2.27)	14.04	(2.39)	24
	NonRecov.	12.50	(1.69)	13.44	(2.09)	13.13	(2.00)	54
Risk Group Totals		12.48	(1.65)[a]	13.90	(2.24)[a]			
Annual Family Inc.	Recovering	35.83	(12.50)	50.67	(14.83)	45.10	(15.56)	24
	NonRecov.	28.56	(21.82)	41.04	(22.65)	36.88	(22.96)	54
Risk Group Totals		30.98	(19.28)[a]	43.87	(20.99)[a]			
Family SES	Recovering	30.61	(9.43)	41.59	(16.10)	37.47	(14.77)	24
	NonRecov.	29.14	(12.50)	33.55	(14.67)	32.08	(14.02)	54
Risk Group Totals		29.63	(11.40)[a]	35.91	(15.39)[a]			

Multivariate F for Risk Group (7,68) = 2.72*
Multivariate F for Recovery Status (7,68) = 2.60 *
Multivariate F for Risk X Recovery (7,68) = 0.81

Note. Annual Family Income is represented in ten thousand dollar units.
Family SES is represented in units of 10.
Matching superscripts represent significant group differences on Univariate Fs with df of (1,74). No significant univariate interactions were found.

* $p < .05$

Table 8. Intellectual and Achievement Results of Girls in AAL and NAAL Families in Recovering and Non-Recovering Homes

VARIABLE	RECOVERY STATUS	RISK GROUP AALs Mean (SD)	RISK GROUP NAALs Mean (SD)	RECOVERY STATUS TOTALS Mean (SD)	n
		(n=27)	(n=51)		
FTC IQ	Recovering	0.36 (0.83)	1.03 (0.79)	0.78 (0.86)	24
(z-score)	NonRecov.	0.08 (1.06)	0.34 (0.86)	0.26 (0.93)	54
Risk Group Totals		0.17 (0.98)	0.55 (0.89)		
		(n=14)	(n=26)		
WRAT-R	Recovering	95.40 (16.02)	104.50 (18.81)	101.47 (17.90)	15
Reading	NonRecov.	97.44 (13.21)	94.56 (14.56)	95.60 (13.88)	25
Risk Group Totals		96.71 (13.69)	98.38 (16.70)		
WRAT-R	Recovering	99.40 (12.12)	103.20 (15.35)	101.93 (14.03)	15
Spelling	NonRecov.	90.44 (17.40)	91.31 (11.57)	91.00 (13.60)	25
Risk Group Totals		93.64 (15.85)	95.88 (14.14)		
WRAT-R	Recovering	93.20 (7.79)	106.40 (17.32)	102.00 (15.86)	15
Arithmetic	NonRecov.	88.33 (16.58)	92.63 (15.33)	91.08 (15.59)	25
Risk Group Totals		90.07 (13.92)	97.92 (17.20)		

ANOVAS and MANOVAS

Variable	Multivariate Fs	Univariate Fs
FTC IQ		Risk Group (1,74) = 4.15*
		Recovery Status (1,74) = 4.46*
		Risk X Recovery (1,74) = 0.80
WRAT-R	Risk Group (3,34) = 0.91	
	Recovery Status (3,34) = 3.38*	
	Risk X Recovery (3,34) = 1.05	
Reading		Recovery Status (1,36) = 0.54
Spelling		Recovery Status (1,36) = 4.63*
Arithmetic		Recovery Status (1,36) = 3.05

Planned Comparisons

Variable	Controls Mean (SD)	Recovering Fathers Mean (SD)	Non-Recov. Fathers Mean (SD)
FTC IQ	0.80 (0.75)[a]	0.78 (0.86)[b]	0.26 (0.93)[ab]
WRAT-R Spelling	102.17 (14.58)[a]	101.93 (14.03)[b]	91.00 (13.60)[ab]

Note. All WRAT-R scores are standard scores.
Means with the same superscript on Planned Comparisons differ at $p < .05$
* $p < .05$

in families in which alcohol problems continued. There was no significant interaction between Risk Group and Recovery Status. Finally, a planned comparison including Control families showed that girls in Non-Recovering alcoholic homes had lower IQs than did girls in Control families ($t = -3.24$, $p < .01$), but that IQs did not differ between girls in Control and Recovering families.

A 2 (Risk Group) X 2 (Recovery Status) MANOVA with FTC WRAT-R scores showed only a significant main effect for Recovery Status. Univariate Fs revealed a significant difference on the Spelling subtest with girls in Non-Recovering homes scoring lower than girls in Recovering homes. A planned comparison was performed adding Control families to the analysis. This test showed that girls in Non-Recovering homes scored lower in Spelling than did Controls ($t = -2.90$, $p < .01$), but that Spelling scores did not differ between girls in Control and Recovering families (see Table 8).

Child Behavior Problems. Table 9 shows analyses for CBCL Total Behavior Problems and the two CBCL Broadband factors. As can been seen in the table, the (Risk Group) X 2 (Recovery Status) ANOVA for Total Behavior Problems showed that girls in Recovering homes had significantly less problems than girls in Non-Recovering homes. A planned comparison adding Control girls demonstrated that these girls in Recovering homes did not differ from Controls, but that girls in Non-recovering homes had more overall behavior problems than Controls ($t = 3.88$, $p < .01$). The ANOVA showed no Risk Group main effect, nor a significant interaction.

A 2 (Risk Group) X 2 (Recovery Status) MANOVA for the two CBCL Broadband factors showed significant effects for Recovery Status only. Univariate Fs

Table 9. Parents' Ratings of Their Daughters' Behavior Using CBCL Total Behavior Problems and Broadband Factors in AAL and NAAL Families with Fathers' Recovery Status Considered (T-Scores)

		RISK GROUP				RECOVERY STATUS TOTALS		
		AALs (n=27)		NAALs (n=51)				
VARIABLE	RECOVERY STATUS	Mean	(SD)	Mean	(SD)	Mean	(SD)	n
Total Beh. Problems	Recovering	48.39	(5.54)	47.77	(6.36)	48.00	(6.01)	24
	NonRecov.	52.61	(7.06)	51.06	(8.09)	51.57	(7.76)	54
	Risk Group Totals	51.20	(6.84)	50.09	(7.74)			
Externalizing Behavior	Recovering	50.28	(5.58)	49.60	(6.31)	49.85	(6.00)	24
	NonRecov.	53.83	(7.35)	52.82	(8.11)	53.16	(7.85)	54
	Risk Group Totals	52.65	(6.97)	51.87	(7.74)			
Internalizing Behavior	Recovering	47.50	(5.36)	47.30	(8.20)	47.37	(7.20)	24
	NonRecov.	50.78	(7.29)	48.89	(8.04)	49.52	(7.81)	54
	Risk Group Totals	49.69	(6.84)	48.42	(8.08)			

ANOVAS and MANOVAS

Variable	Multivariate Fs	Univariate Fs
Total Problems		Risk Group (1,152) = 0.68 Recovery Status (1,152) = 8.13** Risk X Recovery (1,152) = 0.13
Broadband	Risk Group (2,151) = 0.32 Recovery Status (2,151) = 3.29* Risk X Recovery (2,151) = 0.22	
Externalizing Behavior		Recovery Status (1,152) = 6.48*
Internalizing Behavior		Recovery Status (1,152) = 3.10

Planned Comparisons

	Controls		Recovering Fathers		Non-Recov. Fathers	
Variable	Mean	(SD)	Mean	(SD)	Mean	(SD)
Total Problems	47.31	(8.64)[a]	48.00	(6.01)[b]	51.57	(7.76)[ab]
Externalizing Beh.	48.90	(8.55)[a]	49.85	(6.00)[b]	53.16	(7.85)[ab]

Note. Means and Standard Deviations are aggregated across both Parents.
Means with the same superscript on Planned Comparisons differ at $p < .05$

* $p < .05$ ** $p < .01$

showed that this effect was only significant for Externalizing Behavior Problems as girls in Recovering homes had less externalizing behavior than girls in Non-Recovering homes (see Table 9). Once again, the planned comparison including Control families showed that girls in Non-Recovering homes had more problems than Control girls ($t = 3.89$, $p < .01$), but that Control girls and Recovering girls did not differ.

A 2 (Risk Group) X 2 (Recovery Status) MANOVA for the eight CBCL Narrowband factors was performed with results shown in Table 10. Only a significant main effect for Risk Group was found. Univariate Fs showed this significant Risk Group effect only on the Social Problems factor with girls in NAAL families having less problems than girls in AAL families.

Finally in regards to child behavior problems, no significant differences were found for a 2 (Risk Group) X 2 (Recovery Status) ANOVA on Teacher TRF Total Behavior Problems, a 2 (Risk Group) X 2 (Recovery Status) MANOVA on the two TRF Broadband factors, or a 2 (Risk Group) X (Recovery Status) MANOVA on the eight TRF Narrowband factors.

Table 10. Parents' Ratings of Their Daughters' Behavior Using CBCL Narrowband Factors in AAL and NAAL Families with Fathers' Recovery Status Considered (T-Scores)

		RISK GROUP				RECOVERY STATUS TOTALS		
		AALs (n=27)		NAALs (n=51)				
VARIABLE	RECOVERY STATUS	Mean	(SD)	Mean	(SD)	Mean	(SD)	n
Withdrawn	Recovering	51.89	(2.65)	53.07	(4.98)	52.62	(4.27)	24
	NonRecov.	53.17	(4.32)	54.31	(4.69)	53.93	(4.58)	54
Risk Group Totals		52.74	(3.87)	53.94	(4.78)			
Somatic	Recovering	53.17	(4.16)	52.00	(3.60)	52.44	(3.82)	24
Complaints	NonRecov.	55.42	(5.90)	53.38	(4.46)	54.06	(5.05)	54
Risk Group Totals		54.67	(5.45)	52.97	(4.26)			
Anxious/	Recovering	51.39	(2.00)	52.17	(3.65)	51.87	(3.13)	24
Depressed	NonRecov.	52.78	(4.54)	52.89	(4.55)	52.85	(4.53)	54
Risk Group Totals		52.31	(3.92)	52.68	(4.30)			
Social	Recovering	54.11	(5.80)	52.00	(4.23)	52.79	(4.92)	24
Problems	NonRecov.	56.31	(7.55)	53.57	(4.83)	54.48	(5.98)	54
Risk Group Totals		55.57	(7.04)	53.11	(4.70)			
Thought	Recovering	52.17	(3.33)	51.63	(3.74)	51.83	(3.56)	24
Problems	NonRecov.	53.14	(5.29)	52.93	(5.32)	53.00	(5.29)	54
Risk Group Totals		52.81	(4.71)	52.55	(4.93)			
Attention	Recovering	51.83	(2.83)	51.43	(2.22)	51.58	(2.45)	24
Problems	NonRecov.	53.83	(4.79)	52.97	(3.68)	53.26	(4.08)	54
Risk Group Totals		53.17	(4.32)	52.52	(3.38)			
Delinquent	Recovering	53.78	(4.07)	53.63	(5.01)	53.69	(4.64)	24
Behavior	NonRecov.	55.78	(6.22)	55.14	(5.43)	55.35	(5.68)	54
Risk Group Totals		55.11	(5.63)	54.70	(5.33)			
Aggressive	Recovering	52.72	(3.27)	52.33	(3.82)	52.48	(3.59)	24
Behavior	NonRecov.	54.97	(5.72)	55.06	(5.71)	55.03	(5.69)	54
Risk Group Totals		54.22	(5.12)	54.25	(5.36)			

ANOVAS and MANOVAS		
Variable	Multivariate Fs	Univariate Fs
Narrowband Factors	Risk Group (8,145) = 2.28*	
	Recovery Status (8,145) = 1.53	
	Risk X Recovery (8,145) = 0.15	
Social Problems		Risk Group (1,152) = 5.77*

Note. Means and Standard Deviations are aggregated across both Parents.
* $p < .05$

Discussion

Research on the etiology of alcoholism has increased substantially in the last decade. A research design of special interest involves the cohort of children of alcoholics (COAs) vs. non-COAs. Such designs vary with genetic and contextual risk because COAs, as a group, appear likely to disproportionately carry risk characteristics that will lead to later disorders. Thus, by using these designs, one is able to contrast a higher risk vs. a lower risk population, and explore the potential contributions of specific attributes to the overall risk equation.

Most recently, some studies have investigated potentially differing effects on COAs as a function of their parents' alcoholism subtype (e.g. Ellis et al., 1996; Zucker et al., 1994a). However, female COAs have been largely ignored in the earlier work with COAs, as well as the more recent endeavors. The present study demonstrates that, even at very young ages, there are noticeable differences between girls reared in alcoholic environments vs. nonalcoholic environments. These differences are uniformly related to poorer functioning. The study also shows, however, that such differences are often a function of the subtype of parental alcoholism, rather than being an overall attribute of familial alcoholism.

Girls in Antisocial Alcoholic (AAL) families had lower levels of intellectual functioning than did girls in Nonantisocial Alcoholic (NAAL) families, and girls whose parents do not have alcohol problems. Past research has also demonstrated lower IQs in COAs (Bennett et al., 1988; Ervin et al., 1984; Gabrielli & Mednick, 1983; Stenhausen et al., 1982), although some studies have not found this effect (Fitzgerald et al., 1993; Herjanic et al., 1978; Johnson & Rolf, 1988; Tarter et al.,

1984). Given the substantial evidence for familial alcoholism differences observed here, the present research suggests that one reason an effect may not have been found in some of the previous studies was the failure to address the heterogeneity of parental alcoholism. The present study indicated that only those COAs from AAL families showed decreased intellectual functioning when compared with non-COAs.

This finding was anticipated, especially given other factors known to distinguish AAL, from NAAL and Control families. Factors such as paternal and maternal IQ and education, family SES, and family income have been demonstrated to differ between groups in the current sample, as well as in the larger project (Bingham, Zucker, & Fitzgerald, 1996; Ellis et al., 1996; Zucker et al., in press). In addition, AAL families have been shown to have a greater aggregation of other potential risk factors such as greater amounts and severity of other psychopathology and family aggression (Ellis et al., 1996). Whether any of these factors have separate contributions to observed IQ differences (i.e. beyond that indirectly assessed by grouping families according to risk) remains to be seen in future studies.

Intellectual functioning is also known to have a strong heritable component (Sattler, 1982). IQ differences have already been observed among men and women as a function of alcoholic subtype in one previous study (Bingham et al., 1996). At the same time, it is likely that other factors found in AAL families may also negatively influence the cognitive and social stimulation available to the children in these homes. Such an explanation is consistent with previous research findings that the quality of stimulation in home environments of alcoholic versus nonalcoholic homes differed, and thereby impacted the intellectual abilities of very young boys

(Noll et al., 1992). It should also be noted that although IQs significantly differed between AALs and Controls, the AAL girls were still within normal levels thus reducing the likelihood that the current results were a function of Fetal Alcohol Syndrome. This potential contribution has already been ruled out as a possible source of variation among boys (Bingham, Fitzgerald, Fitzgerald, & Zucker, 1996). The present data are consistent with the null hypothesis for girls, although future research is needed to test this hypothesis.

Despite the intellectual functioning subtype effect, the current study did not find significant differences between risk groups, nor interactions with age, in the academic achievement of the girls. These results are at odds with previous research findings indicating that COAs show impaired academic functioning relative to non-COAs (Bennett et al., 1988; Ervin et al., 1984; Hegedus et al., 1984; Marcus, 1986). At the same time, the reader is reminded that the mean age of girls in this study was less than seven. It may take longer for these effects to become pronounced enough to be detectable. The other literature in this area is based upon observations of substantially older children. In addition, it should be remembered that achievement data were missing on almost half of the girls because many of them were of preschool age. Thus, achievement findings in the present study need to be accepted cautiously due to the low statistical power of the analyses.

In terms of behavior problems, the current study shows that female COAs had greater overall behavior problems, more externalizing behavior, and more social problems (only AALs differed from Controls in this area) than did same-aged peers in nonalcoholic homes. These findings are consistent with past research showing

increased levels of behavior problems in COAs (Chassin et al., 1991; Ellis et al., 1996; Jacob & Leonard, 1986; Rubio-Stipec et al., 1991). The current study adds to previous work by showing that these different levels of adaptation are distinguishable even at very early ages in girls.

The fact that young female COAs showed greater externalizing behavior is an especially important finding. Lahey and Loeber (1994) have noted that girls have later onset and less externalizing behavior than boys. However, the current results indicate that when raised in an alcoholic environment, early vulnerabilities to aggressive and delinquent behavior are sometimes seen. Longitudinal work is necessary to see if these relatively small differences (in terms of the absolute magnitude of problem behavior) between COA and control girls become even greater as these girls enter into adolescence and young adulthood. Such behavior, combined with increased alcohol expectancies, has been shown to mediate alcohol involvement in young adults (Sher et al., 1991).

In the present study, AALs and NAALs did not differ from each other, in terms of their behavior, except with regard to social problems. It appears that even at very young ages, AAL girls are more socially immature than NAAL girls and Controls. This finding, although still within normal limits, provides early evidence of problems that may exacerbate as the girls get older. Future research is necessary to elucidate what specific factors of the AAL context lead to these effects.

The fact that girls from AAL families did not show significantly increased levels of behavior problems in other areas, or in overall behavior problems, does not replicate the recent findings with boys observed in similar families (Bingham et al.,

1996; Ellis et al., 1996). The statistical power in these other studies was greater. Although it is possible that real effects were masked in the current investigation by decreased statistical power, it should be noted that the absolute magnitude of the effects between female COAs and non-COAs observed in the present study were smaller than the effects seen among boys in the other study (Bingham et al.). Thus, the increased risk load in AAL families found in the prior studies, may not have the same impact on young female COAs as it does upon young males.

One explanation for a lack of differences between AAL and NAAL girls is the fact that the current study's alcoholic subtyping was based solely on the father's level of alcoholism and antisociality. In looking at differential effects on female COAs, it seems plausible that the risk load of the mothers, and its relationship to their daughters' functioning (either separately or in combination with fathers' risk load) should also be characterized. Chassin et al. (1991) found that there was even greater externalizing behavior in female COAs when the mother in those families was also alcoholic. As noted in the introductory chapter, there is research indicating that different alcoholic subtypes also exist among women (e.g., Hill, 1993; Zucker & Gomberg, 1993). Future studies might try to define alcoholic subtypes in mothers and use this information in analyses of adaptational differences among female COAs. Given the special role played by mothers in the socialization of their daughters, it is plausible that classifying female COAs' risk based on the mothers' alcoholism subtype, would lead to even more refined understanding of COA similarities and differences.

At the same time, mother differences have indirectly entered into these

analyses, given the already demonstrated differences in assortative mating noted among AALs, NAALs, and Controls (Ellis et al., 1996; Zucker, Ellis, Bingham, & Fitzgerald, in press). These studies have noted the co-aggregation of father antisociality differences, with differences in mother psychopathology (e.g. more antisocial behavior, higher levels of drinking problems, more depression) and social adaptation (e.g. less education). Thus, the subtype differences reported here, although based upon a classification of families by way of father functioning, indirectly were also accessing maternal covariation.

The results of the present study also did not confirm prior findings regarding greater internalizing behavior in female COAs as compared to control families (Bingham et al., 1996; Chassin et al., 1991; Ellis et al., 1996; Jacob & Leonard, 1986; Rubio-Stipec et al., 1991). Results from Chassin et al. provided some indication that maternal alcoholism had a unique effect on children's internalizing symptomatology; the lack of specific attention in the current study to the mothers' risk load variation may again be one reason for the observed lack of effects.

The relatively young ages of the girls may also have contributed to the lack of differences in internalizing behavior. In the present study, information on child behavior was obtained through parent report. Parents may have the tendency to focus more on "acting out" behavior, especially with young female children, as externalizing behavior is more visible, thus easier to report. For example, lower scores are needed to fall in the clinical range for Internalizing Behavior Problems than Externalizing Behavior Problems on the CBCL, and girls need higher scores than boys to reach clinical levels for Internalizing Behavior Problems (Achenbach,

1991). In addition, the present study found a decrease in the level of Externalizing Behavior Problems as a function of age, but not in regard to Total Behavior Problems or Internalizing Behavior Problems. Thus, the lack of differences between COA and control girls might be attributable to the age of the girls. The present study involved only girls in early and middle childhood while the Chassin et al. (1991) study involved adolescents, the Jacob and Leonard (1986) study involved children ages 10-18, and the Rubio-Stipec et al. (1991) study involved children ages 4-16.

Perhaps the most intriguing finding of the current study was the observation that the functioning of girls in Recovering Alcoholic families was similar to that of Control families, and was significantly better than among children currently being reared in Alcoholic households. These results show that when alcohol problems no longer exist (at least for the fathers in these families), the girls in these home have IQs, spelling abilities, levels of total behavior problems, and levels of externalizing behavior similar to those of girls from families in which alcohol use has never been a problem. On the other hand, girls in homes where the father continues to have alcohol problems have lower functioning in all of these areas. These findings are consistent with results from a follow-up study of children from treatment families who varied in parental recovery vs. relapse (Moos & Billings, 1982), and a study using a community-based sample of adolescents from alcoholic families, in which analyses based on recovery status were done (Chassin et al., 1991). Results from all three studies indicate that the cessation of alcohol problems leads to the reduction of the stress-related environment that produces negative outcomes for children. A still

unanswered question is whether there is a critical point in the child's life when the damage from an alcoholic environment is so severe that the likelihood for improved child functioning is very low? Longitudinal studies are needed to address such a question. Another issue requiring further research, concerns the factors that distinguish those families that recover from alcohol abuse from the ones that don't. Factors such as marital issues and social support are obvious candidates for mechanisms, but there may be others. It is also possible that the same factors that lead a parent to stop abusing alcohol may mediate or moderate the changes seen in the children of recovering families, besides contributing to the actual cessation of parental alcohol problems.

Limitations of the Study

Some of the limitations of the current study have already been identified. First, even though age was considered an important factor to explore, the current study is cross-sectional in nature. As such, several of the instruments were not available for all participants (i.e. Health Histories, WRAT-R, and Teacher TRF) across all time periods. This reduced the number of subjects for analyses in a sample with already low statistical power. In addition, longitudinal replication of the current results is necessary, especially with regard to further understanding the effects of the cessation of alcohol problems in parents.

Second, this study examined the effects of alcohol problems on young girls by categorizing families based primarily upon fathers' risk attributes. Although this methodology has proven useful in studying effects on boys, it appears that the lack of attention to specific risk factor variation among the mothers may have limited the

ability to understand potential effects on girls.

Third, this study examined children's functioning beginning at a very young age. As part of a longitudinal study focusing on risk factors and child development, it is important to document early differences between Alcoholic and Nonalcoholic families. However, many behavior problems occur at very low base rates among young children. This makes the task of identifying possible differences even harder.

Fourth, the presence or absence of behavior problems in this study was assessed only through parent report (teacher reports were obtained but only on a much smaller subset of the sample). Thus, there is a possibility that the results obtained, at least in part, reflect parental perception differences between groups, rather than actual behavior differences among the children. This is especially an issue since the level of psychopathology differs substantially among the parental subtype groups. Prior research on the CBCL has shown that this may not be a huge limitation, as psychologically distressed parents do not rate their children as more disturbed than normal parents (Conrad & Hammen, 1989), and psychologically distressed parents rate their children similarly to other independent sources such as teachers (Richters & Pellegrini, 1989). In addition, the fact that there were group differences with other observed (rather than perceived) variables in the present study (i.e. IQ), provides further support that results regarding FTC behavior were not just a function of parents' perceptions. Nevertheless, future studies should obtain information about child functioning from multiple sources.

Finally, although the present research specifically focused on young, female children because they have been often overlooked, one could argue that the reverse

bias was present in this investigation. While it is important to document the effects of alcoholism on girls, and to identify potential etiologic processes of alcoholism among women, it may also be useful to directly compare boys with girls. Often, the ability to comment on gender differences can more easily be done when controlled for in analyses from the same sample, rather than comparing results from different samples in different studies.

APPENDICES

APPENDIX A

Drinking and Drug History Questionnaire

APPENDIX A

Drinking and Drug History Questionairre

Information on Drinking and Other Drug Use
(6/1/89) (13 pages)

R Number: _____
Given By: _____
Date: _____
T1.0 Ans. Chk: _____

This questionnaire takes about 15 minutes to complete. All information will be used for research only and will be kept strictly confidential. If you are not sure of the answer to a question please answer the best you can. Please try to answer each item.

A. THE FOLLOWING QUESTIONS ARE ABOUT YOUR DRINKING OF ALCOHOLIC BEVERAGES:

1. HOW OLD WERE YOU THE FIRST TIME YOU EVER TOOK A DRINK? DO NOT COUNT THE TIMES WHEN YOU WERE GIVEN A "SIP" BY AN ADULT.

   _____ years old.

2. OVER THE LAST 6 MONTHS, ON THE AVERAGE, HOW MANY DAYS A MONTH HAVE YOU HAD A DRINK?

   _____ days a month.

3. OVER THE LAST 6 MONTHS, ON A DAY WHEN YOU ARE DRINKING, HOW MANY DRINKS DO YOU USUALLY HAVE IN 24 HOURS? (A DRINK IS A 12 OZ. CAN, GLASS OR BOTTLE OF BEER; A 4 OZ. GLASS OF WINE; A SINGLE SHOT; OR A SINGLE "MIXED DRINK.")

   _____ drinks per 24 hours.

4. OVER THE PAST 6 MONTHS, WHEN YOU GOT DRUNK, HOW BAD WAS YOUR HANGOVER?

_____ Never bad
_____ Not bad
_____ A little less than average
_____ Average
_____ A little more than average
_____ Pretty Bad
_____ Terrible
_____ Worst possible
_____ Never drank enough to get hangover

IF YOU DRANK NO ALCOHOLIC BEVERAGES AT ALL (NOT EVEN A FEW SIPS) IN THE LAST 6 MONTHS, GO NOW TO PAGE 5, QUESTION 5.

ALL OTHERS CONTINUE ON THE NEXT PAGE.

B. THE FOLLOWING QUESTIONS ARE ABOUT YOUR DRINKING PATTERNS. IN ANSWERING THE QUESTIONS, PLEASE THINK ABOUT WHAT YOU HAVE DONE ON THE AVERAGE OVER THE LAST SIX MONTHS.

1. WHEN DRINKING WINE:

a. HOW OFTEN DO YOU USUALLY HAVE WINE OR A PUNCH CONTAINING WINE?

_____ 3 or more times a day
_____ 2 times a day
_____ Once a day
_____ Nearly every day
_____ 3 or 4 times a week
_____ once or twice a week
_____ 2 or 3 times a month
_____ About once a month
_____ Less than once a month, but at least once a year
_____ Less than once a year
_____ NEVER [If checked, go to question #2a]

b. THINK OF ALL THE TIMES YOU HAD WINE OR A PUNCH CONTAINING WINE RECENTLY. WHEN YOU DRINK WINE, HOW OFTEN DO YOU HAVE 10 OR MORE GLASSES?

_____ Nearly every time: SKIP TO QUESTION #2 BELOW
_____ More than half the time: SKIP TO QUESTION #2 BELOW
_____ Less than half the time
_____ Once in a while
_____ NEVER

c. WHEN YOU DRINK WINE, HOW OFTEN DO YOU HAVE AS MANY AS 7 TO 9 GLASSES?

_____ Nearly every time: SKIP TO QUESTION #2 BELOW
_____ More than half the time: SKIP TO QUESTION #2 BELOW
_____ Less than half the time
_____ Once in a while
_____ NEVER

d. WHEN YOU DRINK WINE, HOW OFTEN DO YOU HAVE AS MANY AS 5 TO 6 GLASSES?

_____ Nearly every time: SKIP TO QUESTION #2 BELOW
_____ More than half the time: SKIP TO QUESTION #2 BELOW
_____ Less than half the time
_____ Once in a while
_____ NEVER

e. WHEN YOU DRINK WINE, HOW OFTEN DO YOU HAVE AS MANY AS 3 to 4 GLASSES?

_____ Nearly every time: SKIP TO QUESTION #2 BELOW
_____ More than half the time: SKIP TO QUESTION #2 BELOW
_____ Less than half the time
_____ Once in a while
_____ NEVER

f. WHEN YOU DRINK WINE, HOW OFTEN DO YOU HAVE 1 TO 2 GLASSES?

_____ Nearly every time
_____ More than half the time
_____ Less than half the time
_____ Once in a while
_____ NEVER

2. <u>WHEN DRINKING BEER</u>

a. HOW OFTEN DO YOU USUALLY HAVE BEER?

_____ 3 or more times a day
_____ 2 times a day
_____ Once a day
_____ Nearly every day
_____ 3 or 4 times a week
_____ Once or twice a week
_____ 2 or 3 times a month
_____ About once a month
_____ Less than once a month,but at least once a year
_____ Less than once a year
_____ NEVER [If checked, go to question #3a]

b. THINK OF ALL THE TIMES YOU HAD BEER RECENTLY. WHEN YOU DRINK BEER, HOW OFTEN DO YOU HAVE 10 OR MORE CANS, GLASSES OR BOTTLES?

_____ Nearly every time: SKIP TO QUESTION #3 BELOW
_____ More than half the time: SKIP TO QUESTION #3 BELOW
_____ Less than half the time
_____ Once in a while
_____ NEVER

c. WHEN YOU DRINK BEER, HOW OFTEN DO YOU HAVE AS MANY AS 7 TO 9 CANS, GLASSES OR BOTTLES?

_____ Nearly every time: SKIP TO QUESTION #3 BELOW
_____ More than half the time: SKIP TO QUESTION #3 BELOW
_____ Less than half the time
_____ Once in a while
_____ NEVER

d. WHEN YOU DRINK BEER, HOW OFTEN DO YOU HAVE AS MANY AS 5 TO 6 CANS, GLASSES OR BOTTLES?

_____ Nearly every time: SKIP TO QUESTION #3 BELOW
_____ More than half the time: SKIP TO QUESTION #3 BELOW
_____ Less than half the time
_____ Once in a while
_____ NEVER

e. WHEN YOU DRINK BEER, HOW OFTEN DO YOU HAVE AS MANY AS 3 to 4 CANS, GLASSES OR BOTTLES?

_____ Nearly every time: SKIP TO QUESTION #3 BELOW
_____ More than half the time: SKIP TO QUESTION #3 BELOW
_____ Less than half the time
_____ Once in a while
_____ NEVER

f. WHEN YOU DRINK BEER, HOW OFTEN DO YOU HAVE 1 TO 2 CANS, GLASSES OR BOTTLES?

_____ Nearly every time
_____ More than half the time
_____ Less than half the time
_____ Once in a while
_____ NEVER

3. <u>WHEN DRINKING WHISKEY OR LIQUOR</u>

a. HOW OFTEN DO YOU USUALLY HAVE WHISKEY OR LIQUOR (SUCH AS MARTINIS, MANHATTANS, HIGHBALLS, OR STRAIGHT DRINKS INCLUDING SCOTCH, BOURBON, GIN, VODKA, RUM, ETC.)?

_____ 3 or more times a day
_____ 2 times a day
_____ Once a day
_____ Nearly every day
_____ 3 or 4 times a week
_____ Once or twice a week
_____ 2 or 3 times a month
_____ About once a month
_____ Less than once a month, but at least once a year
_____ Less than once a year
_____ NEVER [If checked,go to question #4]

b. THINK OF ALL THE TIMES YOU HAD DRINKS CONTAINING WHISKEY OR OTHER LIQUOR RECENTLY. WHEN YOU HAVE HAD THEM, HOW OFTEN DO YOU HAVE 10 OR MORE DRINKS?

_____ Nearly every time: SKIP TO QUESTION #4 BELOW
_____ More than half the time: SKIP TO QUESTION #4 BELOW
_____ Less than half the time
_____ Once in a while
_____ NEVER

c. WHEN YOU HAVE HAD DRINKS CONTAINING WHISKEY OR OTHER LIQUOR, HOW OFTEN DO YOU HAVE AS MANY AS 7 TO 9 DRINKS?

_____ Nearly every time: SKIP TO QUESTION #4 BELOW
_____ More than half the time: SKIP TO QUESTION #4 BELOW
_____ Less than half the time
_____ Once in a while
_____ NEVER

d. WHEN YOU HAVE HAD DRINKS CONTAINING WHISKEY OR OTHER LIQUOR, HOW OFTEN DO YOU HAVE AS MANY AS 5 TO 6 DRINKS?

_____ Nearly every time: SKIP TO QUESTION #4 BELOW
_____ More than half the time: SKIP TO QUESTION #4 BELOW
_____ Less than half the time
_____ Once in a while
_____ NEVER

e. WHEN YOU HAVE HAD DRINKS CONTAINING WHISKEY OR LIQUOR, HOW OFTEN DO YOU HAVE 3 TO 4 DRINKS?

_____ Nearly every time: SKIP TO QUESTION #4 BELOW
_____ More than half the time: SKIP TO QUESTION #4 BELOW
_____ Less than half the time
_____ Once in a while
_____ NEVER

f. WHEN YOU HAVE HAD DRINKS CONTAINING WHISKEY OR LIQUOR, HOW OFTEN DO YOU HAVE 1 TO 2 DRINKS?

_____ Nearly every time
_____ More than half the time
_____ Less than half the time
_____ Once in a while
_____ NEVER

4. <u>WHEN DRINKING ANYTHING</u>, CHECK HOW OFTEN YOU HAVE ANY DRINK CONTAINING ALCOHOL, WHETHER IT IS WINE, BEER, WHISKEY OR ANY OTHER DRINK. MAKE SURE THAT YOUR ANSWER IS NOT LESS FREQUENT THAN THE FREQUENCY REPORTED ON ANY OF THE PRECEDING QUESTIONS.

_____ 3 or more times a day
_____ 2 times a day
_____ Once a day
_____ Nearly every day
_____ 3 or 4 times a week
_____ Once or twice a week
_____ 2 or 3 times a month
_____ About once a month
_____ Less than once a month, but at least once a year
_____ Less than once a year

---

5. Now <u>a question about earlier in your life</u>: HOW OLD WERE YOU THE FIRST TIME YOU EVER DRANK ENOUGH TO GET DRUNK?

_____ years old.

6a. WE ARE ALSO INTERESTED IN THE OCCASIONS THAT MAY BE RARE (OR NOT), WHEN PEOPLE DRINK A LOT MORE THAN THEY USUALLY DO. IN THE LAST SIX MONTHS, THINK OF THE 24 HOUR PERIOD WHEN YOU DID THE MOST DRINKING; THIS WOULD BE A DAY SOMEWHERE IN THE PERIOD BETWEEN _____ (month), _____ (year) AND NOW.

On that day, how many drinks did you have? (A drink is a 12 oz. can, bottle, or glass of beer, a 4 oz. glass of wine, a single shot, or a single mixed drink).

_____ 30 or more drinks
_____ 25 - 29 drinks
_____ 20 - 24 drinks
_____ 15 - 19 drinks
_____ 10 - 14 drinks
_____ 7 - 9 drinks
_____ 5 - 6 drinks
_____ 3 - 4 drinks
_____ 1 - 2 drinks
_____ none

6b. APPROXIMATELY WHEN DID THIS HAPPEN? _____ (month), _____ (year).

6c. NOW ANSWER THIS QUESTION FOR ANY TIME IN YOUR LIFE BEFORE THESE LAST SIX MONTHS. IN THE 24 HOUR PERIOD WHEN YOU DID THE MOST DRINKING, HOW MANY DRINKS DID YOU HAVE?

_____ 30 or more drinks
_____ 25 - 29 drinks
_____ 20 - 24 drinks
_____ 15 - 19 drinks
_____ 10 - 14 drinks
_____ 7 - 9 drinks
_____ 5 - 6 drinks
_____ 3 - 4 drinks
_____ 1 - 2 drinks
_____ none

6d. APPROXIMATELY WHEN DID THIS HAPPEN? _____ (month), _____ (year)

ANSWER KEY FOR QUESTIONS BELOW:

1 2 3-5 6-10 11-20 21-50 51-100

101-250 251-500 501-1000 1000+ (more than 1000)

C. NOW SOME QUESTIONS ABOUT OUTCOMES PEOPLE SOMETIMES HAVE BECAUSE OF DRINKING. HAVE YOU EVER HAD ANY OF THE FOLLOWING HAPPEN BECAUSE OF YOUR DRINKING?

	YES (check one)	NO (check one)	HOW MANY TIMES (approx.- see key)*	AGE first time	AGE most recent time
1. Missed school or time on job	____	____	_____	_____	_____
2. Thought I was drinking too much	____	____	_____	_____	_____
3. Gone on a binge of constant drinking for 2 or more days	____	____	_____	_____	_____
4. Lost friends	____	____	_____	_____	_____
5. My spouse or others in my family (my parents or children) objected to my drinking	____	____	_____	_____	_____
6. Felt guilty about my drinking	____	____	_____	_____	_____
7. Divorce or separation	____	____	_____	_____	_____
8. Took a drink or two first thing in morning	____	____	_____	_____	_____
9. Restricted my drinking to certain times of day or week in order to control it or cut down, (like after 5PM, or only on weekends, or only with other people)	____	____	_____	_____	_____
10. Been fired or laid off	____	____	_____	_____	_____
11. Once started drinking, kept on going till completely intoxicated	____	____	_____	_____	_____
12. Had a car accident when I was driving	____	____	_____	_____	_____

* SELECT YOUR ANSWER FROM KEY AT THE TOP OF THE PAGE

Questions continue on the next page.

ANSWER KEY FOR QUESTIONS BELOW:

1 2 3-5 6-10 11-20 21-50 51-100

101-250 251-500 501-1000 1000+ (more than 1000)

	YES (check one)	NO (check one)	HOW MANY TIMES (approx.- see key)*	AGE first time	AGE most recent time
13. Kept on drinking after I promised myself not to	___	___	_____	_____	_____
14. Had to go to a hospital (other than accidents)	___	___	_____	_____	_____
15. Had to stay in a hospital overnight	___	___	_____	_____	_____
16. Had the shakes "the morning after"	___	___	_____	_____	_____
17. Heard or saw or felt things that weren't there, hallucinations) several days after stopping drinking	___	___	_____	_____	_____
18. Had blackouts (couldn't remember later what you'd done while drinking)	___	___	_____	_____	_____
19. Been given a ticket for drunk driving (DWI or DUIL)	___	___	_____	_____	_____
20. Had a jerking or fits (convulsions) several days after stopping drinking	___	___	_____	_____	_____
21. Been given a ticket for public intoxication, drunk and disorderly, or other nondriving alcohol arrest	___	___	_____	_____	_____
22. Had the D.T.'s (delirium tremens, shakes, sweating, rapid heart, etc.) within 2 - 3 days after stopping drinking	___	___	_____	_____	_____

* SELECT ANSWERS FROM THE KEY AT THE TOP OF THE PAGE

D. THE LAST SECTIONS OF THIS QUESTIONNAIRE DEAL WITH VARIOUS DRUGS OTHER THAN ALCOHOL. THERE IS STILL A LOT OF TALK THESE DAYS ABOUT THIS SUBJECT, BUT VERY LITTLE ACCURATE INFORMATION, PARTICULARLY ABOUT PATTERNS OF USE OF THESE SUBSTANCES IN ADULTHOOD. THEREFORE, WE STILL HAVE A LOT TO LEARN ABOUT THE ACTUAL EXPERIENCES OF PEOPLE YOUR AGE.

WE HOPE THAT YOU CAN ANSWER ALL QUESTIONS; BUT IF YOU FIND ONE WHICH YOU FEEL YOU CANNOT ANSWER HONESTLY, WE WOULD PREFER THAT YOU LEAVE IT BLANK.

REMEMBER THAT YOUR ANSWERS WILL BE KEPT STRICTLY CONFIDENTIAL AND THEY ARE NEVER CONNECTED WITH YOUR NAME. THAT IS WHY THIS QUESTIONNAIRE IS IDENTIFIED ONLY WITH A CODE NUMBER.

THE FOLLOWING QUESTIONS ARE ABOUT CIGARETTES (CHECK THE BEST ANSWER):

1a. HAVE YOU EVER SMOKED CIGARETTES?

_____ Never (GO TO QUESTION 3)
_____ Once or twice
_____ Occasionally but not regularly
_____ Regularly in the past
_____ Regularly now

1b. HAVE YOU SMOKED CIGARETTES DURING THE PAST 12 MONTHS?

_____ Never (GO TO QUESTION 3)
_____ Once or twice
_____ Occasionally but not regularly
_____ Regularly for a while during this year, but not now
_____ Regularly now

2. HOW FREQUENTLY HAVE YOU SMOKED CIGARETTES DURING THE PAST 30 DAYS?

_____ Not at all
_____ Less than one cigarette per day
_____ One to five cigarettes per day
_____ About one-half pack per day
_____ About one pack per day
_____ About one and one-half packs per day
_____ Two packs or more per day

E. THE FOLLOWING QUESTIONS ARE ALL ABOUT NON-PRESCRIPTION USE OF DRUGS, EITHER FOR RECREATION OR FOR SELF-MEDICATION.
(MARK ONE SPACE FOR EACH LINE).

3.
ON HOW MANY OCCASIONS (IF ANY)
HAVE YOU USED MARIJUANA
(GRASS, POT) OR HASHISH
(HASH, HASH OIL)

	0	1-2	3-5	6-9	10-19	20-39	40-99	100-1000	>1000
In your lifetime?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 12 months?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 30 days?	( )	( )	( )	( )	( )	( )	( )	( )	( )

(MARK ONE SPACE FOR EACH LINE).

4. ON HOW MANY OCCASIONS (IF ANY) HAVE YOU USED LSD (ACID)	0	1-2	3-5	6-9	10-19	20-39	40-99	100-1000	>1000
In your lifetime?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 12 months?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 30 days?	( )	( )	( )	( )	( )	( )	( )	( )	( )

5. ON HOW MANY OCCASIONS (IF ANY) HAVE YOU USED PSYCHEDELICS OTHER THAN LSD (LIKE MESCALINE, PEYOTE, PSILOCYBIN, PCP)									
In your lifetime?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 12 months?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 30 days?	( )	( )	( )	( )	( )	( )	( )	( )	( )

6. ON HOW MANY OCCASIONS (IF ANY) HAVE YOU USED COCAINE (COKE OR CRACK)									
In your lifetime?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the past 12 months?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 30 days?	( )	( )	( )	( )	( )	( )	( )	( )	( )

7. AMPHETAMINES ARE SOMETIMES PRESCRIBED BY DOCTORS TO HELP PEOPLE LOSE WEIGHT OR TO GIVE PEOPLE MORE ENERGY. THEY ARE SOMETIMES CALLED UPPERS, UPS, SPEED, CRYSTAL, CRANK, BENNIES, DEXIES, PEP PILLS, AND DIET PILLS. ON HOW MANY OCCASIONS (IF ANY) HAVE YOU TAKEN AMPHETAMINES ON YOUR OWN--THAT IS, WITHOUT A DOCTOR TELLING YOU TO TAKE THEM									
In your lifetime?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 12 months?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 30 days?	( )	( )	( )	( )	( )	( )	( )	( )	( )

(MARK ONE SPACE FOR EACH LINE).

	0	1-2	3-5	6-9	10-19	20-39	40-99	100-1000	>1000
4. ON HOW MANY OCCASIONS (IF ANY) HAVE YOU USED LSD (ACID)									
In your lifetime?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 12 months?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 30 days?	( )	( )	( )	( )	( )	( )	( )	( )	( )
5. ON HOW MANY OCCASIONS (IF ANY) HAVE YOU USED PSYCHEDELICS OTHER THAN LSD (LIKE MESCALINE, PEYOTE, PSILOCYBIN, PCP)									
In your lifetime?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 12 months?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 30 days?	( )	( )	( )	( )	( )	( )	( )	( )	( )
6. ON HOW MANY OCCASIONS (IF ANY) HAVE YOU USED COCAINE (COKE OR CRACK)									
In your lifetime?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the past 12 months?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 30 days?	( )	( )	( )	( )	( )	( )	( )	( )	( )
7. AMPHETAMINES ARE SOMETIMES PRESCRIBED BY DOCTORS TO HELP PEOPLE LOSE WEIGHT OR TO GIVE PEOPLE MORE ENERGY. THEY ARE SOMETIMES CALLED UPPERS, UPS, SPEED, CRYSTAL, CRANK, BENNIES, DEXIES, PEP PILLS, AND DIET PILLS.									
ON HOW MANY OCCASIONS (IF ANY) HAVE YOU TAKEN AMPHETAMINES ON YOUR OWN--THAT IS, WITHOUT A DOCTOR TELLING YOU TO TAKE THEM									
In your lifetime?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 12 months?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 30 days?	( )	( )	( )	( )	( )	( )	( )	( )	( )

(MARK ONE SPACE FOR EACH LINE).

8. ON HOW MANY OCCASIONS (IF ANY) HAVE YOU USED QUAALUDES (QUADS, SOAPERS, METHAQUALONE) ON YOUR OWN-- THAT IS, WITHOUT A DOCTOR TELLING YOU TO TAKE THEM	0	1-2	3-5	6-9	10-19	20-39	40-99	100-1000	>1000
In your lifetime?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 12 months?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 30 days?	( )	( )	( )	( )	( )	( )	( )	( )	( )

9.
BARBITURATES ARE SOMETIMES PRESCRIBED BY DOCTORS TO HELP PEOPLE RELAX OR GET TO SLEEP. THEY ARE SOMETIMES CALLED DOWNS, DOWNERS, GOOFBALLS, YELLOWS, REDS, BLUES, RAINBOWS.

ON HOW MANY OCCASIONS (IF ANY) HAVE YOU TAKEN BARBITURATES ON YOUR OWN -- THAT IS, WITHOUT A DOCTOR TELLING YOU TO TAKE THEM									
In your lifetime?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 12 months?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 30 days?	( )	( )	( )	( )	( )	( )	( )	( )	( )

10.
TRANQUILIZERS ARE SOMETIMES PRESCRIBED BY DOCTORS TO CALM PEOPLE DOWN, QUIET THEIR NERVES, OR RELAX THEIR MUSCLES. LIBRIUM VALIUM, AND MILTOWN ARE ALL TRANQUILIZERS.

ON HOW MANY OCCASIONS (IF ANY) HAVE YOU TAKEN TRANQUILIZERS ON YOUR OWN -- THAT IS, WITHOUT A DOCTOR TELLING YOU TO TAKE THEM									
In your lifetime?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 12 months?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 30 days?	( )	( )	( )	( )	( )	( )	( )	( )	( )

(MARK ONE SPACE FOR EACH LINE).

11.
ON HOW MANY OCCASIONS (IF ANY) HAVE YOU USED HEROIN (SMACK, HORSE, SKAG)

	0	1-2	3-5	6-9	10-19	20-39	40-99	100-1000	>1000
In your lifetime?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 12 months?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 30 days?	( )	( )	( )	( )	( )	( )	( )	( )	( )

12.
THERE ARE A NUMBER OF NARCOTICS OTHER THAN HEROIN, SUCH AS METHADONE, OPIUM, MORPHINE, CODEINE, DEMEROL, PAREGORIC, TALWIN, AND LAUDANUM. THESE ARE SOMETIMES PRESCRIBED BY DOCTORS.

ON HOW MANY OCCASIONS (IF ANY) HAVE YOU TAKEN NARCOTICS OTHER THAN HEROIN ON YOUR OWN--THAT IS, WITHOUT A DOCTOR TELLING YOU TO TAKE THEM

In your lifetime?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 12 months?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 30 days?	( )	( )	( )	( )	( )	( )	( )	( )	( )

13.
ON HOW MANY OCCASIONS (IF ANY) HAVE YOU SNIFFED GLUE, OR BREATHED THE CONTENTS OF AEROSOL SPRAY CANS, OR INHALED ANY OTHER GASES OR SPRAYS IN ORDER TO GET HIGH

In your lifetime?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 12 months?	( )	( )	( )	( )	( )	( )	( )	( )	( )
During the last 30 days?	( )	( )	( )	( )	( )	( )	( )	( )	( )

F. NOW SOME OTHER QUESTIONS ABOUT NONPRESCRIPTION USE OF DRUGS. HAVE YOU EVER HAD ANY OF THE FOLLOWING OUTCOMES BECAUSE OF YOUR USE OF THE NONPRESCRIPTION DRUGS ASKED ABOUT IN SECTION E (THE LAST SECTION)?

ANSWER KEY FOR QUESTIONS BELOW:

1 2 3-5 6-10 11-20 21-50 51-100 101-250 251-500 500+

	YES	NO	HOW MANY TIMES (approx) (see key)*	AGE first TIME	AGE most recent TIME
1. Missed school or time on job	____	____	_____	_____	_____
2. Lost friends	____	____	_____	_____	_____
3. Been divorced or separated	____	____	_____	_____	_____
4. Been fired or laid off	____	____	_____	_____	_____
5. Had a car accident when you were driving	____	____	_____	_____	_____
6. Had to go to a hospital (other than accidents)	____	____	_____	_____	_____
7. Had to stay in hospital overnight	____	____	_____	_____	_____
8. Had to see a doctor because of drug use (unintentional overdose) or had a doctor say drugs had harmed your health	____	____	_____	_____	_____
9. Gone through physical withdrawal from drugs	____	____	_____	_____	_____
10. Been arrested for possession or sale of drugs other than marijuana	____	____	_____	_____	_____

* SELECT YOUR ANSWER FROM KEY AT THE TOP OF THE PAGE

11a. Have you ever taken drugs intravenously (using a needle)? Don't count shots you were given by a doctor or nurse or shots you may have taken for treatment of diabetes.

_____NO _____YES

11b. IF YES, WHAT DRUGS HAVE YOU TAKEN INTRAVENOUSLY (IV)?

_____

11c. AT WHAT AGE DID YOU FIRST TAKE AN IV DRUG? _____ years old.

11d. AT WHAT AGE WAS THE MOST RECENT TIME? _____ years old.

APPENDIX B

Antisocial Behavior Inventory

APPENDIX B

Antisocial Behavior Inventory

Many of us have had adventures during our lives...times that were exciting and carefree, even though they may have been a bit impulsive or happy-go-lucky. Please read each of the following items. Indicate (with a check) if you have ever done any of the following activities and how often.

NEVER	-	You have never done this
RARELY	-	Once or twice in your life
SOMETIMES	-	Three (3) to nine (9) times in your life
OFTEN	-	More than ten (10) times in your life

NEVER	RARELY	SOMETIMES	OFTEN	
				1. Skipped school without a legitimate excuse for more than 5 days in one school year.
				2. Been suspended or expelled from school for fighting.
				3. Been suspended or expelled from school for reasons other than fighting.
				4. Lied to a teacher or principal.
				5. Cursed at a teacher or principal (to their face).
				6. Hit a teacher or principal.
				7. Repeated a grade in school.
				8. Taken part in a gang fight.
				9. "Beaten up" another person.
				10. Broken street lights, car windows, or car antennas just for the fun of it.

NEVER	RARELY	SOMETIMES	OFTEN	
				NEVER - You have never done this
				RARELY - Once or twice in your life
				SOMETIMES - Three (3) to nine (9) times in your life
				OFTEN - More than ten (10) times in your life
				11. Gone for a ride in a car someone else stole.
				12. Teased or killed an animal (like a dog or cat) just for the fun of it.
				13. Defied your parent's authority (to their face).
				14. Hit your parents.
				15. Cursed at your parents (to their face).
				16. Stayed out overnight without your parent's permission.
				17. Run away from home for more than 24 hours.
				18. Lied to your parents.
				19. Snatched a woman's purse.
				20. Rolled drunks just for the fun of it.
				21. Shoplifted merchandise valued over $25.
				22 Shoplifted merchandise valued under $25.
				23. Received a speeding ticket.
				24. Been questioned by the police.
				25. Taken part in a robbery.
				26. Taken part in a robbery involving physical force or a weapon.
				27. Been arrested for a felony.

NEVER	RARELY	SOMETIMES	OFTEN	
				NEVER - You have never done this
				RARELY - Once or twice in your life
				SOMETIMES - Three (3) to nine (9) times in your life
				OFTEN - More than ten (10) times in your life
				28. Resisted arrest.
				29. Been arrested for any other non-traffic police offenses (except fighting or a felony).
				30. Been convicted of any non-traffic police offense.
				31. Defaulted on a debt.
				32. Passed bad checks for the fun of it.
				33. Ever used an alias.
				34. Gone AWOL from the military.
				35. Received a bad conduct or undesirable discharge from the military.
				36. Performed sexual acts for money.
				37. Engaged in homsexual acts.
				38. Had intercourse with more than one person in a single day.
				39. "Fooled around" with other women/men after you were married.
				40. Hit your husband/wife during an argument.
				41. Lied to your spouse.
				42. Spent six months without any job or permanent home.
				43. Been fired for excessive absenteeism.
				44. Been fired for poor job performance (except absenteeism).
				45. Changed jobs more than 3 times in one year.
				46. Lied to your boss.

Thank you very much for your cooperation.

APPENDIX C

Child Health and Developmental History

APPENDIX C

Child Health and Development History

MICHIGAN STATE UNIVERSITY FAMILY STUDY

CHILD HEALTH AND DEVELOPMENT HISTORY
(4/92)

RESPONDENT NUMBER: _ _ _ _-_
TARGET: _ _ _ _
GIVEN BY: _____
DATE: __/__/__

T2.0 T3.0 T4.0

I. BACKGROUND INFORMATION

Target Child's First Name: *[_____]*

Q1. Child date of birth: ___/___/___

Q2. Child age: _____ Years, _____ Months

Q3. School Name:_____ School Grade:_____

Instructions: Please answer each question by circling the corresponding number, and filling in the appropriate information. When the question asks for age when an event occurred, write in the age of the child in years, and months. **(i.e. 12 year, 2 months)**

II. SERVICES, PROGRAMS

The next set of questions are concerning whether your child has ever been enrolled in any special program at school or received any special help.

Q1A. Has *[_____]* ever been in counseling?
(Child psychiatrist, pediatrician, psychologist, social worker, school psychologist/counselor, minister, others [specify])

1 . . . . . YES
2 . . . . . NO [GOTO Q1B]

Whom:_____

Age Started: _____ _____ to Age: _____ _____
Year Month Year Month

Q1B. Has *[_____]* ever been tutored?
(Teacher, other adult tutor, peer tutor, others [specify])

1 . . . . . YES
2 . . . . . NO [GOTO Q1C]

Whom:_____

Age Started: _____ _____ to Age: _____ _____
Year Month Year Month

Q1C. Has *[_____]* ever had speech therapy?
(Speech therapist, occupational therapist, other [specify])

1 . . . . . YES
2 . . . . . NO [GOTO Q1D]

Whom:_____

Age Started: _____ _____ to Age: _____ _____
Year Month Year Month

Q1D. Has *[_____]* ever had reading help?
(Special education teacher, regular teacher, learning center staff, other [specify])

1 . . . . . YES
2 . . . . . NO [GOTO Q1E]

Whom:_____

Age Started: _____ _____ to Age: _____ _____
Year Month Year Month

Q1E. Has *[_____]* ever had any other type of help?

1 . . . . . YES
2 . . . . . NO [GOTO **III**, Q1]

Service:_____

Whom:_____

Age Started: _____ _____ to Age: _____ _____
Year Month Year Month

III. OTHER INFORMATION

Q1. Does *[_____]* have a regular physician or a clinic he/she usually attends?

1 . . . . . YES
2 . . . . . NO [GOTO Q2]

_____
Physician's Name or Clinic's Name

Q2. Do you remember the date of *[_____]*'s **last** physical examination?

1 . . . . . YES
2 . . . . . NO [GOTO Q3]

____/____/____
(Month, day, year of last physical)

Q3. What is *[_____]*'s **current** height?

_____ ft. _____ ins.

Q4. What is *[_____]*'s **current** weight?

_____lbs.

IV. CHILD'S HEALTH

Q1. Has *[_____]* ever been on a medication program for hyperactivity for a period of time, such as ritalin or other medication?

1 . . . . . YES
2 . . . . . NO [GOTO Q2]

AGE STARTED: ____,____ TO AGE: ____,____
(Year, month) *(Year, month)*

Q2. Has *[_____]* ever been on a medication program for any other long term or chronic condition?

1 . . . . . YES
2 . . . . . NO [GOTO Q3a]

MEDICATION	AGE STARTED *(Year, month)*	TO AGE *(Year, month)*	REASON (CONDITION)
1._____	____,____	____,____	_____
2._____	____,____	____,____	_____
3._____	____,____	____,____	_____

The next set of questions deal with other medications *[_____]* has taken in the past **12 months**. If he/she has taken the medication, write in the brand of medication taken, **TOTAL** number of days he/she has taken the medication in the past 12 months, and the reason(s) for taking them. Use the following answer key for the number of days for questions Q3a through Q3l:

1 day	2 days	3-5 days	6-10 days	11-20 days	21-50 days	51-100 days	101-200 days	201-365 days

Q3a. Has *[_____]* taken any pain or fever relievers *(aspirin, Tylenol, etc.)* in the past 12 months?

1 . . . . . YES
2 . . . . . NO [GOTO Q3b]

MEDICATION *DAYS* *REASON (ILLNESS/CONDITION)*

Q3b. Has *[_____]* taken any cough medicine *(Robitussin, Pediacare, Triaminic, etc.)* in the past 12 months?

1 . . . . . YES
2 . . . . . NO [GOTO Q3c]

MEDICATION *DAYS* *REASON (ILLNESS/CONDITION)*

Q3c. Has *[_____]* taken any decongestants/nasal spray *(Sudafed, Dimetapp, Actifed, etc.)* in the past 12 months?

1 . . . . . YES
2 . . . . . NO [GOTO Q3d]

MEDICATION	*DAYS*	*REASON (ILLNESS/CONDITION)*

Q3d. Has *[_____]* taken any Antihistamines *(Chlortrimaton, Actifed, Benadryl, etc.)* in the past 12 months?

1 . . . . . YES
2 . . . . . NO [GOTO Q3e]

MEDICATION	*DAYS*	*REASON (ILLNESS/CONDITION)*

Q3e. Has *[_____]* taken any multisympton cold remedies *(Nyquil, Coridiidin, Cotylenol, etc.)* in the past 12 months?

1 . . . . . YES
2 . . . . . NO [GOTO Q3f]

MEDICATION	*DAYS*	*REASON (ILLNESS/CONDITION)*

Q3f. Has *[_____]* taken any antibiotics *(Penicillin, Amoxicillin, etc.)* in the past 12 months?

1 . . . . . YES
2 . . . . . NO [GOTO Q3g]

MEDICATION	*DAYS*	*REASON (ILLNESS/CONDITION)*

Q3g. Has *[_____]* taken any asthma medication in the past 12 months?

1 . . . . . YES
2 . . . . . NO [GOTO Q3h]

MEDICATION	*DAYS*	*REASON (ILLNESS/CONDITION)*

Q3h. Has *[_____]* taken any allergy medication in the past 12 months?

1 . . . . . YES
2 . . . . . NO [GOTO Q3i]

MEDICATION	*DAYS*	*REASON (ILLNESS/CONDITION)*

Q3i. Has *[_____]* taken any vitamins/dietary supplements in the past 12 months?

1 . . . . . YES
2 . . . . . NO [GOTO Q3j]

MEDICATION	*DAYS*	*REASON (ILLNESS/CONDITION)*

Q3j. Has *[_____]* taken any laxatives/enemas in the past 12 months?

1 . . . . . YES
2 . . . . . NO [GOTO Q3k]

MEDICATION	*DAYS*	*REASON (ILLNESS/CONDITION)*

Q3k. Has *[_____]* taken any antacids *(PeptoBismol, Milk of Magnesia, etc.)* past 12 months?

1 . . . . . YES
2 . . . . . NO [GOTO Q3l]

MEDICATION	*DAYS*	*REASON (ILLNESS/CONDITION)*

Q3l. Has *[_____]* taken any other medications in the past 12 months?

1 . . . . . YES
2 . . . . . NO [GOTO Q4]

MEDICATION	*DAYS*	*REASON (ILLNESS/CONDITION)*

Q4. Has *[_____]* ever been hospitalized?

1 . . . . . YES
2 . . . . . NO [GOTO Q5]

AGE IN.. *(years, months)*	REASON: OPERATION OR ILLNESS	# OF DAYS
a.____,____	_____	____
b.____,____	_____	____
c.____,____	_____	____
d.____,____	_____	____
e.____,____	_____	____

Q5. Has *[_____]* ever been in any accidents resulting in injury serious enough to require immediate medical treatment *(e.g., broken bones, concussion, stitches, burns, poisonings/accidental ingestion, etc.)*?

1 . . . . . YES
2 . . . . . NO [GOTO Q6]

AGE IN.. *(years, months)*	REASON: INJURY OR ACCIDENT	# OF DAYS
a.____,____	_____	____
b.____,____	_____	____
c.____,____	_____	____
d.____,____	_____	____
e.____,____	_____	____

Q6. What is the highest fever *[_____]* has had?

TEMPERATURE:_____ AGE: _____,_____
(years, months)

Q7. This question deals with possible diseases/ailments *[_____]* has had, or currently has. Please circle all the diseases/ailments *[_____]* has ever had.

(Circle All That Apply)

a. ASTHMA 1
b. MEASLES 1
c. MENINGITIS 1
d. GERMAN MEASLES (RUBELLA) 1
e. PNEUMONIA 1
f. HEART MURMUR 1
g. MUMPS 1
h. ENCEPHALITIS 1
i. SCARLET FEVER 1
j. RHEUMATIC FEVER 1
k. SEIZURES 1
l. CHICKEN POX 1
m. MONONUCLEOSIS 1
n. WHOPPING COUGH 1
o. POLIO 1
p. DIABETES MELLITUS 1
q. CYSTIC FIBROSIS 1
r. DEVELOPMENTAL DISABILITIES 1
s. MUSCULAR DYSTROPHY 1
t. CEREBRAL PALSY 1
u. ATTENTION DEFICIT 1
v. LEARNING DISABILITY 1
w. **NONE OF THE ABOVE 1**

Q8. Does *[_____]* have any allergies?

1 . . . . . YES
2 . . . . . NO [GOTO Q9]

Please specify anything *[_____]* is allergic to *(including pollen, drugs, food, hay fever, sinus trouble, animals, etc.)*

a._____ b._____

c._____ d._____

Q9. Has *[_____]* had **recurrent** ear infections?

1 . . . . . YES
2 . . . . . NO [GOTO Q10]

AGE STARTED:____, ____ to AGE OF RECURRENCE:____, ____
(year, month) *(year, month)*

Q9a. Was ear surgery required?

1 . . . . . YES
2 . . . . . NO [GOTO Q10]

AGE WHEN EAR SURGERY OCCURRED: ____,____
(year, month)

Q10. How many times (instances) has *[_____]* been sick with common illnesses in the last 12 months? *(colds, flu, sore throats, etc.)* Please check the number below that best approximates how many times *[_____]* has been sick with common illnesses.

(Circle One)

a. NEVER 0
b. 1 DAY 1
c. 2 DAYS 2
d. 3-5 DAYS 3
e. 6-10 DAYS 4
f. 11-20 DAYS 5
g. 21-50 DAYS 6

Q11. Has *[_____]* had any <u>uncommon</u> childhood illnesses?

1 . . . . . YES
2 . . . . . NO [GOTO Q12]

ILLNESSES
a._____ b._____ c._____

Q12. Has *[_____]* received any of the following immunizations? *(Circle all that apply)*

DPT 1	1	POLIO 1	1	MUMPS	1
DPT 2	1	POLIO 2	1	RUBELLA	1
DPT 3	1	POLIO BOOSTER 1	1	COMBINATION	
DPT BOOSTER 1	1	POLIO BOOSTER 2	1	MEASLES/MUMPS/RUBELLA .	1
DPT BOOSTER 2	1	MEASLES	1	HIB	1
				OTHER	1
				Specify_____	

Q13. If your child had any serious reactions to any of the immunizations list the appropriate ones.

1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____

V. SLEEP BEHAVIOR

Q1. Please describe *[_____]*'s sleep behavior in the last year:

a. Usually asleep by _____ P.M.
b. Usually awake by _____ A.M.

Q2. For each item, circle the number that best describes *[_____]*.

	NEVER	SOMETIME	OFTEN	VERY OFTEN
a. EASILY FATIGUED	0	1	2	3
b. SLEEP UNUSUALLY SOUNDLY	0	1	2	3
c. TROUBLE GETTING TO SLEEP	0	1	2	3
d. HAS TO SLEEP IN PARENTAL BED	0	1	2	3
e. RESTLESS, TOSSES A LOT	0	1	2	3
f. FALLS OUT OF BED	0	1	2	3
g. SWEATS IN SLEEP	0	1	2	3
h. TALKS, LAUGHS OR CRIES IN SLEEP	0	1	2	3
i. GRINDS TEETH IN SLEEP	0	1	2	3
j. SNORES	0	1	2	3
k. SLEEPWALKS OR WANDERS AT NIGHT	0	1	2	3
l. PECULIAR POSITIONS IN SLEEP	0	1	2	3
m. NIGHTMARES	0	1	2	3
n. NIGHT TERRORS *(CHILD HAS BAD DREAMS BUT CANNOT WAKE UP TO TELL WHAT IS THE MATTER, DOES NOT REMEMBER IN THE MORNING)*	0	1	2	3

VI. TOILETING

Q1. At what age was *[_____]* completely toilet trained?

a. For urination:

DAY: ____, _____ NIGHT ____, _____
(year, month) *(year, month)*

b. For bowels:

DAY: ____, _____ NIGHT ____, _____
(year, month) *(year, month)*

Q2. Has *[_____]* experienced bed wetting or day time wetting accidents since toilet training was completed?

1 . . . . . YES [GOTO Q2a]
2 . . . . . NO [GOTO Q3]

Q2a. What type of accidents?

(Circle One)

Day time wetting 1
Bed wetting 2
Both 3

Q2b. What age did these accidents start?

____, _____ *year, month*

Q2c. How often?

(Circle One)

Every night 1
1 or 2 times a week 2
1 or 2 times a month 3
Less than once a month, but at least once a year 4

Q2d. Does *[_____]* still have accidents?

1 . . . . . YES [GOTO Q3]
2 . . . . . NO [GOTO Q2e]

Q2e. Age controlled?

____, _____ *year, month*

Q3. Has *[_____]* experienced soiling accidents since he completed toileting training?

1 . . . . . YES [GOTO Q3a]
2 . . . . . NO [GOTO VII, Q1]

Q3a. What type of accidents?

(Circle One)
Day time soiling 1
Night time soiling 2
Both 3

Q3b. What age did these accidents start?

____, _____
year, month

Q3c. How often?

(Circle One)
Every night 1
1 or 2 times a week 2
1 or 2 times a month 3
Less than once a month,
but at least once a year 4

Q3d. Does *[_____]* still have accidents?

1 . . . . . YES [GOTO VII, Q1]
2 . . . . . NO [GOTO Q3e]

Q3e. Age controlled?

____, _____
year, month

VII. HEARING

Q1. Has *[_____]* hearing ever been evaluated?

1 . . . . . YES
2 . . . . . NO [GOTO Q2]

a. What age? _____

b. By Whom? _____
(Audiologist, family doctor, other)

c. Results? _____
(Normal, some hearing loss, etc.)

Q2. Have you ever wondered if *[_____]* can hear properly?

1 . . . . . YES
2 . . . . . NO

Q3. Does *[_____]* have difficulty understanding or remembering instructions?

1 . . . . . YES
2 . . . . . NO

Q4. Is *[_____]*'s hearing too sharp, or hears every little thing?

1 . . . . . YES
2 . . . . . NO

Q5. Is *[_____]* easily irritated by noise?

1 . . . . . YES
2 . . . . . NO

VIII. VISION

Q1. Has *[_____]*'s vision ever been checked?

1 . . . . . YES
2 . . . . . NO [GOTO, Q2]

a. When? _____, ____ (Month, year)

b. By Whom? _____
(Ophthalmologist [MD], Optometrist [O.D.])

c. Results? _____
(Normal, near sighted, far sighted, etc.)

Q2. Does *[_____]* wear glasses or contact lenses?

1 . . . . . YES
2 . . . . . NO [GOTO Q3]

Q3. Do *[_____]*'s eyes deviate (turn inward, upward, etc.)?

1 . . . . . YES
2 . . . . . NO [GOTO Q4]

_____
(Please Describe)

Q4. Are there any other symptoms of eye problems *(red eyes, excessive rubbing, inflamed, etc.)*?

1 . . . . . YES
2 . . . . . NO [GOTO Q5]

_____
(Please Describe)

Q5. Do any other aspects *[_____]*'s visual behavior concern you?

1 . . . . . YES
2 . . . . . NO [GOTO IX]

_____
(Please Describe)

IX. DENTAL HEALTH

Q1. Does *[_____]* take fluoride daily?

1 . . . . . YES
2 . . . . . NO

Q2. Does *[_____]* have any tooth problems?

1 . . . . . YES
2 . . . . . NO

Q3. Has *[_____]* been to the dentist?

1 . . . . . YES
2 . . . . . NO

Age at last visit: ____, _____
year, month

LIST OF REFERENCES

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Achenbach, T. (1991). Manual for the Child Behavior Checklist / 4-18 and 1991 Profile. Burlington, VT: University of Vermont Department of Psychiatry.

Achenbach, T., & Edelbrock, C. (1983). Manual for the child behavior checklist and revised child behavior profile. Burlington, VT: University Associates in Psychiatry.

Alterman, A. I., Bridges, K. R., & Tarter, R. E. (1986). Drinking behavior of high-risk college men: Contradictory preliminary findings. Alcoholism: Clinical and Experimental Research, 10, 1-6.

Alterman, A. I., Searles, J. S., & Hall, J. G. (1989). Failure to find differences in drinking behavior as a function of familial risk for alcoholism: A replication. Journal of Abnormal Psychology, 98, 50-53.

American Psychiatric Association. (1980). Diagnostic and Statistical Manual, (3rd Ed.). Washington DC: Author.

American Psychiatric Association. (1987). Diagnostic and Statistical Manual, (3rd Ed.-Revised). Washington DC: Author.

American Psychiatric Association. (1994). Diagnostic and Statistical Manual, (4th Ed.). Washington DC: Author.

Anderson, E., & Quast, W. (1983). Young children in alcoholic families: A mental health needs-assessment and an intervention/prevention strategy. Journal of Primary Prevention, 3, 174-187.

Aronson, H., & Gilbert, A. (1963). Preadolescent sons of male alcoholics: An experimental study of personality patterning. Archives of General Psychiatry, 38, 235-241.

Aronson, M., Kyllerman, M., Sabel, K. G., Sandin, B., & Olegard, R. (1985). Children of alcoholic mothers: Developmental, perceptual, and behavioral characteristics as compared to matched controls. Acta Paediatrica Scandinavia, 74, 27-35.

Babor, T. F., Hoffmann, M., DelBoca, F. K., Hesselbrock, V., Meyer, R. E., Dolinsky, Z. S., & Rounsaville, B. (1992). Types of alcoholics: I. Evidence for an empirically derived typology based on indicators of vulnerability and severity. Archives of General Psychiatry, 49, 599-608.

Babor, T. F., & Lauerman, R. J. (1986). Classification and forms of inebriety: Historical antecedents of alcohol typologies. In M. Galanter (Ed.), Recent developments in alcoholism (Vol. 4, pp. 113-144). New York: Plenum Press.

Babor, T. F., & Meyer, R. E. (1986). Overview: Typologies of alcoholics. In M. Galanter, (Ed.), Recent developments in alcoholism (Vol. 4. pp 105-111). New York: Plenum Press.

Bell, B., & Cohen, R. (1981). The Bristol Social Adjustment Guide: Comparison between the offspring of alcoholic and non-alcoholic mothers. British Journal of Clinical Psychology, 20, 93-95.

Bennett, L. A., Wolin, S. J., & Reiss, D. (1988). Cognitive, behavioral, and emotional problems among school-age children of alcoholic parents. American Journal of Psychiatry, 145, 185-190.

Berkowitz, A., & Perkins, H. W. (1988). Personality characteristics of children of alcoholics. Journal of Consulting and Clinical Psychology, 56, 206-209.

Biek, J. (1981). Screening test for identifying adolescents adversely affected by a parental drinking problem. Journal of Adolescent Health Care, 2, 107-113.

Bingham, C. R., & Crockett, L. J. (in press). Longitudinal adjustment patterns of boys and girls experiencing early, middle, and late sexual intercourse. Developmental Psychology.

Bingham, C. R., Fitzgerald, B., Fitzgerald, H. E., & Zucker, R. A. (1996, June). Prenatal History, Parental Alcoholism, and the Development of Preschool-Aged Sons of Alcoholics. Poster session to be presented at the annual meeting of the Research Society on Alcoholism, Washington, DC.

Bingham, C. R., Zucker, R. A., & Fitzgerald, H. E. (1996). Risk Load Variation and Problem Behavior Development across the Preschool and Early School Years among Sons of Alcoholics. Unpublished manuscript, Michigan State University, East Lansing, MI.

Bohman, M., Sigvardsson, S., & Cloninger, C. (1981). Maternal inheritance of alcohol abuse: Cross-fostering analysis of adopted women. Archives of General Psychiatry, 38, 965-969.

Brook, J. S., Whiteman, M., Gordon, A. S., & Cohen, P. (1986a). Dynamics of childhood and adolescent personality traits and adolescent drug use. Developmental Psychology, 22, 403-414.

Brook, J. S., Whiteman, M., Gordon, A. S., & Cohen, P. (1986b). Some models and mechanisms for explaining the impact of maternal and adolescent characteristics on adolescent stage of drug use. Developmental Psychology, 22, 460-467.

Brook, J. S., Whiteman, M., Gordon, A. S., & Cohen, P. (1989). Changes in drug involvement: A longitudinal study of childhood and adolescent determinants. Psychological Reports, 65, 707-726.

Brown, J., Babor, T. F., Litt, M. D., & Kranzler, H. R. (1994). The Type A/ Type B distinction: Subtyping alcoholics according to the indicators of vulnerability and severity. In T. F. Babor, V. Hesselbrock, R. E., Meyer, & W. Shoemaker (Eds.), Types of alcoholics: Evidence from clinical, experimental, and genetic research (pp. 23-33). New York: The New York Academy of Sciences.

Cantwell, D. P. (1972). Psychiatric illness in the families of hyperactive children. Archives of General Psychiatry, 27, 414-417.

Chafetz, M., Blane, H., & Hill, M. (1971). Children of alcoholics. Quarterly Journal of Studies on Alcohol, 32, 687-698.

Chassin, L., Rogosch, F., & Barrera, M. (1991). Substance use and symptomatology among adolescent children of alcoholics. Journal of Abnormal Psychology, 100, 449-463.

Churchill, J. C., Broida, J. P., & Nicholson, N. (1990). Locus of control and self-esteem of adult children of alcoholics. Journal of Studies on Alcohol, 51, 373-376.

Cloninger, C. R., Bohman, M., & Sigvardsson, S. (1981). Inheritance of alcohol abuse. Archives of General Psychiatry, 38, 861-868.

Conrad, M., & Hammen, C. (1989). Role of maternal depression in perceptions of child maladjustment. Journal of Consulting and Clinical Psychology, 57, 663-667.

Cotton, N. (1979). The familial incidence of alcoholism: A review. Journal of Studies on Alcohol, 40, 89-116.

Drejer, K., Theilgaard, A., Teasdale, T. W., Schulsinger, F., & Goodwin, W. (1985). A prospective study of young men at high risk for alcoholism: Neuropsychological assessment. Alcoholism: Clinical and Experimental Research, 9, 498-502.

Earls, F. J. (1987). On the familial transmission of child psychiatric disorder. Journal of Child Psychology, Psychiatry, and Allied Disciplines, 28, 791-802.

El-Guebaly, N., & Offord, D. R., (1977). The offspring of alcoholics: A critical review. American Journal of Psychiatry, 134, 357-365.

Ellis, D. A. (1992). Typological differences in patterns of risk among young children of alcoholics. Unpublished Dissertation, Michigan State University.

Ellis, D. A., Bingham, C. R., Zucker, R. A., & Fitzgerald, H. E. (1996). Typological Differences in Patterns of Risk Load and Child Adaptation among Young Alcoholic Families. Manuscript submitted for publication.

Ervin, C., Little, R., Streissguth, A., & Beck, D. (1984). Alcoholic fathering and its relation to child's intellectual development: A pilot investigation. Alcoholism: Clinical and Experimental Research, 8, 362-365.

Feighner, J., Robins, E., Guze, S., Woodruff, R., Winokur, G., & Munoz, R. (1972). Diagnostic criteria for use in psychiatric research. Archives of General Psychiatry, 26, 57-63.

Fine, E., Yudin, L., Holmes, J., & Heinemann, S. (1976). Behavioral disorders in children with parental alcoholism. Annals of the New York Academy of Science, 273, 507-517.

Finn, P. R., & Pihl, R. O. (1987). Men at high risk for alcoholism: The effect of alcohol on cardiovascular response to unavoidable shock. Journal of Abnormal Psychology, 96, 230-236.

Finn, P. R., & Pihl, R. O. (1988). Risk for alcoholism: A comparison between two different groups of sons of alcoholics on cardiovascular reactivity and sensitivity to alcohol. Alcoholism: Clinical and Experimental Research, 12, 742-747.

Fitzgerald, H. E., Jones, M. A., Maguin, E., Zucker, R. A., & Noll, R. B. (1991). Assessing parental antisocial behavior in alcoholic and nonalcoholic families. Unpublished manuscript, Michigan State University, East Lansing, MI.

Fitzgerald, H. E., Sullivan, L. A., Ham, H. P., Zucker, R. A., Bruckel, S., Schneider, A. M., & Noll, R. B. (1993). Predictors of behavior problems in three-year-old sons of alcoholics: Early evidence for the onset of risk. Child Development, 64, 110-123.

Gabrielli, W., & Mednick, S. (1983). Intellectual performance in children of alcoholics. Journal of Nervous and Mental Disease, 171, 444-447.

Glenn, S. W., & Nixon, S. J. (1991). Application of Cloninger's subtypes in a female alcoholic sample. Alcoholism: Clinical and Experimental Research, 15, 851-857.

Gomberg, E. S. L., & Nirenberg, T. D. (1993). Antecedents and consequences. In E. S. L. Gomberg & T. D. Nirenberg (Eds.), Women and substance abuse (pp. 118-141). New Jersey: Ablex Publishing.

Goodwin, D. W., Schulsinger, F., Hermansen, L., Guze, S. B., & Winokur, G. (1975). Alcoholism and the hyperactive child syndrome. Journal of Nervous and Mental Disease, 160, 349-353.

Grant, B. F., Harford, T. C., Dawson, D. A., Chou, P., Dufour, M., & Pickering, R. (1994). Prevalence of DSM-IV alcohol abuse and dependence: United States, 1992. Alcohol Health and Research World, 18, 243-248.

Harter, S. (1982). The Perceived Competence Scale for Children. Child Development, 53, 87-97.

Ham, H. P., Fitzgerald, H. E., & Zucker, R. A. (1993, June). Recent evidence of behavioral dysregulation in sons of male alcoholics. Paper presented at Research Society on Alcoholism Scientific Conference, San Antonio, TX.

Hegedus, A. M., Alterman, A. I., & Tarter, R. E. (1984). Learning achievement in sons of alcoholics. Alcoholism: Clinical and Experimental Research, 8, 330-333.

Helzer, J. E. (1987). Epidemiology of alcoholism. Journal of Consulting and Clinical Psychology, 55, 284-292.

Herjanic, B., Herjanic, M., Penick, E., Tomelleri, C., & Armbruster, R. (1977). Children of alcoholics. In F. A. Seixas (Ed.), Currents in alcoholism (Vol. 2, pp. 445-455). New York: Grune & Stratton.

Herjanic, B., Herjanic, M., Wetzel, R., & Tomelleri, C. (1978). Substance abuse: Its effect on offspring. Research Communications in Psychology, Psychiatry and Behavior, 3, 65-75.

Hesselbrock, M. N. (1986). Alcohol typologies: A review of empirical evaluations of common classification schemes. In M. Galanter (Ed.), Recent developments in alcoholism (Vol. 4, pp. 191-206). New York: Plenum Press.

Hesselbrock, M. N., & Hesselbrock, V. M. (1993). Depression and antisocial personality disorder in alcoholism: Gender comparison. In E. S. L. Gomberg & T. D. Nirenberg (Eds.), Women and substance abuse (pp. 142-161). New Jersey: Ablex Publishing.

Hesselbrock, M. N., Hesselbrock, V. M., Babor, T. F., Stabenau, J. R., Meyer, R. E., & Weidenman, M. (1984). Antisocial behavior, psychopathology and problem drinking in the natural history of alcoholism. In D. W. Goodwin, K. T. Van Dusen, & S. A. Mednick (Eds.), Longitudinal research in alcoholism (pp. 197-214). Boston: Kluwer-Nijhoff Publishing.

Hesselbrock, V., Bauer, L. O., Hesselbrock, M. N., & Gillen, R. (1991). Neuropsychological factors in individuals at high risk for alcoholism. In M. Galanter (Ed.), Recent developments in alcoholism (Vol. 9, pp. 21-40). New York: Plenum Press.

Hill, S. Y. (1993). Genetic vulnerability to alcoholism in women. In E. S. L. Gomberg & T. D. Nirenberg (Eds.), Women and substance abuse (pp. 42-61). New Jersey: Ablex Publishing.

Hinshaw, S. (1987). On the distinction between attentional deficits/hyperactivity and conduct problems/aggression in child psychopathology. Psychological Bulletin, 101, 443-463.

Hughes, J. M. (1977). Adolescent children of alcoholic parents and the relationship of Alateen to these children. Journal of Consulting and Clinical Psychology, 45, 946-947.

Jacob, T., & Leonard, K. (1986). Psychosocial functioning in children of alcoholic fathers, depressed fathers, and control fathers. Journal of Studies on Alcohol, 47, 373-380.

Jastak, S., & Wilkinson, G. S. (1984). The Wide Range Achievement Test - revised: Administration manual. Wilmington, DE: Jastak Associates.

Jellinek, E., M. (1960). The disease concept of alcoholism. New Haven, CT: Hillhouse Press.

Johnson, J. L., & Rolf, J. E. (1988). Cognitive functioning in children from alcoholic and non-alcoholic families. British Journal of Addiction, 83, 849-857.

Jones, M. C. (1968). Personality correlates and antecedents of drinking patterns in adult males. Journal of Consulting and Clinical Psychology, 32, 2-12.

Joreskog, K. G., & Sorbom, D. (1993). LISREL 8.1: User's Reference Guide. Chicago: Scientific Software International.

Kern, J., Hassett, C., Collipp, P., Bridges, C., Solomon, M., & Condren, R. (1981). Children of alcoholics: Locus of control, mental age, and zinc level. Journal of Psychiatric Treatment and Evaluation, 3, 169-173.

Knop, J., Teasdale, T. W., Schulsinger, F., & Goodwin, D. W. (1985). A prospective study of young men at high risk for alcoholism: School behavior and achievement. Journal of Studies on Alcohol, 46, 273-278.

Knowles, E., & Shroeder, D. A. (1989). Familial and personality correlates of alcohol-related problems. Addictive Behaviors, 14, 537-543.

Lahey, B. B., & Loeber, R. (1994). Framework for a developmental model of oppositional defiant disorder and conduct disorder. In D. K. Routh (Ed.), Disruptive behavior disorders in childhood (pp. 139-180). New York: Plenum Press.

Lex, B. W., Sholar, J. W., Bower, T., & Mendelson, J. H. (1991). Putative type II alcoholism characteristics in female third DUI offenders in Massachusetts: A pilot study. Alcohol, 8, 283-287.

Litt, M. D., Babor, T. F., DelBoca, F. K., Kadden, R. M., & Cooney, N. L. (1992). Types of alcoholics, II: Application of an empirically derived typology to treatment matching. Archives of General Psychiatry, 49, 609-614.

Loper, R. G., Kammeier, M. L., & Hoffmann, H. (1973). MMPI characteristics of college freshmen who later became alcoholics. Journal of Abnormal Psychology, 82, 159-162.

Lund, C., & Landesman-Dwyer, S. (1979). Pre-delinquent and disturbed adolescents: The role of parental alcoholism. In M. Galanter (Ed.), Currents in alcoholism (Vol. 5, pp. 338-348). New York: Grune & Stratton.

MacAndrew, C. (1965). The differentiation of male alcoholic outpatients from nonalcoholic psychiatric outpatients by means of the MMPI. Quarterly Journal of Studies on Alcohol, 26, 238-246.

Mann, L. M., Chassin, L., & Sher, K. J. (1987). Alcohol expectancies and the risk for alcoholism. Journal of Consulting and Clinical Psychology, 55, 411-417.

Marcus, A. M. (1986). Academic achievement in elementary school children of alcoholic mothers. Journal of Clinical Psychology, 42, 372-376.

McCord, W., & McCord, J. (1960). Origins of alcoholism. Stanford, CA: Stanford University Press.

McKenna, T., & Pickens, R. (1983). Personality characteristics of alcoholic children of alcoholics. Journal of Studies on Alcohol, 44, 688-700.

Merikangas, K. R., Weissman, M. M., Prusoff, B. A., Pauls, D. L., & Leckman, J. F. (1985). Depressives with secondary alcoholism: Psychiatric disorders in offspring. Journal of Studies on Alcohol, 46, 199-204.

Miller, D., & Jang, M. (1977). Children of alcoholics: A 20-year longitudinal study. Social Work Research and Abstracts, 13 (4), 23-29.

Moos, R. H., & Billings, A. G. (1982). Children of alcoholics during the recovery process: Alcoholic and matched control families. Addictive Behaviors, 7, 155-163.

Morrison, J. R., & Stewart, M. A. (1971). A family study of the hyperactive child syndrome. Biological Psychiatry, 3, 189-195.

Mueller, C. W., & Parcel, T. L. (1981). Measures of socioeconomic status: Alternatives and recommendations. Child Development, 52, 13-30.

Murphy, R. T., O'Farrell, T. J., Floyd, F. J., & Connors, G. J. (1991). School adjustment of children of alcoholic fathers: Comparison to normal controls. Addictive Behaviors, 16, 275-287.

Noll, R. B., & Zucker, R. A. (1980). The structure of antisocial behavior in different populations. Unpublished manuscript, Michigan State University, East Lansing, MI.

Noll, R. B., Zucker, R. A., Fitzgerald, H. E., & Curtis, W. J. (1992). Cognitive and motoric functioning of sons of alcoholic fathers and controls: The early childhood years. Developmental Psychology, 28, 665-675.

Offord, D., Allen, N., & Abrams, N. (1978). Parental psychiatric illness, broken bones, and delinquency. Journal of the American Academy of Child Psychiatry, 17, 224-238.

Pihl, R. O., Peterson, J., & Finn, P. (1990). Inherited predisposition to alcoholism: Characteristics of sons of male alcoholics. Journal of Abnormal Psychology, 99, 291-301.

Prewett, M., Spence, R., & Chaknis, M. (1981). Attribution of causality by children with alcoholic parents. International Journal of Addictions, 16, 367-370.

Richters, J., & Pellegrini, D. (1989). Depressed mother's judgements about their children: An examination of the depression-distortion hypothesis. Child Development, 60, 1068-1075.

Rimmer, J. (1982). The children of alcoholics: An exploratory study. Children and Youth Services Review, 4, 365-373.

Roberts, K., & Brent, E. (1982). Physician utilization and illness patterns in families of alcoholics. Journal of Studies on Alcohol, 43, 119-128.

Robins, L. N. (1986). The consequences of conduct disorder in girls. In D. Olweus, J. Block, & M. Radke-Yarrow (Eds.), Development of antisocial and prosocial behavior (pp. 385-414). New York: Academic Press.

Robins, L., Helzer, J., Croughan, J., & Ratcliff, K. S. (1980). The NIMH Diagnostic Interview Schedule: Its history, characteristics and validity. St. Louis, MO: Washington University School of Medicine.

Robins, L., West, P., Ratcliff, K., & Herjanic, B. (1978). Father's alcoholism and children's outcomes. In F. A. Seixas (Ed.), Currents in alcoholism (Vol. 4, pp. 313-327). New York: Grune & Stratton.

Rolf, J. E., Johnson, J. L., Israel, E., Baldwin, J., & Chandra, A. (1988). Depressive affect in school-aged children of alcoholics. British Journal of Addiction, 83, 841-848.

Roosa, M. W., Sandler, I. N., Beals, J., & Short, J. L. (1988). Risk status of adolescent children of problem drinking parents. American Journal of Community Psychology, 16, 225-239.

Rubio-Stipec, M., Bird, H., Canino, G., Bravo, M., & Alegria, M. (1991). Children of alcoholic parents in the community. Journal of Studies on Alcohol, 52, 78-88.

Russell, M., Henderson, C., & Blume, S. (1985). Children of alcoholics: A review of the literature. New York: Children of Alcoholics Foundation.

Rydelius, P. (1983). Alcohol-using teenage boys. Acta Psychiatrica Scandinavia, 68, 368-380.

Sattler, J. M. (1982). Assessment of Children's Intelligence and Special Abilities (2nd Edition). Boston: Allyn & Bacon, Inc.

Saunders, G. R., & Schuckit, M. A. (1981). MMPI scores in young men with alcoholic relatives and controls. Journal of Nervous and Mental Disease, 169, 456-458.

Schuckit, M. A. (1982). Anxiety and assertiveness in sons of alcoholics and control. Journal of Clinical Psychiatry, 43, 238-239.

Schuckit, M. A., & Chiles, J. (1978). Family history as a diagnostic aid in two samples of adolescents. Journal of Nervous and Mental Disease, 166, 165-176.

Schulsinger, F., Knop, J., Goodwin, D. W., Teasdale, T. W., & Mikkelson, U. (1986). A prospective study of young men at high risk for alcoholism: Social and psychological characteristics. Archives of General Psychiatry, 93, 755-760.

Searles, J. S., & Windle, M. (1990). Introduction and Overview: Salient issues in the children of alcoholics literature. In M. Windle & J. S. Searles (Eds.), Children of Alcoholics: Critical Perspectives. New York: The Guilford Press (pp. 1-8).

Seilhamer, R. A., & Jacob, T. (1990). Family factors and adjustment of children of alcoholics. In M. Windle & J. S. Searles (Eds.), Children of alcoholics: Critical perspectives (pp.168-186). New York: Guilford Press.

Selzer, M. L., Vinokur, A., & Van Rooijen, L. (1975). A self-administered short Michigan alcoholism screening test (SMAST). Journal of Studies on Alcohol, 36, 117-126.

Sher, K. J. (1991). Children of alcoholics: A critical appraisal of theory and research. Chicago: The Univ of Chicago Press.

Sher, K. J., Walitzer, K. S., Wood, P. K., & Brent, E. E. (1991). Characteristics of children of alcoholics: Putative risk factors, substance use and abuse, and psychopathology. Journal of Abnormal Psychology, 100, 427-448.

Steinhausen, H., Gobel, D., & Nestler, V. (1984). Psychopathology in the offspring of alcoholic parents. Journal of the American Academy of Child Psychiatry, 23, 465-471.

Steinhausen, H., Nestler, V., & Huth, H. (1982). Psychopathology and mental functions in the offspring of alcoholic and epileptic mothers. Journal of the American Academy of Child Psychiatry, 21, 268-273.

Stevens, G., & Featherman, D. L. (1981). A revised socioeconomic index of occupational status. Social Science Research, 10, 364-395.

Stewart, M., deBlois, S., & Cummings, C. (1980). Psychiatric disorder in the parents of hyperactive boys and those with conduct disorder. Journal of Child Psychology, Psychiatry, and Allied Disciplines, 21, 283-292.

Stewart, M., deBlois, S., & Singer, S. (1979). Alcoholism and hyperactivity revisited: A preliminary report. In M. Galanter (Ed.), Currents in alcoholism (Vol. 5, pp. 349-357).

Streissguth, A. P. (1976). Psychologic handicaps in children with the fetal alcohol syndrome. Annals of the New York Academy of Sciences, 273, 140-145.

Streissguth, A. P., Little, R. E., Herman, C., & Woodell, S. (1979). IQ in children of recovered alcoholic mothers compared to matched controls. Alcoholism: Clinical and Experimental Research, 3, 197.

Tarter, R., Hegedus, A., Goldstein, G., Shelly, C., & Alterman, A. (1984). Adolescent sons of alcoholics: Neuropsychological and personality characteristics. Alcoholism: Clinical and Experimental Research, 8, 216-222.

Tarter, R. E., Jacob, T., & Bremer, D. A. (1989). Cognitive status of sons of alcoholic men. Alcoholism: Clinical and Experimental Research, 13, 232-235.

Terman, L. M., & Merrill, M. A. (1973). Stanford-Binet Intelligence Scale: Manual for the third revision (Form L-M). Boston: Houghton Mifflin Co.

U.S. Department of Health and Human Services (1993). Eighth Special Report to the U.S. Congress on Alcohol and Health. Washington, DC: Author.

Vaillant, G. (1983). The natural history of alcoholism. Cambridge, MA: Harvard University Press.

Wechsler, D. (1974). Wechsler Intelligence Scale for Children - revised. New York: The Psychological Corporation.

Werner, E., E. (1986). Resilient offspring of alcoholics: A longitudinal study from birth to age 18. Journal of Studies on Alcohol, 47, 34-40.

West, M. O., & Prinz, R. J. (1987). Parental alcoholism and childhood psychopathology. Psychological Bulletin, 102, 204-218.

Wilsnack, S. C., & Wilsnack, R. W. (1993). Epidemiological research on women's drinking: Recent progress and directions for the 1990s. In E. S. L. Gomberg & T. D. Nirenberg (Eds.), Women and substance abuse (pp. 62-99). New Jersey: Ablex Publishing.

Wilson, J. R., & Nagoshi, C. T. (1988). Adult children of alcoholics: Cognitive and psychomotor characteristics. British Journal of Addiction, 83, 809-820.

Windle, M. (1990). Temperament and personality attributes of children of alcoholics. In M. Windle & J. S. Searles (Eds.), Children of alcoholics: Critical perspectives (pp. 129-167). New York: The Guilford Press.

Windle, M., & Searles, J. S. (1990). Children of alcoholics: Critical perspectives. New York: The Guilford Press.

Zucker, R. A. (1987). The four alcoholisms: A developmental account of the etiologic process. In P. C. Rivers (Ed.), Nebraska symposium on motivation: Alcohol and addictive behavior (Volume 34, pp.27-83). Lincoln: Univ. of Nebraska Press.

Zucker, R. A. (1994). Pathways to alcohol problems and alcoholism: A developmental account of the evidence for multiple alcoholisms and for contextual contributions to risk. In R. A. Zucker, J. Howard, & Boyd, G. M. (Eds.), The development of alcohol problems: Exploring the biopsychosocial matrix of risk (Research Monograph No. 26, pp. 225-289). Rockville, MD: National Institute on Alcohol Abuse and Alcoholism.

Zucker, R. A., & Barron, F. H. (1973). Parental behaviors associated with problem drinking and antisocial behavior among adolescent males. In M. E. Chafetz (Ed.), Research on alcoholism: I. Clinical problems and special populations (DHEW Publication No. 74-675, pp. 276-296). Washington, DC: Government Printing Office.

Zucker, R. A., Ellis, D. A., Bingham, C. R., & Fitzgerald, H. E. (in press). The development of alcoholic sybtypes: Risk variation among alcoholic families during the early childhood years. Alcohol, Health, and Research World.

Zucker, R. A., Ellis, D. A., & Fitzgerald, H. E. (1994a). Developmental evidence for at least two alcoholisms: I. Biopsychosocial variation among pathways into symptomatic difficulty. In T. F. Babor, V. Hesselbrock, R. E. Meyer, & W. Shoemaker (Eds.), Types of alcoholics: Evidence from clinical, experimental, and genetic research (pp. 134-146). New York: The New York Academy of Sciences.

Zucker, R. A., Ellis, D. A., & Fitzgerald, H. E. (1994b). Other evidence for at least two alcoholisms: II. The case for lifetime antisociality as a basis of differentiation. Manuscript submitted for publication.

Zucker, R. A., Ellis, D. A., Fitzgerald, H. E., Bingham, C. R., & Sanford, K. P. (in press). Other evidence for at least two alcoholisms II: Life course variation in antisociality and heterogeneity of alcoholic outcome. Development and Psychopathology.

Zucker, R. A., & Fillmore, K. M. (1968, September). Motivational factors and problem drinking among adolescents. Paper presented at the 28th International Congress on Alcohol and Alcoholism. Washington DC.

Zucker, R. A., & Fitzgerald, H. E. (1992a). Risk and coping in children of alcoholics (NIAAA grant RO1 AA-07065). Unpublished manuscript, Michigan State University, East Lansing, MI.

Zucker, R. A., & Fitzgerald, H. E. (1992b). Child Health and Development History. Unpublished instrument, Michigan State University, E. Lansing, MI.

Zucker, R. A., Fitzgerald, H. E., & Moses, H. D. (1995). Emergence of alcohol problems and the several alcoholisms: A developmental perspective on etiologic theory and life course trajectory. In D. Cicchetti & D. J. Cohen (Eds.), Developmental Psychopathology: Risk, Disorder, and Adaptation (Vol. 2, pp. 677-711). New York: Wiley.

Zucker, R. A., Fitzgerald, H. E., & Noll, R. B. (1990). Drinking and drug history (rev. ed., version 4). Unpublished instrument, Michigan State University, East Lansing, MI.

Zucker, R. A., & Gomberg, E. S. L. (1993). Alcoholism and antisocial comorbidity in women: A note on a hot spot and some hypotheses. Manuscript submitted for publication.

Zucker, R. A., & Noll, R. B. (1980). The antisocial behavior checklist. Unpublished instrument, Michigan State University, East Lansing, MI.

Zucker, R. A., Noll, R. B., & Fitzgerald, H. E. (1986). Risk and coping in children of alcoholics (NIAAA grant AA-07065). Unpublished manuscript, Michigan State University, East Lansing, MI.

Zucker, R. A., Noll, R. B., Ham, H. P., Fitzgerald, H. E., & Sullivan, L. S. (1994). Assessing Antisociality with the Antisocial Behavior Checklist: Reliability and Validity Studies. Unpublished manuscript, Michigan State University, East Lansing, MI.