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Gender Differences in the Development of Substance-Related Problems: The Impact of Family History of Alcoholism, Family History of Violence and Childhood Conduct Problems*

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ABSTRACT: *Objective:* This study examined gender differences regarding the relative influence of family history of alcoholism (FHA) and family history of violence (FHV) on reported childhood conduct problems (CCP) and adult problems with alcohol, drugs and violence. *Method:* The participants were 110 men and 103 women with alcohol-related problems recruited within 30 days of enrolling in treatment for substance abuse or dependence. Participants completed self-report measures of pretreatment violence, FHV, CCP, substance use and consequences, and demographics; a semi-structured interview was used to assess FHA. *Results:* Structural equation modeling (SEM) analyses revealed gender differences with regard to the influence of FHA and FHV as important factors in the development of childhood and adult behavioral problems. For women, the influence of FHA on subsequent child-

hood conduct problems and adult problems with alcohol was accounted for by FHV. For men, FHA was not directly associated with CCP or adult problems with alcohol and violence, but was associated with adult drug problems. For both men and women, FHV was associated with CCP, and CCP were associated with adult problems with drugs and violence. *Conclusions:* Overall, the analyses illustrate the relative importance of FHV as a risk factor in the developmental course leading to problems with drugs and violence among individuals with alcohol-related problems enrolled in treatment for substance abuse or dependence. Further, there was evidence that women may be impacted more than men by family background variables (both FHA and FHV) in terms of the development of adult problems with alcohol, drugs and violence. (*J. Stud. Alcohol* 61: 845-852, 2000)

IT HAS BEEN ESTABLISHED that family history of alcoholism (FHA) is a risk factor for the development of alcohol abuse or dependence (Cotton, 1979; Dawson et al., 1992). Risk for developing problems with alcohol increases roughly as a function of the number of affected relatives or density of FHA (Dawson et al., 1992; Stoltenberg et al., 1998), and there is evidence that FHA is differentially related to alcoholism subtypes. For example, several studies have demonstrated that FHA is more strongly related to alcoholism subtypes (Type 2 or Type B alcoholics) characterized by a history of childhood conduct problems (CCP) and adult antisocial behaviors (e.g., violence, drug use) (Babor et al., 1992; Cloninger et al., 1996; Zucker et al., 1996).

What is less well understood are the ways in which FHA fits into a more complete risk structure. FHA has been linked to an array of childhood markers for the development of alcohol- and substance-related problems, such as academic problems (Zucker and Gombert, 1986), deficits in executive cognitive functioning (Peterson et al., 1992), temperament (Tarter and Vanyukov, 1994) and aggression and other conduct problems (Carbonneau et al., 1998; Windle, 1996). Further, FHA also has been shown to be related to family history of violence (FHV) (e.g., exposure to domestic violence, physical and sexual abuse) (Sher et al., 1997). Thus, it has been hypothesized that the impact of FHA on the development of alcohol-related problems is either mediated or moderated by factors such as parental behaviors (e.g., use of physical discipline, FHV), childhood temperament and personality (Sher et al., 1997; Tarter and Vanyukov, 1994; Velleman, 1992). In support of such models, Sher and associates (1997) found that the relationship between FHA and alcohol-related problems among college-age participants was partially mediated by childhood stressors (e.g., history of abuse), whereas Hill and Yuan (1999) found that extraversion mediated the effect of FHA on the onset of adolescent drinking.

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FHV also has been shown to be an important factor in the developmental course leading to adult problems with substance abuse or dependence, and violence (Hanson et al., 1997; Malinosky-Rummell and Hansen, 1993). Specifically, parental antisocial behaviors (aggressive parenting and/or domestic violence) increase the risk of CCP (Straus and Mouradian, 1998; Wong et al., 1999), the subsequent development of adult problems with aggression and violence (Doumas et al., 1994; Pollock et al., 1990) and, therefore, adult antisocial alcoholism (Babor, 1992; Cloninger et al., 1996; Zucker et al., 1996).

Thus, both FHA and FHV are considered to be important components of a developmental trajectory leading to problems in childhood (conduct problems) and adulthood (alcoholism, drug abuse or dependence, violence). However, there is little information regarding relationships among FHA, FHV and later problems, or their relative impact on problem risk. Although a number of researchers have hypothesized that FHA effects are mediated in part by FHV, understanding of the relationship among FHA, FHV and later problems has been limited for several reasons. First, only a few studies have directly addressed this issue (e.g., Sher et al., 1997). Second, most studies examining the impact of family background variables on subsequent adult problems have measured either FHA or FHV, but not both (Carbonneau et al., 1998; Hanson et al., 1997; Windle, 1995). Third, as noted by Sher and colleagues (1997), if both FHA and FHV were measured, the analysis strategy did not test for mediation or moderation effects. Fourth, studies focusing on mediation/moderation effects have tended to use samples of young adults (college students) (Sher et al., 1997; Woldt and Bradley, 1996). Finally, studies of FHA effects in general have tended to focus on samples consisting of male participants, or if samples included both males and females, have not examined gender differences. For such reasons, relatively little is known about whether the relative impact of FHA and FHV differs for men and women.

The purpose of this study was to examine the interrelationships among FHA, FHV, CCP and adult problems with alcohol, drugs and expressed violence among men and women in treatment for substance abuse or dependence. The analysis strategy was based on developmental models and evidence from prior research that family background variables are related to CCP, and that CCP is related to adult problem severity with regard to alcohol, drugs and violence (Chermack and Giancola, 1997; Tarter and Vanyukov, 1994). This study addresses some of the limitations of prior research by including measures of both FHA and FHV, and by including both men and women. By studying such issues with such a sample, it is possible to identify how historical markers (e.g., FHA, FHV, reported CCP) may be related to alcohol-, drug- and/or violence-problem severity; whether FHA effects are mediated by FHV; the relative impact of

FHA and FHV on the developmental course leading to adult problems with alcohol, drugs and violence; and whether there are gender differences in such relationships. The findings will provide useful information to clinicians and researchers regarding the identification of historical markers that are related to problems associated with poor treatment response. Further, the results will provide information regarding potential gender differences in the impact of family-related factors on the development of adult problems with alcohol, drugs and violence.

Method

Procedure

Participants were recruited by trained research assistants within 30 days of enrolling in treatment for alcohol problems. The treatment centers offered both inpatient and outpatient treatment programs and Department of Veterans Affairs Medical Center treatment programs. The purpose of the study (examination of violence problems among individuals seeking treatment for alcoholism) was disclosed to participants, and they were informed that the study would require between 45 and 90 minutes of their time, and that they would receive \$20 for their participation. Participants were ensured that the information they provided would be kept confidential and would not be shared with clinical staff. Informed consent was obtained. Participants were asked to complete self-report instruments including measures of violence in the past year, alcohol and drug use and consequences, and demographics. Finally, women were oversampled in an effort to have equal numbers of men and women in the sample.

Participants

Participants in this study were 110 men and 103 women selected from a larger sample of 125 men and 125 women (participants from the larger sample who reported only drug-related problems were excluded for the present analyses). (For a description of the full sample, see Chermack et al., 2000.) For the current study, the age of participants ranged from 18 to 73 years, with a mean (SD) of 37.4 (9.63) years. Most of the study participants were white (65.7%), 22.1% were black and 12.2% were other ethnicities (Hispanic, Native American, Asian and other ethnicities). Approximately 18.8% were married, 10.8% separated, 31.4% divorced; 37.6% never married and 1.4% widowed. Mean years of education was 12.7 (1.85), with a range of 7 to 17 years. In terms of employment status, 40.6% worked full time, 9.9% part time, and 49.5% were not currently employed. Approximately 33.2% reported alcohol-related problems only, 30.8% reported primary alcohol problems with some drug problems, 28.0% reported primarily drug problems and some

alcohol problems, and 7.9% reported equal problems with alcohol and other drugs. No information was collected on participants who declined to participate. However, research assistants reported that very few individuals approached about participation declined to participate. Furthermore, the participants in this study were similar to 1995 statewide treatment admissions for substance abuse or dependence ($N = 18,623$) (Substance Abuse and Mental Health Services Administration, 1999).

Measures

Family history of alcoholism (FHA) was assessed during interviews with the participant using the screening portion of the Family History Assessment Module (FHAM; Rice et al., 1995). Participants were asked about problem drinking by their relatives (mother, father, brothers, sisters, sons, daughters, half-siblings, maternal grandparents, paternal grandparents, maternal siblings and paternal siblings) with the question: "Has drinking ever caused any of your relatives to have problems with health, family, their job or the police?" Because multilevel FH measures are generally superior to dichotomous measures at predicting diagnostically important alcohol use variables (Stoltenberg et al., 1998), a "family alcoholism liability" (FAL) measure of FHA was constructed. Thus, FHA was coded as a six-level variable in which 0 = no alcohol-related problems in parents or other relatives (grandparents, aunts and uncles); 1 = alcohol-related problems only among relatives of one parent (grandparents, aunts and uncles); 2 = alcohol-related problems only among relatives of both parents; 3 = one parent has alcohol-related problems and the other parent has no relatives with alcohol-related problems; 4 = one parent has alcohol-related problems and the other parent has relatives with alcohol-related problems; and 5 = both parents have alcohol-related problems. For the study sample, participants in the six groups numbered 43, 35, 16, 50, 34 and 35, respectively.

Family history of violence (FHV) was assessed with a modification of the Conflict Tactics Scales (CTS) (Straus, 1979). The aggressive behaviors included both moderate forms of violence (pushed, grabbed or shoved; slapped; and hit, punched or kicked) and severe forms of violence (beat up; hit with a hard object; threatened with a knife or gun; and used a knife or gun). Specifically, parental violence was measured by asking participants to rate how often their father used each type of aggressive behavior during disputes with their mother (father-to-mother violence), as well as how often their mother used such behaviors in disputes with their father (mother-to-father violence). To assess violence received from parents, participants were asked how often their father used each behavior with them (father-to-subject), as well as how often their mother used each behavior with them (mother-to-subject). For each of the four family violence

questions, violence frequency measures were computed by summing the frequencies (never through 20+ times) of each of the violent acts. For the data analyses, a composite "family history of violence" (FHV) variable was created by performing a principal components factor analysis from items measuring the frequency of mother-to-father, father-to-mother, mother-to-subject and father-to-subject violence. This analysis extracted one factor with factor loadings ranging from 0.62 (father-to-subject) to 0.80 (father-to-mother). The solution accounted for 52% of the variance and the coefficient alpha for this set of four scores was 0.71.

Childhood conduct problems. Participants were asked to indicate the frequency of nine childhood conduct problems, including expulsions/suspensions from school, running away from home, conflict with parents, damaging property/fire-setting, "breaking in," being sent to juvenile court, shoplifting, and lying to/conning others. To measure frequency of childhood violence, participants were asked to rate, using a modification of the CTS, how often they used each type of moderate (pushed, grabbed or shoved; slapped; and hit, punched or kicked) and severe (beat up; hit with a hard object; threatened with a knife or gun; and used a knife or gun) aggressive behaviors during disputes with nonfamily members (e.g., friends, peers, schoolmates). From the items concerning frequency of conduct problems and violence, a composite variable was created to assess "childhood conduct problems." This variable was computed by summing standardized transformations of the items from the childhood conduct scale and items concerning incidents of violence toward peers/schoolmates. This composite measure showed good internal consistency (coefficient alpha = 0.90).

Adult violence severity. The questionnaire used in this study to assess adult violence was a modification of the Conflict Tactics Scales (Straus, 1979). The modification of the CTS asked participants to rate the frequency of a variety of aggressive behaviors that occurred during disputes and disagreements across a variety of relationship types during the 12 months prior to enrolling in treatment. The aggressive behaviors included both moderate forms of violence (pushed, grabbed or shoved; slapped; and hit, punched or kicked) and severe forms of violence (beat up; hit with a hard object; threatened with a knife or gun; and used a knife or gun). With regard to relationship type and contexts, the questions asked about expressed violence in disputes and disagreements with partners or spouses; friends, strangers and acquaintances; bosses; coworkers; and people in bars. For each of these six relationship types/contexts, violence typologies were constructed to classify the severity of expressed violence. The violence typologies were based on violence severity scales identified in previous factor analysis studies with the CTS (Straus, 1990). For the present study, an overall adult violence severity typology was constructed based on the most violent act expressed toward others by participants across the six relationship types. Thus, participants were grouped into

the following three categories: no violence, moderate violence and severe violence. The percentages of men in the nonviolent, moderately violent and severely violent groups were 18.0%, 25.2% and 56.8%, respectively. For women, the percentages in the nonviolent, moderately violent and severely violent groups were 28.2%, 29.1% and 42.7%, respectively.

Alcohol and drug consequences. Scales taken from the University of Arkansas' Substance Abuse Outcomes Module (SAOM) (Smith et al., 1996) were utilized to measure alcohol and drug consequences. The SAOM is a self-report measure designed to assess the severity of alcohol and drug problems. Participants are asked to indicate whether they experienced a series of 25 substance-related consequences in the past year and whether the symptom was due to alcohol only, drugs only, or both alcohol and drugs. Example items included questions relating to DSM-IV (American Psychiatric Association, 1994) abuse and dependence diagnoses, including tolerance ("I needed more and more alcohol or drugs to get the same effect as before"); withdrawal ("Stopping or cutting down on my alcohol or drugs made me sick"); loss of control ("I kept on using alcohol or drugs even after I promised myself not to"); and psychosocial consequences ("I neglected family or friends for two or more days in a row as a result of alcohol or drugs"). From this measure, separate scales were constructed to measure the total number of consequences due to alcohol use and drug use. To avoid problems with dependency of data in the analyses, two items concerning interpersonal conflicts (i.e., arguments, fighting) were not included in the alcohol and drug consequences scales. Both the alcohol and drug consequences scales had good internal consistency (coefficient alphas = 0.93 and 0.97 for the alcohol and drug scales, respectively).

Data analysis

In order to examine basic gender differences among the variables used in the primary analyses, ANOVAs were conducted with the six variables in the primary analyses as the dependent variables (FHA, FHV, CCP, adult alcohol severity, drug severity and violence severity), and correlations among the six variables were conducted separately for men and women in order to describe their simple bivariate relationships. The primary analyses first examined the relationship between FHA and conduct problems separately for men and women, and whether this relationship was mediated by FHV. These analyses were conducted according to procedures outlined by Baron and Kenny (1986). First, the CCP variable was regressed on FHA; second, FHV was regressed on FHA; and third, FHV was regressed on FHA and CCP. To demonstrate full mediation, the relationship between FHA and CCP would need to be significant; the relationship between FHA and FHV would need to be significant; and, af-

ter controlling for FHV, the relationship between FHA and CCP would fall below statistical significance.

The second phase of the analysis used structural equations modeling (SEM) with manifest variables to build a model predicting adult substance use and violence outcomes from FHA, FHV and CCP. SEM is an analytic strategy in which complex interrelationships among variables can be examined in a flexible and robust manner. For these analyses, it was hypothesized that the influence of family background variables (FHA, FHV) would be related to CCP, and that CCP would be related to adult problems with alcohol, drugs and violence. This analysis was conducted separately according to gender to identify potential gender differences regarding the interrelationships among family background, childhood conduct and adult problems with alcohol, drugs and violence. The SEM analyses essentially incorporated the mediational characteristics of the first analysis while adding important adult outcome variables in the model. Due to the smaller sample size and the nature of some of the indicators, latent variables were not warranted; thus manifest, or observed, variables were used in this model.

Results

Preliminary bivariate analyses

Bivariate analyses were conducted to examine potential gender differences in the variables to be used in the primary analyses (FHA, FHV, CCP, adult violence severity, alcohol and drug problems). Of these variables, the following three showed significant gender differences: women (mean [SD] = 2.7 [1.81]; range = 0 to 5) reported more severe FHA than did men (mean = 2.3 [1.69]; range = 0 to 5; $F = 4.04$, 1/212 df, $p < .05$); men (mean = 2.3 [10.93]; range = -11.4 to 37.4) reported more severe CCP than did women (mean = -2.4 [9.60]; range = -11.4 to 38.1; $F = 11.18$, 1/212 df, $p < .001$); and men (mean = 1.4 [0.78]; range = 0 to 2) had more severe adult violence scores than did women (mean = 1.2 [0.83]; range = 0 to 2; $F = 4.83$, 1/212 df, $p < .05$). There were no gender differences with regard to FHV (mean = 0.1 [1.04]; range = -0.9 to 5.5), alcohol (mean = 14.7 [5.89]; range = 1 to 23) or drug consequences (mean = 8.2 [8.22]; range = 0 to 23). Table 1 presents the correlation matrices for men and women for the variables included in the primary analyses and reveals that family background variables (FHA, FHV) were more often correlated with childhood conduct and adult problems among female participants.

Primary analyses

Analyses were conducted separately by gender to test whether the influence of FHA on CCP was mediated by FHV. For men, the direct path between FHA and CCP was

TABLE 1. Correlation matrix of FHA, FHV, childhood conduct problems (CCP), adult violence and drug and alcohol problems by gender (results for men are above the diagonal and results for women are below the diagonal, in italics)

Variables	FHA	FHV	CCP	Adult violence	Drug problems	Alcohol problems
FHA	—	0.22*	0.07	0.02	0.22*	0.06
FHV	0.42*	—	0.42*	0.19*	0.21*	0.05
CCP	0.22*	0.55*	—	0.36*	0.27*	0.14
Adult violence	0.00	0.24*	0.23*	—	0.21*	0.10
Drug problems	0.10	0.22*	0.43*	0.37*	—	-0.22*
Alcohol problems	0.19§	0.22*	0.13	-0.07	-0.10	—

* $p < .05$; § $p < .06$.

not significant (standardized regression weight/beta = -0.07), but the paths between FHA and FHV (beta = 0.22, $p < .05$) and FHV and CCP (beta = 0.42, $p < .001$) were significant. Thus, for men the mediational hypothesis was not supported, and FHV only was related to CCP. These findings were expected given the correlation analyses displayed in Table 1. For women, FHA was significantly related to CCP (beta = 0.22, $p < .05$), and FHA also was related to FHV (beta = 0.42, $p < .005$). Finally, when FHV was added into the model, the formerly significant path (from FHA to CCP) was no longer significant (beta = 0.14). Thus, the relationship between FHA and CCP was strongly mediated by FHV for women.

To further test these hypotheses and to add adult substance use outcomes to the model, SEM models were created for each gender (see Figure 1). The models were based on theory; however, some modifications to the models (e.g., the path between FHV and adult alcohol problems for women,

the path between FHA and adult drug problems for men and covariances between disturbance terms) were added based on high residuals and lower fit functions. The model for men ($n = 110$) was conducted with a maximum likelihood solution on a covariance matrix derived from the raw data and showed an excellent fit ($\chi^2 = 0.90$, 5 df, $p = .97$, CFI = 1.00). The left side of Figure 1 shows the model tested for men. Two paths were not significant at the $p < .05$ level: the path from FHV to adult alcohol consequences and the path from conduct problems in childhood to adult alcohol consequences. The significant paths were from FHA to FHV, FHA to adult drug consequences, FHV to CCP, and from CCP to both adult violence severity and adult drug consequences.

The model for women ($n = 103$) is shown in the right portion of Figure 1. The model was conducted with a maximum likelihood solution on a covariance matrix derived from the raw data and showed an excellent fit ($\chi^2 = 5.46$, 6 df, $p = .48$,

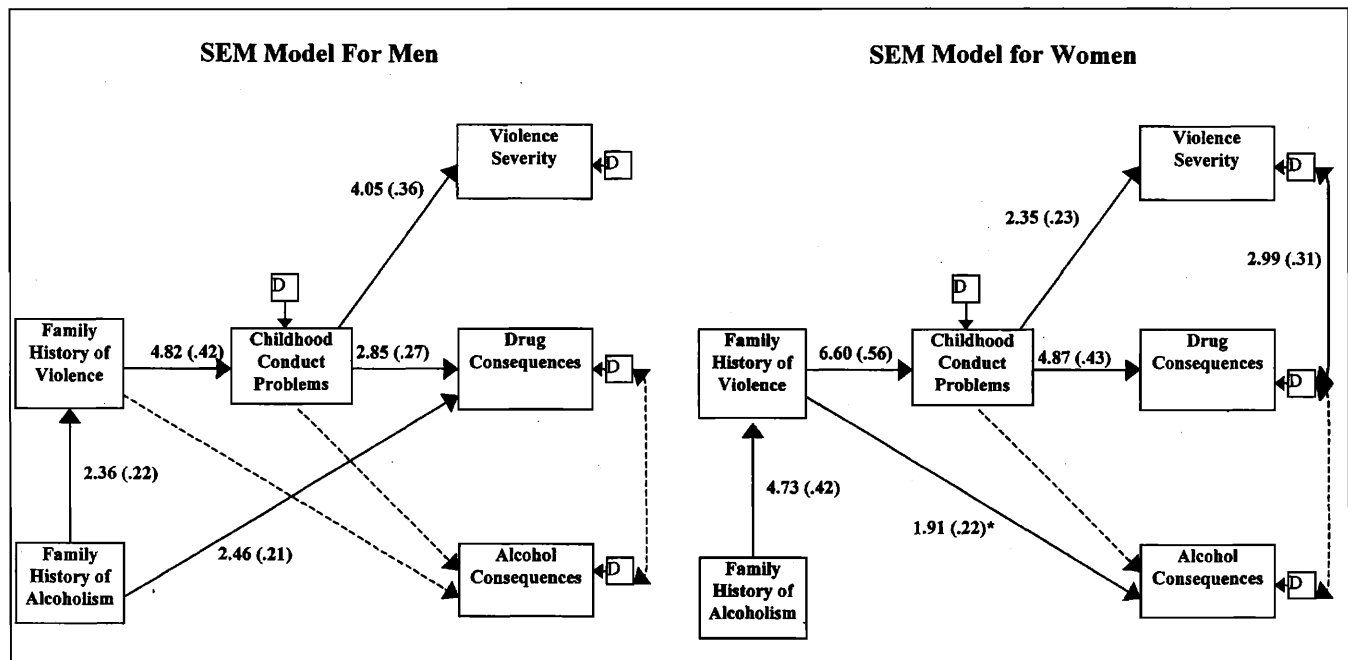


FIGURE 1. Results of SEM analyses for men and women (values on the paths are t values from the unstandardized solution, and the standardized coefficients are in parentheses; dashed lines indicate paths that were tested but were not significant, * $p < .06$)

CFI = 1.00). As expected from the earlier results, FHA was significantly associated with FHV. As in the model for the men, FHV was associated with CCP, and CCP was associated with adult violence severity and drug consequences. However, in contrast to men, FHV was also marginally related ($p < .06$) to adult alcohol-related consequences, and this effect was not mediated by CCP. Given that this relationship was in the expected direction (FHV positively correlated with adult alcohol-related consequences), we feel comfortable interpreting this path as meaningful even though it did not reach the traditional level of two-tailed significance ($p < .05$).

Discussion

Overall, the analyses illustrate the relative importance of FHV as a risk factor in the developmental course leading to problems with drugs and violence among individuals in substance abuse treatment. Specifically, for both men and women, FHV was directly related to CCP, and was a significant component of a developmental model predicting drug-related problems and adult violence severity. Further, FHV was related to adult alcohol-related problems for women. The findings regarding FHV are consistent with both prior research findings (Hanson et al., 1997; Pollock et al., 1990) as well as models of the etiology of alcohol, drug and violence problems (Chermack and Giancola, 1997; Malinosky-Rummell and Hansen, 1993). For men, FHA was not directly related to either conduct problems or adult problems with alcohol or violence, but was directly (and indirectly through relationships with FHV and CCP) associated with drug problem severity. The findings for men suggest that both density of FHA and FHV are associated with enhanced vulnerability to comorbid drug problems. For women, FHA appeared to have more impact on the developmental course for alcohol-related problems (although FHA effects for women were strongly mediated by FHV). The overall pattern of findings (correlational analyses and the models), however, suggest that the influence of FHA appeared relatively modest compared with FHV.

Given that several studies have found FHA effects on a range of developmental and adult outcome variables, the relative absence of direct FHA effects or bivariate correlations with certain variables (most notably adult alcohol-related problems) could seem unexpected. The relative lack of direct FHA effects regarding alcohol-related problems likely were due to several reasons. First, the sample consisted of participants in treatment who all reported having alcohol-related problems. Prior studies often have included samples of individuals at risk for alcohol problems, such as young adults and/or college students, or participants with a range of alcohol-related problems recruited from nontreatment settings (Sher et al., 1997; Windle, 1995; Woldt and Bradley, 1996). The reduced heterogeneity in alcohol problems in the present

study may have decreased the likelihood of detecting significant FHA effects. However, it is notable that a number of studies with various sample types (alcoholics, individuals at risk for alcoholism, young adults with alcohol-related problems, men with and without a history of paternal alcoholism) also have failed to find FHA effects on adult outcomes (Altermann et al., 1989; Pollock et al., 1990; Schuckit et al., 1995), or have found relatively weak FHA effects when compared with other variables (Penick et al., 1999). Second, because a number of prior studies of FHA did not also assess FHV (Carbonneau et al., 1998; Corral et al., 1999), and other studies did not attempt to address possible mediational effects of FHV (Sher, 1991), FHA effects in other studies may have been accounted for, at least in part, by FHV. The findings of the present study, as well as evidence from prior research demonstrating an association between FHA and FHV in families, lend credence to this possibility.

With regard to gender issues, men reported higher levels of CCP and adult violence and reported less severe FHA, and the correlational analyses suggested that women may be more influenced by family background variables (FHA, FHV). The primary multivariate analyses revealed that both men and women had similar associations between FHA and FHV, and between FHV, reported CCP and adult problems with drugs and violence. For women, FHV also was directly related to alcohol problem severity. This particular result indicates that for women FHA and FHV were important components of a risk structure relating to both CCP and adult problems with alcohol, drugs and violence, but that FHV appeared to be a strong mediator of FHA effects. As noted, these findings are similar to some other studies suggesting a greater influence of family background variables (FHA or FHV) for women with regard to substance use problems (Crum and Harris, 1996; Curran et al., 1999; Hops et al., 1999). Conversely, the findings that women reported more severe FHA, along with the finding that FHA and FHV were more strongly correlated with other factors, also may indicate that a greater dysfunctional family background is needed for women to develop problems severe enough to enter treatment for substance abuse or dependence. Future research is needed to clarify whether gender differences in FHA effects among individuals in treatment for substance abuse or dependence are due to differences in sensitivity to family variables, differences in degree of exposure/severity of FHA, or a combination of such factors. Another gender difference was the significant relationship between FHA and adult drug problem severity for men. This may be explained as providing evidence for the presence of alcoholism subtypes (Type 2, Type B, AAL-Antisocial Alcoholism) that are related more to violence and drug comorbidity.

A number of researchers have hypothesized mechanisms to explain the relationships among family factors (FHA, FHV), CCP and adult problems with substance misuse and violence (Chermack and Giancola, 1997; Zucker et al.,

1996). These explanatory frameworks include the role of genetic influences, temperament, serotonergic functioning and cognitive functioning, as well as environmental factors (e.g., parenting behaviors, social learning effects). With the family history approach used in this study, it is not possible to disentangle the potential and/or relative influences of such factors. Nevertheless, the present study suggests that FHV influences deserve greater attention as part of the developmental risk for a variety of adult problems with substance use and violence. The findings raise the possibility that the genetic influences for certain alcoholism subtypes (Type 2, Type B, Antisocial Alcoholism) may have more to do with associated conduct and antisocial behaviors as a phenotype than alcohol-specific problems, and/or that FHV may be a more important etiological factor for such subtypes than FHA. Finally, it also is possible that parental antisocial personality disorder (ASPD) is the primary family background variable related to both FHA and FHV, and the subsequent development of CCP and adult problems with alcohol, drugs and violence. The present study did not include a measure of parental ASPD, and the inclusion of measures of ASPD status in future studies is important to further clarify factors related to the etiology of adult problems with substance use and violence.

The results of this study have important implications in several areas. First, clinical implications include the importance of assessing FHV in terms of identifying patients at risk for comorbid problems with alcohol, drugs and violence, and who thus have a poorer prognosis for treatment. Furthermore, clinical settings may wish to design and implement treatment approaches with a greater focus on the impact of FHV on current substance-related problems and issues related to physical violence. Treatment focusing on violence issues may have benefit in reducing relapse risk, violence and legal problems, and may also play a role in the prevention of problems with substance use and violence among the children of individuals in treatment. Unfortunately, very few studies have attempted to examine the impact of such interventions in substance abuse or dependence treatment settings (O'Farrell and Murphy, 1995). Second, the findings have a number of research implications. Specifically, it is critical for researchers to further examine the relationships among FHA, FHV, CCP and adult problems with substance use and violence. Future studies including both FHA and FHV also should include additional constructs and measures, such as measures of biological and genetic vulnerabilities, parental ASPD, serotonergic functioning, temperament, personality and executive cognitive functioning, in order to better understand the interrelationships among potential mechanisms underlying the development of substance misuse and violence problems.

The present study has a number of limitations that should be addressed. For example, this study relied on a retrospective design with self-report measures. This limits our ability

to make conclusions regarding causal relationships among the predictor variables due to the potential for problems with recall or response bias. Although the measures included in the study all had good face validity and internal consistency, and the findings are consistent with prior research and developmental theories of substance abuse and violence, it is not possible to rule out the potential influence of problems with recall problems or response bias. Future studies may address such problems by using longitudinal designs and attempting to corroborate self-report information. Second, this study focused on a sample of individuals in treatment for substance abuse or dependence. It is possible that the magnitude of the interrelationships among variables may differ across samples. For example, it is likely that more heterogeneous samples in terms of childhood background and adult substance misuse severity may reveal more significant FHA effects, particularly with regard to adult alcohol-related problems. Third, this study did not examine violence of a sexual nature as either a family background or childhood risk factor for adult problems with substance misuse and violence. This is important because research shows such a history is predictive of involvement with substance use and violent relationships (Wilsnack and Wilsnack, 1993). Fourth, given that this study focused on examining the influence of FHA and FHV, we did not examine other family history variables (history of ASPD, drug problems and depression). It is likely that such factors also influence the development of adult problems with substance misuse and violence, and these deserve further attention in future research. Finally, the measures did not include structured interviews to verify substance abuse or dependence diagnoses. Although such measures were not used, as noted in the Method section, the sample was similar to statistics regarding individuals seeking treatment in the catchment area for the study. This provides some confidence in generalizing the findings to substance abuse or dependence treatment settings.

To summarize, the results of this study provide evidence concerning the relative importance of FHV as an important risk factor in the development of problems with drugs and violence among individuals with alcohol-related problems. The findings also revealed gender differences regarding the potential impact of FHA and FHV in the development of subsequent childhood and adult problems. Specifically, there was evidence that women were more impacted by family background variables (both FHA and FHV) in terms of adult problems with alcohol, drugs and violence (for men, family background variables were associated only with adult problems with drugs and violence). Finally, the results highlight the need for researchers examining FHA and family background influences to conduct more detailed assessments of violence in the family of origin in order to better understand or account for the influence of FHA on the development of adult problems with substance use and violence.

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