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Parental psychopathology moderates the influence of parental divorce on lifetime alcohol use disorders among Israeli adults

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Abstract

Background—Parental divorce and psychopathology are well-documented risk factors for alcohol use disorders (AUD) in the United States and other countries where divorce is common and per capita total alcohol consumption is moderate to high. However, little is known about these relationships in countries where divorce and alcohol problems are less common, such as Israel.

Methods—Israeli adult household residents (N=797) age 21–45 were interviewed in person between 2007 and 2009. Logistic regression models were used to examine main and additive

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Conflict of Interest

No conflict declared.

No authors have any relevant financial interests.

Contributors

Drs. Thompson, Shmulewitz, and Hasin designed the present study. Dr. Hasin designed the overall Israel study, obtained funding, and wrote the protocol. Drs. Spivak, Weizman, and Frisch participated in the design of the protocol, its approval and the data collection. Dr. Thompson managed the literature searches and summaries of previous related work. Drs. Thompson, Shmulewitz, Meyer, and Stohl undertook the statistical analysis. Dr. Thompson wrote the first draft of the manuscript. All authors contributed to and have approved the final manuscript.

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interaction effects of parental divorce and psychopathology on lifetime DSM-IV AUD, adjusting for age, gender, and ethnicity.

Results—Parental divorce (OR=2.18, p .001) and parental psychopathology (OR=1.61, p .01) were independently associated with lifetime AUD and, when considered together, showed significant interaction (p =.026). Specifically, the effect of divorce on AUD was only significant among those who also reported parental psychopathology.

Conclusions—This is the first study showing the influence of parental divorce and psychopathology on risk for AUD among Israeli adults, where both divorce and AUD are less common than in the United States. Alcohol prevention and treatment professionals should recognize that children who experience parental divorce and/or psychopathology could be more vulnerable to later developing AUD than those whose parents remain together and without psychopathology.

Keywords

alcohol use disorders; parental divorce; parental psychopathology; Israel

1. INTRODUCTION

Alcohol use disorders (AUD; alcohol abuse or dependence), which are maladaptive patterns of alcohol consumption manifested by symptoms leading to clinically significant impairment or distress, constitute a prevalent public health problem in the United States and elsewhere (Hasin et al., 2007; Li et al., 2007). However, a substantial amount of the variance in risk for AUD remains unexplained, suggesting a need to investigate potentially preventable and modifiable risk factors. Identification of such factors, as well as how they interact to differentially influence the likelihood of AUD, is highly important to inform the development of effective prevention programs and treatment for AUD.

Several childhood stressors (e.g., physical and sexual abuse, household substance use, family dysfunction, terrorism exposure) increase the risk for later alcohol problems (Anda et al., 2002; Anda, 2006; Dube et al., 2001, 2002; Kendler et al., 2000; Schiff et al., 2007). One stressor in particular, parental divorce, is common in many countries, including the United States, where over half of first marriages end in divorce (Cherlin, 1992; Kelly, 2000; Munson and Sutton, 2006; US Census Bureau, 2007). As prior research has demonstrated, the transition following parental divorce is highly stressful for most children (Kelly, 2000; Amato et al., 1995; Dube et al., 2001, 2002). Children of divorced parents are more likely to exhibit psychological, behavioral, social, and academic problems than children from intact two-parent families (Afifi et al., 2009; Amato, 1993; Kelly, 2000). Many of these problems persist well into adulthood, manifested, for example, as lower educational attainment and earnings, welfare dependency, poor marital quality (Amato and Keith, 1991; Amato et al., 1995; Dube et al., 2001, 2002), and all are associated with increased risk for lifetime AUD. Additional studies indicate that experiencing parental divorce during childhood increases the risk for problematic alcohol use (Wolfinger, 1998; Hope et al., 1998; Dube et al., 2002) and lifetime alcohol dependence (e.g., Thompson et al., 2013, 2008). These studies have been conducted in the United States where divorce is common. The relationship between parental

divorce and offspring AUD may differ in countries with lower divorce rates. Thus, gaining a better understanding of the relationship of parental divorce to the risk for AUD in countries with lower divorce rates is important.

Another childhood stressor for AUD, parental psychopathology (e.g., substance abuse, depression, antisocial problems), has been associated with poor parenting skills and inadequate child supervision (Kelly, 2000; Storksen et al., 2006), lack of affection, high levels of criticism or hostility, lax or inconsistent discipline or supervision, and general lack of parental involvement (Keyes et al., 2011; Larson and Halfon, 2013; Summers et al., 1998; Wolfinger, 1998), all of which are also associated with elevated risk for lifetime AUD. Additionally, parents with psychiatric and substance use problems often exhibit and model maladaptive coping and cognitive styles that deemphasize problem-solving, which, in turn, can be internalized by offspring and lead to increased risk for a variety of psychiatric (e.g., McLaughlin et al., 2012) and substance use problems (e.g., Kreuger et al., 2002; Kendler et al., 2003; Thompson et al., 2013, 2008). For example, those with a parental history of alcohol problems are more likely to develop substance use disorders (SUD), antisocial personality traits, and depression than those without a parental history (Kendler et al., 2003). Moreover, a parental history of depression increases risk for major depression, anxiety disorders (Lieb et al., 2002), and SUD (Kendler et al., 2003). While the association between parental history of psychopathology and related disorders in offspring has been documented in several populations with differing cultures and histories (McGue et al., 1996; van der Zwaluw et al., 2008; Yoshino et al., 2000; Keyes et al., 2011; Thompson et al., 2013; Larson and Halfon, 2013), most studies establishing these relationships have been conducted in countries with moderate to high per capita alcohol consumption (McLaughlin et al., 2012), such as the United States, where the per capita total alcohol consumption is 9.58 liters/year (World Health Organization, 2009).

Given that parental divorce and parental psychopathology are each likely to cause offspring duress and predispose them for substance use and psychiatric disorders (McLaughlin et al., 2012), experiencing both could differentially influence risk for AUD. That is, the effects of parental divorce on AUD might differ between offspring of parents with and without psychopathology. Two studies have examined the relationship of parental divorce and parental history of alcohol problems to offspring lifetime alcohol dependence (Thompson et al., 2008, 2013). Childhood parental divorce and parental history of alcohol problems were shown to interact, with those experiencing both, as compared to offspring who experienced neither parental divorce nor parental alcohol problems, being at three times the likelihood for DSM-IV lifetime alcohol dependence. Additionally, experiencing childhood parental divorce, even in the absence of parental history of alcohol problems, remained a significant predictor of lifetime alcohol dependence (Thompson et al., 2008, 2013). However, these studies examined the influence of parental alcohol problems only (not drug, depression, or antisocial problems) and were conducted in the United States, where alcohol consumption is moderate to high and divorce is common. Surprisingly little is known about the individual and joint effects of parental divorce and parental psychopathology on adult offspring AUD in countries where divorce and AUD have lower prevalence, such as Israel.

In Israel, per-capita alcohol consumption is 3.28 liters/year (World Health Organization, 2009), much lower than that of the United States (World Health Organization, 2009). Lifetime abstinence from alcohol is rare in Israel. However, abundant evidence shows that heavy drinking and alcohol problems are less common than in the United States (Shmulewitz et al., 2012, 2010; Hasin et al., 2002a, 2002b; Neumark et al., 2001). Further, 14.8% of new marriages in Israel end in divorce (United Nations Demographic Yearbook, 2011), substantially fewer than in the United States. Assumptions about the role of particular risk factors examined in only one context may be incorrect if the risk factors operate only in that specific context. For this reason, determining consistency in the operation of risk factors across varying social contexts offers the potential to determine how robust they are to the context in which they are studied. Because of the differences between Israel and the United States in alcohol consumption/problems, and in divorce frequency, Israel provides a contrasting social context to examine parental divorce, parental psychopathology, and adult-offspring lifetime AUD, thus offering a unique opportunity to understand the robustness of risk factors for lifetime AUD originally identified in United States samples.

Accordingly, this study used data from a sample of Israeli adult household residents to examine the relationship between parental divorce experienced prior to age 18 and parental psychopathology on offspring DSM-IV lifetime AUD. Specifically, the following hypotheses were tested: (1) Parental divorce will be associated with offspring DSM-IV lifetime AUD; (2) Parental psychopathology will be associated with offspring DSM-IV lifetime AUD; and (3) Parental divorce and parental psychopathology will interact to differentially affect the risk for offspring DSM-IV lifetime AUD.

2. METHODS

2.1. Study Procedures

Data were collected in 2007–2009 from 1,349 adult household residents, described in more detail elsewhere (Hasin et al., 2002a, 2002b; Shmulewitz et al., 2010, 2012). This sample, designed to investigate influences on alcohol-related traits, was selected from the Israeli Population Register. One potential respondent from each household was selected from the register, based on demographic characteristics and area of residence. Only those of Jewish ethnicity were selected to increase genetic homogeneity. Males were oversampled because drinking among Israeli women was too limited (Hasin, 1998; Spivak, 2007) to accomplish the study goals. Interviewers received structured training and administered face-to-face computer-assisted interviews, after obtaining written informed consent as approved by IRBs at New York State Psychiatric Institute, Tel Aviv University, Ness Ziona/Ba'er Yaakov Psychiatric Hospitals and the Israel Ministry of Health. The overall response rate was 68.9%. Quality control was provided by ongoing supervision in the form of periodic supervisor field observation of interviews, structured review of recorded interviews, and telephone verification of participation and responses to questions.

2.2. Sample

The present analysis included 797 participants, ages 21–45, for whom complete data were available for diagnoses of AUD, parental divorce prior to age 18 of the respondent, parental

psychopathology problems, and demographics. Respondents older than 45 were excluded since they were uninformative about the research question: alcohol use disorders were very uncommon and parental divorce essentially did not occur in that group. Of the analyzed sample, 77.4% (N=617) were male; 20.3% (N=162) were immigrants from the former Soviet Union (FSU); and mean age was 32.2 (s.d.=6.6). These demographic variables were used as control covariates in analyses, as they have well-established associations with lifetime alcohol-related traits in Israel (Hasin et al., 1998, 2002a, 2002b; Shmulewitz et al., 2010).

2.3. Measures

2.3.1. Lifetime Alcohol Use Disorders—The Alcohol Use Disorders and Associated Disabilities Interview Schedule (AUDADIS; Grant, 1995, 2003; Hasin, 2007), a state-of-the-art structured diagnostic interview, was used to diagnose lifetime AUD (diagnosis of alcohol abuse or dependence) following DSM-IV guidelines (American Psychiatric Association, 2000). The AUDADIS was specifically designed for experienced lay interviewers and was developed to advance measurement of substance use and mental disorders in large-scale surveys. Alcohol abuse and dependence were combined to create a variable representing the presence of any AUD, because alcohol abuse and dependence criteria have been shown to reflect a latent variable representing a single AUD in the United States (e.g., Saha et al., 2012, 2006), Israel (Shmulewitz et al., 2010) and several other countries (Hasin et al., 2013) and is combined in the DSM-5. Reliability of AUDADIS alcohol diagnoses in clinical and general population samples (Grant, 2003, 1995; Chatterji, 1997; Hasin, 1997) ranges from very good to excellent ($\kappa=0.70-0.84$). Convergent, discriminative, and construct validity of AUDADIS alcohol criteria and diagnoses are good-to-excellent in the United States (Hasin, 1997; Hasin, 1999) and multinational studies (Hasin, 1997; Pull, 1997), including concordance of AUDADIS diagnoses with clinician reappraisals ($\kappa=0.60-0.76$; Canino et al., 1999; Cottler et al., 1997).

2.3.2. Childhood Parental Divorce—Parental divorce was assessed by the AUDADIS question “did your biological parents get divorced or permanently stop living together before you were 18 years old?”

2.3.3. Parental History of Psychopathology—Using AUDADIS modules, parental lifetime histories of psychopathology were assessed for substance use disorders, depression, and antisocial personality disorder. Interviewers began this assessment by reading definitions of each disorder to respondents that included readily observable manifestations of DSM-IV criteria for each disorder. Observable manifestations were used rather than subjective symptoms since these are the mostly likely to be known to family informants, thus increasing the sensitivity of the measure (Heiman et al., 2008; Andreasen et al., 1997; Slutske et al., 1996; Zimmerman and Martinez-Pons, 1998). For example, family history of antisocial personality disorder was assessed by reading a list of behaviors to participants (e.g., destroying property, repeatedly fights, being impulsive or reckless) and asking if participant’s father or mother had lifelong patterns of such behavior (yes/no response). Given the shared genetic liability of substance use and psychiatric disorders (Kendler et al., 2003) and the strong, robustly-replicated relationships between types of psychopathology

shown in studies of the meta-structure of common disorders (Kreuger et al., 1999), a binary variable was generated representing whether or not either parent had a history of any psychopathology. The test-retest reliability of AUDADIS family history variables is very good to excellent (Grant et al., 1995, 2003; Hasin et al., 1997; Dawson and Grant, 1998), particularly of parental history (Dawson and Grant, 1998).

2.4. Analysis

Logistic regression models (in SAS-callable SUDAAN) were used to examine the main effects of childhood parental divorce and parental history of psychopathology on the risk of the respondent's lifetime AUD, adjusting for age, sex, and former Soviet Union immigration status. Results are reported as odds ratios, indicating the increase in the odds of any AUD given parental divorce or parental psychopathology. The increase in adjusted AUD prevalence in the parental divorce or psychopathology groups are also reported since prevalence (risk) differences are subsequently used for assessing moderation of the parental divorce effect by psychopathology (interaction).

Interaction between parental divorce and psychopathology was assessed on the additive interaction scale, consistent with the current conceptual understanding of interaction in epidemiology (Rothman, 2002). Additive interaction was assessed with a logistic regression model including both parental divorce and psychopathology and an interaction term (parental divorce*psychopathology), then back-transforming the parameters to the probability (prevalence) scale, to investigate risk differences. The estimate for the interaction term represents the interaction contrast (IC), a "difference in differences" effect (Rothman et al., 2008). This "difference in differences" was evaluated in three steps. (1), The risk difference in AUD between those with and without parental divorce was evaluated among those *with* a history of parental psychopathology. (2) The same risk difference was evaluated among those *without* parental psychopathology. (3) The IC was evaluated to determine if the divorce effect (risk difference) was greater among those with parental psychopathology than among those without parental psychopathology. Wald chi-square tests were used to assess the statistical significance of the risk differences and IC. Further, as the IC indicates the difference in the slopes between those with or without parental divorce by parental psychopathology, plots of regression-adjusted prevalences were created to facilitate interpretation.

3. RESULTS

The prevalence of any lifetime AUD in this largely male, relatively young adult sample was 29.6%, and 13.4% of the sample had experienced parental divorce. Parental history of psychopathology was present in 41.5% of the respondents. Parental divorce and parental psychopathology were significantly associated (OR=2.24; CI=1.48, 2.29), with respondents who experienced parental divorce during childhood being twice as likely as those from intact families to have parents with psychopathology.

Among those with any lifetime AUD, 20.8% experienced parental divorce and 47.9% reported parental histories of psychopathology, as compared to 10.3% and 39.0%, respectively, among those without AUD. Prevalences of specific parental substance use and

psychiatric disorders and control variables among respondents with and without AUD are presented in Table 1.

Both parental divorce and a history of parental psychopathology showed significant association with any lifetime AUD (Table 2). The adjusted prevalence of any AUD was increased by .16 in those who experienced parental divorce compared to those who did not, corresponding to an adjusted odds ratio (OR) of 2.18 (95% CI=1.4,3.4; $p=.0004$). The adjusted prevalence of any AUD was increased by .09 in those who reported parental psychopathology as compared to those who did not (OR=1.61; 95% CI=1.2,2.2; $p=.004$).

Parental divorce and history of psychopathology showed significant additive interaction. Among participants who reported parental psychopathology, the adjusted prevalence difference in any AUD between those with parental divorce and those without parental divorce was 0.24 ($p=.001$; Table 3). This difference contrasted sharply with the small non-significant difference in any AUD prevalence by parental divorce status among those without parental psychopathology (AUD prevalence increased by 0.03). The interaction contrast [IC] (difference in differences) was 0.21 ($p=0.026$) (Table 3, Figure 1). Thus, the effect of divorce on AUD was only significant among those who also reported parental psychopathology.

4. DISCUSSION

This study examined whether parental divorce and parental psychopathology increased the likelihood of lifetime DSM-IV AUD among Israeli adult household residents. In this sample, parental divorce and parental psychopathology independently increased the likelihood of offspring lifetime AUD, after adjustment for key demographics. Further, parental psychopathology moderated the effect of parental divorce, in that the effect of divorce on lifetime AUD was only evident among those who also reported a history of parental psychopathology.

Approximately 30% of the sample met DSM-IV criteria for any lifetime AUD, a higher prevalence than might be anticipated, given Israel's social norms and cultural context regarding alcohol use and misuse. However, two factors must be considered in interpreting this rate. First, 77.4% of the respondents were male, and alcohol disorders are robustly more common in males than in females across settings and samples (e.g., Hasin et al., 2007). Second, respondents older than 45 were excluded since they were uninformative about the research question: alcohol use disorders were very uncommon and parental divorce essentially did not occur in that group. Their inclusion would have resulted in a much lower overall prevalence of lifetime AUD.

The finding that parental divorce and parental psychopathology were independently associated with lifetime AUD is consistent with those in the United States and other countries. Further, the finding that the combined occurrence of parental divorce and parental psychopathology differentially increased the likelihood of offspring lifetime AUD is also consistent with findings in the United States. However, the finding that the effect of parental divorce relative to offspring lifetime AUD ceased to be significant without a history of parental psychopathology was not found previously. These contrasting findings emphasize

the importance of assessing risk factor affects in samples with different social contexts. Further research in countries with different prevalences of AUD and divorce is warranted to determine the role of social norms in the relationships between parental divorce, parental psychopathology, and lifetime AUD. Additional influences preceding parental divorce (e.g., parental ethnic group(s), parent conflict, parenting skills, child maltreatment history), during the dissolution period (e.g., age of child at divorce, meaning of divorce to child, divorce prior to or after emigration), and following parental divorce (e.g., change in income, school, residence, parent-child relationship; which parent was custodial; gender match of custodial parent-child; parental remarriage) should be examined.

To better understand study findings regarding the diminished effect of parental divorce in the absence of parental psychopathology, we considered the broader context of social and economic support in Israel, as compared to the United States. The social norms in Israel regarding the father's responsibility to provide financially for children and remain involved in their lives after divorce might have attenuated the effect of parental divorce on offspring lifetime AUD (Seltzer, 1994). A father's failure to meet financial responsibilities negatively affects both mothers and children (King, 1994; Seltzer, 1991; Teachman and Paasch, 1993). In the United States, about half of divorcing fathers are court-ordered to pay child support and approximately half of noncustodial fathers ordered to pay fail to do so. In contrast, divorcing fathers in Israel generally support their children financially, or the Israeli Office of Social Security provides child support, promoting economic stability in the custodial household (Seltzer, 1994). Additionally, fathers who live closer to their children are more likely to visit them on a regular basis (Arditti, 1992; Arditti and Keith, 1993; Seltzer, 1991; Stephens, 1996). Therefore, because of the small geographic size of Israel, Israeli fathers are likely to be involved in their children's lives after divorce.

In contrast, parental divorce does affect offspring AUD when parental psychopathology is also present. This combination could indicate a more dysfunctional home environment, since parental substance use and psychiatric disorders generally increase the stress and instability of the home environment and parents with psychiatric and substance use problems often exhibit and model maladaptive coping and cognitive styles. Besides these environmental effects, parental psychopathology also indicates underlying genetic liability for substance use and psychiatric disorders (e.g., Kendler et al., 2003), which could play a role in the increased prevalence of AUD in offspring. Thus, the effects of parental psychopathology and the childhood stress due to parental divorce are powerful enough, when combined, to increase risk for AUD. Those without the additional genetic or environmental vulnerability of parental psychopathology may be able to cope more effectively with parental divorce.

Limitations of the study are noted. First, data were based on respondent self-report, which can be affected by recall bias and social desirability (Gmel and Daeppen, 2007; Stockwell et al., 2004; Davis et al., 2010; Del Boca and Darkes, 2003). However, measures were of the type commonly used in large epidemiological studies, a carefully structured interview with considerable reliability and validity evidence was used, and careful quality assurance procedures were followed throughout the study. Second, DSM-IV diagnoses for parental psychopathology from direct interviews were not obtained. However, the AUDADIS family history modules have previously shown good to excellent reliability and validity for parental

family history measures (Hasin et al., 1997; Grant et al., 2003, 1995). Third, the study is cross-sectional and thus causality could not be determined with certainty. Fourth, the present study examined family history of psychopathology, a partial indicator of potential genetic risk. Future studies should include examination of molecular genetic variants in place of family history, which could provide further information on the interactions examined. Fifth, parental divorce (predictor) and parental psychopathology (moderator) were significantly associated. Initial focus on this model without accounting for the association, as we have done, is statistically acceptable (Hayes, 2013; pg. 400). More complex analytic models that account for the association should be developed in the future. Sixth, other offspring psychopathology was not included in our models. Addressing the complex relationships between multiple types of offspring psychopathology without introducing strong multicollinearity into the analytic models would require a different statistical strategy and would address somewhat different research questions than those addressed in the present study. Such investigations should be conducted in future studies.

Concerning strengths, this research builds on related findings in the United States, by examining the relationships between parental divorce and parental psychopathology and offspring lifetime AUD in Israel, a country where both parental divorce and AUD are much less common than in the United States. Findings underscore the importance of conducting further research to identify mechanisms increasing the risk for lifetime AUD among those who experience childhood parental divorce and parental psychopathology, particularly in populations where divorce and AUD show less prevalence.

This is the first study to examine the relationships among parental divorce, parental psychopathology, and offspring lifetime AUD among Israeli adults. Alcohol prevention and treatment professionals should recognize that children who experience parental divorce and/or parental psychopathology could be more vulnerable to later developing AUD than those whose parents remain together and without psychopathology. Patients with histories of parental divorce should be assessed for history of parental psychopathology to identify those in particular need of early intervention for alcohol problems.

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Figure 1. Additive interaction between parental psychopathology and parental divorce on offspring alcohol use disorders (Any AUD) in 797 Israelis (Note: Prevalences adjusted for demographic variables; error bars indicate 95% confidence intervals).

Table 1

Characteristics of Israeli adults among those with and without lifetime alcohol use disorders (N=797).

Variable	No Alcohol Use Disorder (N=561) % (N)	Any Alcohol Use Disorder (N=236) % (N)
Main Predictors		
Parental Divorce (n=107)	10.3 (58)	20.8 (49)
Parental Psychopathology		
Any Psychopathology (N=332)	39.0 (219)	47.9 (113)
Alcohol Use Disorder (N=134)	16.8 (94)	17.0 (40)
Drug Use Disorder (N=8)	1.3 (7)	0.42 (1)
Depression (N=247)	27.5 (154)	39.4 (93)
Antisocial Personality Disorder (N=50)	5.4 (30)	8.5 (20)
Control Variables		
Age (average 32.2 years)		
21–29 years (N=318)	35.3 (198)	50.9 (120)
30–39 years (N=344)	46.5 (261)	35.2 (83)
40–45 years (N=135)	18.2 (102)	14.0 (33)
Sex		
Male (N=617)	71.5 (401)	91.5 (216)
Female (N=180)	28.5 (160)	8.5 (20)
Former Soviet Union Status		
Yes (N=162)	18.2 (102)	25.4 (60)
No (N=635)	81.8 (459)	74.6 (176)

Table 2

Main effects of parental divorce and parental history of psychopathology on any alcohol use disorder (AUD) in 797 Israeli adults.

Predictor		
Parental Divorce	AUD Prevalence (95% CI)	AOR ^a (95% CI)
No (N=690)	0.27 (0.24, 0.31)	2.18 (1.42, 3.34) ^d
Yes (N=107)	0.44 (0.35, 0.53)	
	<i>Prevalence Difference^b</i> 0.16 (0.07, 0.26) ^d	
Parental Psychopathology		
No (N=466)	0.26 (0.22, 0.30)	1.61 (1.17, 2.23) ^c
Yes (N=331)	0.35 (0.30, 0.40)	
	<i>Prevalence Difference^b</i> 0.09 (0.03, 0.16) ^c	

^a adjusted for demographic variables (age, sex, immigrant from former Soviet Union), using logistic regression

^b difference between the “yes” and “no” groups

^c p 0.01;

^d p 0.001

Table 3

Additive interaction effects of parental divorce and parental history of psychopathology on any alcohol use disorder (AUD) in 797 Israeli adults.

Parental History of Psychopathology	Parental Divorce	AUD	Additive Interaction
No (N=466)	No (N=422)	<i>Prevalence^a (95% CI)</i> 0.26 (0.22, 0.30)	<i>Prevalence Difference (95% CI)^b</i> 0.03 (−0.10, 0.16)
	Yes (N=44)	0.29 (0.18, 0.42)	
Yes (N=331)	No (N=268)	<i>Prevalence^a (95% CI)</i> 0.30 (0.25, 0.36)	<i>Prevalence Difference (95% CI)^b</i> 0.24 (0.11, 0.36) ^e
	Yes (N=63)	0.54 (0.43, 0.65)	
			<i>Interaction Contrast^c</i>
			0.21 (.03, 0.39) ^d

^a adjusted for age, sex, immigrant from the former Soviet Union status, using logistic regression

^b Difference between prevalence for parental divorce yes vs. no, calculated on the prevalence (additive) scale using logistic regression with back-transformation

^c Difference of the prevalence differences; additive interaction is indicated when the interaction contrast for the parental psychopathology group vs. the no psychopathology group is significantly greater than 0

^d _p 0.01;

^e _p 0.001