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FAMILIES AND HEAVY DRINKING: IMPACTS ON CHILDREN'S WELLBEING

SYSTEMATIC REVIEW

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Blue Skies research is funded by the Families Commission
Blue Skies Report No 6/06
June 2006

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Giving New Zealand families a voice *Te reo o te whānau*

ISBN 0-478-29264-3

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ACKNOWLEDGEMENTS

This research was part-funded by the Families Commission.
We are grateful for the comments from the peer reviewers.

CONTENTS

1.0 BACKGROUND

The impact of heavy parental or caregiver alcohol use on children and young people is a social issue that urgently requires further research and public debate. Research on alcohol-related harm has historically focused primarily on the negative effects of alcohol consumption on the individual drinker. As a result the wider social costs of alcohol use on children and families (the 'externalities' – costs which do not accrue to the drinker) have not been examined thoroughly, particularly within the New Zealand context. Where the impacts of familial alcohol use have been investigated it has often been in the alcohol problem treatment field.[1] In 2005 a survey carried out by the Centre for Social & Health Outcomes Research & Evaluation (SHORE) in the Auckland region interviewed young people aged 12-17 years and one of their parents/caregivers. The survey found that between 4 and 5 percent of households had at least one parent/caregiver who is a heavy drinker. This figure alone suggests that the issue of the impact of heavy use of alcohol by a parent or caregiver on young people's health and wellbeing requires substantive further consideration.

This review aims to identify and review the current research literature about the impacts of heavy parental alcohol use on children.

1.1 OBJECTIVES

1. To undertake a systematic review of previous international and national research on the impacts of heavy parental alcohol use on children.

2. To identify gaps where further research is needed.

1 A number of major NGOs in the alcohol field globally have summarised these issues and see this as an under-addressed area of concern (www.alcoholconcern.org.uk; www.eurocare.org; www.niaaa.nih.gov).

2.0 METHODOLOGY

2.1 SEARCH STRATEGY

Published literature

Relevant research literature concerning the impact of heavy parental use of alcohol on children was identified by searching the biomedical and social science databases for primary published research material. A total of eight databases (MEDLINE, Web of Science, SSCI, EBM Reviews, ETOH, PubMed, PsychInfo and CINAHL) were searched for publications from 1990 to 2005.[2] In order to capture all relevant studies, the search terms remained broad. These were: 'parent/s or caregiver', plus 'child, children, adolescent, teenager, boys, girls, or youth', plus 'drinking, alcoholism, or alcohol dependence or substance abuse' in the title or abstract. A total of 784 published studies were initially identified from the search criteria.

Grey literature

A number of alcohol and drug-related databases were identified from the ETOH database to search for grey literature (defined as research literature not published in peer-reviewed journals or books). These were the Cork Database, Alcohol Studies Database, Alcohol Advisory Council of New Zealand (ALAC) library database, Alcohol and Drug Council of Australia and the Canadian Centre on Substance Abuse. These databases are not set up for sophisticated searching, therefore searches included the following broad terms: adult COA; children of alcoholics; family and parental drinking.

2.2 CRITERIA FOR CONSIDERING STUDIES FOR THE REVIEW

Studies were eligible for inclusion if:
(a) the focus of the study was the impact of heavy parental use of alcohol or substance abuse (providing alcohol was measured separately)[3]
(b) there was at least one impact on children's wellbeing measured
(c) they were randomised control trials, longitudinal, case control, intervention or cross-sectional studies. Qualitative studies could also be included.

2.3 SELECTION CRITERIA

One author scanned the titles and abstracts of all papers identified and rejected studies that clearly did not meet the review's inclusion criteria. A total of 68 studies that fulfilled the eligibility criteria were obtained as full reports.

2.4 ASSESSMENT OF THE METHODOLOGICAL QUALITY

Quantitative studies selected for inclusion were appraised for methodological quality using an adapted version of the Quality Assessment Tool for Quantitative Studies (Thomas 2004) (see Appendix 1). The quality assessment included: selection bias; allocation bias; confounders; blinding; data collection methods; withdrawals and drop-outs; and analysis. Qualitative studies were quality assessed using the CASP (Critical Appraisal Skills Programme) appraisal tool. The tool comprises 10 questions aimed to consider rigour, credibility and relevance of qualitative research (see Appendix 2). Both assessment tools have been endorsed by the Cochrane Collaboration.

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2 Ten studies which were published before 1990 have been included in this review. These studies were referenced in a number of the articles chosen for the review and were included as they are particularly relevant.

3 The impact of alcohol and other drug taking is often explored under the general heading of 'substance abuse'. While there are some similarities to be drawn between the impacts of both on children and families, there are some important differences between alcohol and other drugs. Alcohol is a legal substance that is widely available and is regarded as an important feature of family and social life. Its misuse affects more families than other drug abuse. Therefore, it is important to tease out the specific impact of problem drinking.

2.5 STRUCTURE OF THE REVIEW

The review comprises three sections and a conclusion. The first section reviews the current research literature on the impacts of heavy parental/caregiver use of alcohol on children; the second section provides discussion on methodological issues; the third section addresses some of the relevant mechanisms involved in the impact on children of heavy drinking parents; and the conclusion provides discussion of the gaps in the literature and draws conclusions.

2.6 DEVELOPING A KEY QUESTION

A key question was developed using PECO, a variation of the PICO format (Population, Intervention, Comparison and Outcome), substituting 'exposure' for an 'intervention'. Through this systematic review, we aim to answer the question:

> In families with parental/caregiver heavy alcohol use, does this have a negative impact on children?

Initial screening of the literature suggested that research studies aim to address key dimensions of children's lives that may be affected by parental/caregiver heavy alcohol use. This led to the development of four sub-questions:

(1) Does parental/caregiver heavy alcohol use negatively impact on children's physical and mental health?

(2) Does parental/caregiver heavy alcohol use negatively impact on children's behaviour?

(3) Does parental/caregiver heavy alcohol use negatively impact on children's educational performance?

(4) Does parental/caregiver heavy alcohol use impact on the onset age and level of alcohol use by children?

3.0 IMPACTS OF HEAVY PARENTAL/CAREGIVER USE OF ALCOHOL ON CHILDREN

To review the relevant literature on the impacts of parental heavy alcohol use on children the research was separated into studies of (1) physical and mental health problems; (2) behavioural deficits; (3) educational performance; and (4) own use of alcohol. These studies hypothesise that children of parents who use alcohol heavily are at risk for a variety of problems:

(1) Physical and mental health problems
Foetal Alcohol Syndrome (FAS) and Attention Deficit Hyperactivity Disorder (ADHD), depressions and anxiety disorders are among a range of health problems that have been researched in children of heavy alcohol using parents.

(2) Behavioural deficits
Many studies of children of alcoholics (COAs) hypothesise that exposure to heavy familial alcohol use results in children externalising behaviours such as attention problems, aggression, delinquency and conduct disorders.

(3) Educational performance
Academic performance of children of alcoholic parents, school drop-out rates, missed school days and children's level of cognitive functioning have been shown to be associated with parental problem drinking.

(4) Early onset and heavy alcohol use by offspring
Studies have examined the relationship between adolescent levels of alcohol use, risky use and abuse and parental alcoholism. Research suggests that heavy drinking by parents increases the likelihood that adolescents will also consume alcohol at high levels.

3.1 TERMS OF ALCOHOL USE

Within the research literature, the terms used to describe 'heavy drinking' vary considerably depending on how alcohol is conceptualised and measured. This review has used the terms used in individual studies; therefore these terms are used interchangeably in the text.

3.2 IMPACTS

3.2.1 Health

(1) Does parental/caregiver heavy alcohol use negatively impact on children's physical and mental health?

Physical
Children of parents who drink heavily appear to be especially vulnerable to a range of physical health problems. Excessive prenatal use of alcohol often results in children being born with Foetal Alcohol Syndrome (FAS). Characteristics of FAS include abnormal facial features, dysfunction to the central nervous system, the presence of behavioural deficits and growth deficiency. FAS is also one of the three leading causes of mental retardation that occurs before the child is born, along with Down's Syndrome and Fragile X Syndrome (World Health Organization 2006). Earlier medical studies showed that children born to mothers who drank heavily during pregnancy displayed twice as many physical abnormalities than children of mothers who were not heavy drinkers (Ouellette, Rosett and Rosman 1977) and exhibited features of altered growth during infancy (Streissguth 1977). Lasting effects of prenatal alcohol exposure on children's development have been documented in longitudinal studies. For example, Russell, Czarnecki, Cowan, McPherson, and Mudar (1991) found that at age six, children exposed to prenatal alcohol abuse showed significantly slower growth in height and head circumference compared with children of abstainers. (On average, children of heavy drinkers were

3.9cm shorter and had a head circumference 1.3cm smaller.) They also found increased physical birth defects; the proportion of children diagnosed as having possible foetal alcohol effects was significantly higher (twice as high) among children of heavy drinkers as it was for children of abstainers or light/moderate drinkers, and significantly higher (approximately four times) among very heavy drinkers.

There is, however, much debate about the range of effects arising from in utero exposure alone. For example, even when children of alcoholic mothers were not born with the physical features of FAS, Nordberg and colleagues found that these children still exhibited what has been described as foetal alcohol effects' (FAE) such as retarded mental development and behavioural problems (Nordberg, Rydelius and Zetterstrom 1994). Increasingly, researchers have argued that prenatal exposure to alcohol is also often followed by adverse childhood exposure to environmental factors including neglect, deprivation and negative behavioural models, associated with caregiver heavy alcohol use (Young 1997).

Children of heavy drinking parents are also at risk for a number of other physical health problems. Kanter, Williams, and Cummings (1992) reported a significantly greater incidence (36.8 percent vs. 21.1 percent) of obese adolescent binge eaters in families with alcohol abusing parents. Similarly, Chandy, Harris, Blum and Resnick (1995) found that female adolescents with heavy drinking parents showed significantly higher prevalence rates of eating disorder symptoms (for example binge eating (38.9 percent of cases vs. 29.6 percent of controls), non-stop eating (21.0 percent of cases vs. 17.0 percent of controls), dieting (68.7 percent of cases vs. 61.7 percent of controls), vomiting and purging (19.5 percent of cases vs. 13.2 percent of controls) and use of Ipecac to induce vomiting (1.9 percent of cases vs. 0.6 percent of controls) and diuretics (3.2 percent of cases vs. 1.7 percent of controls). Chandy and colleagues (Chandy, Harris, Blum and Resnick 1994) also examined the sexual behaviours of female adolescents and found that a significantly greater proportion of females of alcoholic parents reported having sex (51 percent of cases vs. 35 percent of controls) and more pregnancies compared to the general population (9.3 percent of females of alcoholic parents had one or more pregnancies vs. 5.5 percent of the general population).

Hospital admission rates in the children of alcoholics have also been compared to children in families with no exposure to alcoholic parents. In an analysis of hospital admission data, Woodside and colleagues (Woodside, Coughey and Cohen 1993) found that children of alcoholics (birth to 23 years) had higher rates of inpatient hospital admissions and spent more days in hospital than children of non-alcoholics. They also found that children of alcoholics were significantly more susceptible to certain illnesses: mental disorders such as adjustment reactions and depression (9.5 percent vs. 6.3 percent), injuries (fractures, dislocations, and sprains were the most common (19.4 percent vs. 15.4 percent)) and poisonings. Children of alcoholics were also more susceptible to substance use than children of non-alcoholics (3.5 percent vs. 1.5 percent). Of the children admitted to hospital for substance abuse, the majority were treated for alcohol problems.

Psychological (mental health)
The current and previous research literature examining the effects of heavy parental drinking on children is largely dominated by studies of psychological effects. The majority of these studies hypothesise that children of heavy drinking parents are at increased risk of developing psychological problems, most commonly depression and anxiety. Research shows that children of heavy drinking parents experience higher levels of anxiety and depression. Maynard (1997) reported that children of alcoholics experienced higher levels of anxiety and lower differentiations of self than children of non-alcoholics. Children of alcoholics who had received paid professional treatment; and children of alcoholics who had never received professional treatment (but had attended 12-step meetings) were significantly less differentiated (mean scores were 60.6 and 66.5 respectively) than the offspring of non-alcoholics (mean score 74.2). Children with a poorly differentiated 'self' depend heavily on the acceptance and approval of others and adjust what they think, say and do to please others. Significantly higher mean scores for children of these two groups of alcoholics were also found for anxiety (mean scores were 53.6 and 46.4 respectively compared to a mean score of 38.7 for offspring of non-alcoholics), and trait anxiety (mean scores were 54.0 and 46.4 respectively compared to a mean score of 39.6 for the offspring of non-alcoholics).

Similarly, in a study evaluating the contribution of a diagnosis of alcoholism in a parent to the risk of developing child psychiatric diagnoses, Kuperman and colleagues (Kuperman, Schlosser, Lidral and Reich 1999) found that parental alcoholism was associated with increased risks for developing attention deficit hyperactivity disorder (ADHD), conduct disorder (CD) and, particularly for girls, an

increased risk for overanxious disorder (OD). In another study, Reich and colleagues (Reich, Earls, Frankel and Shayka 1993) compared the mental health of a sample of children with one or two alcoholic parents with a control group with no alcoholic parent. Despite finding no overall differences in depression among children of one or two alcoholic parents and controls Reich et al (1993) report that children of alcoholics (one or two parents combined) experienced significantly higher rates of overanxious disorder than children of non-alcoholics.

In a New Zealand birth cohort study, Lynskey and colleagues (Lynskey, Fergusson and Horwood 1994) reported that children exposed to alcoholic parents had significantly higher prevalence rates of adolescent psychiatric disorders than children who were not exposed to alcoholic parents (the proportions for any psychiatric disorder were 25 percent in children whose parents had no alcohol problems, 34 percent in children whose parents had alcohol problems, and 44 percent in children whose parents were alcoholics). The study found that more than 50 percent of COA met the criteria for at least one psychiatric disorder at age 15. Similarly, Hill and Muka (1996) found that high-risk children (based on their maternal family history of alcoholism) manifested significantly more psychiatric diagnoses overall (60.5 percent) and significantly more internalising behaviours (52.6 percent), such as anxiety and mood disorders, than controls who were of non-alcohol-dependent relatives (28.9 percent for overall diagnoses and 26.3 percent for internalising behaviours). Furthermore, these relative odds of psychopathology increased to 30 times that of a child with neither parent being an alcoholic in the same age group (if the child lived with their biological mother and custodial father, who were both alcoholics, and was aged 13 or older). DeLucia and colleagues (DeLucia, Belz and Chassin 2001) also found that children of recovered alcoholic fathers exhibited significantly more internalising (mean score 2.22 for COAs vs. 2.09 for controls) and significantly more externalising behaviours (mean score 1.73 for COAs vs. 1.55 for controls) than children of non-alcoholic fathers.

As part of a study attempting to define indicators of parental alcoholism, Holt and Kaiser (2001) analysed seven-12 year olds' drawings of their families using the Kinetic Family Drawing (KFD) diagnostic tool. This tool was developed to "assess children's perceptions of interpersonal family dynamics salient to the effects of parental alcoholism on children" (Holt and Kaiser 2001:90). The presence of alcohol containers, water themes and isolation of self are some of the indicators the tool uses to determine scores for each drawing. Statistical analysis of scores for drawings from children of alcoholic and non-alcoholic parents revealed significantly higher depictions of isolation of self (mean score for COAs 0.6471 vs. 0.1178 for controls) and of other family members (mean score for COAs 0.6078 vs. 0.0588 for controls) in alcohol abusing families.

Psychiatric disorders in adult children of problem drinkers have also been studied extensively. Belliveau and Stoppard (1995) found that adult children of alcoholics (ACA) reported more symptomatology indicative of depression (unweighted mean score 5.88 for ACA vs. 5.27 for non-ACA) and general maladjustment (psychoticism: unweighted mean score 6.15 for ACA vs. 5.77 for non-ACA; and neuroticism: unweighted mean score 5.62 for ACA vs. 5.38 for non-ACA) than adult children of non-alcoholics. Cuijpers and colleagues (Cuijpers, Langendoen and Bijl 1999) investigated the risk of psychiatric disorders in adult children of alcoholics in the Dutch population. Results showed that these adult children had a significantly higher lifetime prevalence of mood disorders (33.6 percent vs. 17.6 percent), anxiety (28.2 percent vs. 18.4 percent) and abuse/dependence disorders (28.5 percent vs. 17.7 percent) than adult children of non-alcoholics. Furthermore, adult sons of problem drinkers also had a significantly higher prevalence of eating disorders (2.0 percent vs. 0.1 percent) and schizophrenia (1.6 percent vs. 0.3 percent). In a retrospective study examining anxiety disorder symptoms in adult children of problem drinkers, MacPherson and colleagues (MacPherson, Stewart and McWilliams 2001) found that exposure to distressing parental problem drinking behaviours contributed to the development (as a modest mediator, OR=0.24) of anxiety symptoms over and above the role of parental alcoholism.

3.2.2 Behavioural issues and problems

(2) Does parental/caregiver heavy alcohol use negatively impact on children's behaviour?

There are many studies that support an association between parental alcoholism and subsequent behavioural problems in their offspring. Studies of infants exposed to alcohol abusing parents have shown the early presence of behavioural problems as well as longlasting effects of their exposure. Edwards and colleagues (Edwards, Leonard and Das Eiden 2001) assessed children of non-alcoholic

parents, paternal alcoholic parents and light drinking mothers, and families with alcoholic fathers and heavy drinking mothers. When assessed at 12 months old, infants of alcoholics displayed significantly more stubborn and unrelenting temperaments than controls (as assessed by both parents, mean scores of the alcoholic parents were 13.92 by the mother and 13.25 by the father vs. the mean scores of the control parents: 13.16 by the mother and 12.83 by the father) and showed significantly more internalising problems at 18 months old than infants in the control group (as assessed by both parents, mean scores of the alcoholic parents were 31.30 by the mother and 31.88 by the father vs. the control parents: 30.31 by the mother and 30.69 by the father). A study by Eiden and colleagues (Eiden, Leonard and Morrisey 2001) examined the effect of fathers' alcoholism on toddler compliance with parents during clean up after free play. Compared to a control group of families with non-alcoholic parents, sons of families with an alcoholic father showed significantly higher rates of non-compliance. Increasing rates of non-compliance were further observed in families with two alcohol problem parents.

Evaluation of play sessions of preschool children from families characterised to be at high or low risk for developing alcohol dependence showed that children from high-risk families, when paired with children from a control group during play sessions, spent more time staring at the other child (on average 39 seconds longer) and refrained from engaging in play, and significantly less time speaking to the other child compared to children of low-risk families (on average there was 66 seconds less communication) (Lowers, Hill, Locke, Snidman and Kagan 1999). A recent study of preschool children's effortful control, described as "the capacity to plan and suppress inappropriate approach responses under instruction" (Kochanska, Murray, Jacques, Koenig and Vandegeest 1996) which emerges over the second and third years of life, revealed that boys of alcoholic fathers exhibited significantly lower overall levels of effortful control than boys of non-alcoholics (Eiden, Edwards and Leonard 2004). Theoretical assumptions about the development of effortful control suggest that quality of parenting plays a key predictive role in such development and that parenting quality is significantly affected by the presence of alcoholism.

Studying early behavioural outcomes in children aged three-eight years, Puttler and colleagues (Puttler, Zucker, Fitzgerald and Bingham 1998) further characterised paternal alcoholism beyond low- and high-risk categories to examine the impact of different subtypes of paternal alcoholism. Families were characterised as non-alcoholic controls, non-antisocial alcoholics and antisocial alcoholics. Children from both groups of alcoholics were reported to have more total behaviour problems than controls, and children from antisocial alcoholic families had significantly greater behavioural problems than children from non-antisocial alcoholic families. In a study using a sample from the general population, Connolly and colleagues (Connolly, Casswell, Stewart, Silva and O'Brien 1993) looked at parent and teacher reports of children's behaviour at ages nine and 13 in alcohol and non-alcohol problem families. Data on alcohol problems in the family were gained from parents' responses to open-ended face-to-face questioning about their drinking. At age nine, teachers reported significantly higher levels of problem behaviour in children of parents with severe alcohol problems compared to children of parents without severe alcohol problems (35 percent vs. 12 percent), whilst parents' reports were not significantly different. In contrast, parents with severe alcohol problems reported significantly higher levels of problem behaviours in their children at age 13 (20 percent vs. 11 percent), whilst teachers' reports were not significantly different.

Studies of behavioural problems in older children and adolescents of alcohol abusing families have tended to focus on aggressive/conduct disorders and delinquency. In a large study using data from the National Household Survey on Drug Abuse (NHSDA), Obot and Anthony (2004) assessed 1,729 parent-child pairs living in the same household to determine actively alcohol dependent parents and parents who were not alcohol dependent (control group). Statistical analyses showed that children living with alcohol dependent parents had significantly higher delinquency and aggressive behaviour scores compared to control children. Similarly, information based on a non-representative sample of hospital treated youth revealed that sons of substance abusing (either alcohol or other substances) parents had significantly more conduct disorder diagnoses compared to girls of substance abusing parents. Girls of substance abusing (either alcohol or other substances) parents were significantly more likely to have attention deficit/hyperactive and aggressive disorders but no significant differences in conduct disorder problems were found when compared with girls of non-substance abusing parents (Gabel and Shindledecker 1992).

However, not all studies agree that the presence or absence of alcohol problems in families is related to problems externalised in childhood, such as aggression and delinquency. Ritter and colleagues (Ritter, Stewart, Bernet, Coe and Brown 2002) examined the effects of childhood exposure to familial

alcohol abuse and violence on adolescent self-esteem, deviant behaviours and substance abuse. Results from five waves of structured interviews conducted over a six-year period showed that exposure to family violence accounted for a greater proportion of variance in some domains of adolescent functioning and for some domains the effect was over and above that of exposure to alcohol abusing family models. The nature of this relationship varied across different domains and by gender. For example, female adolescents were at increased risk of developing deviant conduct disorders due to exposure to family violence and alcohol abusing families than females only exposed to alcohol abusing families. However, the same was not shown in male adolescents.

The vast literature on the impact of familial alcohol abuse on children includes a number of studies that have shown paternal alcohol abuse to have greater impact than maternal alcohol abuse on childhood behavioural outcomes. A large sample of Australian children, selected from a larger birth cohort study of pregnancy, was followed up at 15 years old. Results indicated a small but significant correlation between paternal alcohol use disorders (AUDs) and child violent (r=0.13) and non-violent (r=0.10) delinquency but not for maternal AUDs (Grekin, Brennan and Hammen 2005). Similarly, a study that examined trajectories of disruptive behaviour problems among sons of alcoholics from preschool age to adolescence found that paternal alcoholism only was associated with elevated levels of sons' disruptive behaviour problems. This remained a unique effect even when the presence of maternal alcoholism, parent anti-social personality disorder (ASPD) and family conflict were accounted for. However, as noted in other studies, the size of effect associated with paternal AUDs was small (r=0.26) and accounted for only a small proportion of the variance in child delinquency (Loukas, Zucker, Fitzgerald and Krull 2003).

In light of these findings it is useful to consider studies that examine the degree to which family loading of alcoholism relates to externalising behaviours. For example, Barnow and colleagues (Barnow, Schuckit, Smith, Preuss and Danko 2002) found that only children who had three or more alcoholic relatives scored significantly higher values on the Childhood Behavioural Checklist (CBCL) for attention and delinquent behavioural problems. When children had no, one or two alcoholic relatives, no significant differences between values on the CBCL were observed. The researchers concluded that "a greater density of alcoholism within the family might relate to higher rates of externalizing systems, such as attention problems and delinquency in children" (Barnow et al 2002:385).

3.2.3 Educational performance

(3) Does parental/caregiver heavy alcohol use negatively impact on children's educational performance?

Lower levels of academic and cognitive functioning in children of alcoholics have been widely documented. Deficits in selective areas of cognitive functioning in children of active alcoholics were reported by Ozkaragoz and colleagues (Ozkaragoz, Satz and Noble 1997). These included visuospatial skills, attention and memory deficits. Similarly, Tarter and colleagues (Tarter, Jacob and Bremer 1989) reported lower verbal IQ and attention of children of alcoholic fathers. In addition, McGrath and co-workers (McGrath, Watson and Chassin 1999) found that parental alcoholism had a significant negative effect on English and mathematics grades. In other studies, elementary school-aged children of alcoholics scored significantly lower on mathematics and reading tests and were more often placed in special education classes (Marcus 1986; Hyphantis, Koutras, Liakos and Marselos 1991). Furthermore, Corrao and colleagues (Corrao, Busellu, Valenti, Lepore, Sconci, Casacchia and di Orio 1993) found that children's global functioning levels significantly decreased as reports of alcohol-related problems in the families increased.

A number of explanations for lowered academic functioning and cognition in children of problem drinkers can be found in the literature. Neuropsychological explanations implicate a biological basis for cognitive deficits (Tarter et al 1989), however; evidence for such explanations is inconsistent. Much of the research literature supports an association between poor level of functioning and the family social environment. According to Casas-Gil and Navarro-Guzman (2002), children of problem drinkers constitute an at-risk population for poor academic performance due to missed school days and school drop-out. In their study of 108 children of alcohol misusing parents, repeating a grade, skipping school days and dropping out of school were more common in children of alcoholics than in children of non-alcoholic parents. Similarly, de Marsh and Kumpfer (1986) found that children of alcoholics who performed poorly in school lacked parental supervision, received less help from parents with schoolwork, were frequently absent from school and were poorly clothed and fed. Other researchers

suggest that lowered academic performance in children of alcoholics may be due to observed negative perceptions of academic competence. For example, Johnson and Rolf (1988) found significant differences between mothers' and children's ratings of academic abilities. The abilities of children of alcoholics were underestimated by both their mothers and themselves which, the authors suggest, may affect their motivation to achieve (Johnson and Rolf 1988).

3.2.4 Early onset and heavy alcohol use by offspring

(4) Does parental/caregiver heavy alcohol use impact on the onset age and level of alcohol use by children?

The relationship between parental misuse of alcohol and subsequent alcohol-related problems in their children dominates much of the research literature. In general these studies have found that parental problem drinking is associated with an increased rate of alcohol abuse in their offspring. In a longitudinal study exploring alcohol dependence in adult children of alcoholics, Jennison and Johnson (1998) found that sons of alcoholics drink significantly more heavily, experience problem drinking earlier and develop alcohol dependence more extensively than adult children of non-alcoholics. Lieb and colleagues (Lieb, Merikangas, Hofler, Pfister, Isensee and Wittchen 2002) examined the association between parental alcohol use disorders and patterns of alcohol consumption in their offspring in a community-based study. Results showed that parental alcoholism was significantly associated with a higher escalation of alcohol use and development of alcohol use disorders in their offspring. Furthermore, Lindgaard (2005) found that not only do adult children of alcoholics develop alcohol problems of their own but they are also much more prone to be involved in a relationship with an alcoholic.

Commonly, studies that have explored parental problem drinking and risk of later alcohol problems in offspring have identified fathers as the alcohol abuser and have considered the impact on sons only. Such studies largely support the hypothesis that children (in particular, sons) of alcoholic fathers are more likely to develop problem drinking behaviours. However, in contrast, there are a small number of studies that have reported the influence of female alcohol abusing parents as a distinct group. For example, exploring the influence of paternal drinking on the development of alcohol disorders in offspring, Zhang and colleagues (Zhang, Wang, Lu, Qiu and Fang 2004) found that maternal frequent use of alcohol was a significant risk factor for their offspring's alcohol abuse. Fathers' drinking behaviour was not a significant risk factor for offspring's alcohol abuse. Similarly, in a study of adolescents of substance abusing parents, Ohannessian and co-workers (Ohannessian, Hesselbrock, Kramer, Bucholz, Schuckit, Kuperman and Nurnberger 2004) found that worry or concern about mothers drinking or using drugs was significantly more associated with adolescent alcohol dependence ($r=0.67$) and major depressive disorder ($r=0.47$) than worry or concern about paternal drinking, which was associated only with adolescent alcohol dependence ($r=0.45$). Overall, this small group of studies allows few conclusions to be drawn. However, the studies point to the need to further consider maternal problem drinking as a distinct group.

4.0 METHODOLOGICAL CONSIDERATIONS

This section firstly addresses the more general methodological considerations relevant to this review; secondly it reviews more specifically the studies that were quality assessed in this review.

Of the 68 texts appearing in the evidence tables in Appendix Three, 24 of these are case-control studies, 18 are longitudinal studies, 12 are cross-sectional studies, seven are review articles, one is a qualitative study, four are methodological papers, one is a book, and one is a website. Every article except the seven review articles (Streissguth 1977; DeMarsh and Kumpfer 1986; Young 1997; Graham, Leonard, Room, Wild, Pihl, Bois and Single 1998; Johnson and Leff 1999; Hayes, Smart, Toumbourou and Sanson 2004; Rydelius 1997); the four methodological papers (Rossow and Hauge 2004; Dodge, Pettit and Bates 1994; McLoyd 1990; Moos and Moos 1981); the book by Saggers and Gray (1998); and the website (WHO 2006) have been quality assessed. (Due to the nature of these publications it was not appropriate to quality assess them.)

Please note there were no intervention studies or randomised controlled trials available to be reviewed (from the 784 texts obtained from our initial search).

4.1 QUALITY ASSESSMENT TOOL

The quality assessment tool used in this review is constructed so that Randomised Controlled Trials (RCTs) are ranked as the 'gold standard' of study design for minimising allocation bias. In the subject area of this review it is not ethically appropriate to use RCTs. Thus all the studies reviewed can only be described as either moderate in minimising allocation bias if their study design is longitudinal or weak in minimising allocation bias if their study design is cross-sectional or case-control.

The details of how the quality review tool is summed and an overall rating given to each study are detailed in Appendix One. Essentially, six categories are assessed for each study (excluding qualitative studies). If one of these categories is rated 'weak' it means that the study overall can reach a rating of moderate or weak (not strong). As only 18 of the studies reviewed were longitudinal (and therefore received a rating of moderate for allocation bias) it meant that most of the studies assessed in this review had at least one rating of 'weak' due to the nature of the study design and therefore had an overall rating of weak. Eighteen longitudinal studies were moderate in minimising allocation bias and the 37 cross-sectional and case-control studies were weak in minimising allocation bias.

4.2 SAMPLE SELECTION

An issue that affects a number of the studies, especially the longitudinal and case-control studies is that many studies that have examined the effects of heavy parental alcohol use have often relied on relatively small and selected samples including children of alcoholics (COAs) and alcoholic parents in treatment settings. This poses a number of potential limitations. Children's reports of parental alcoholism have been shown to underestimate parental alcohol use (Sher, Walitzer, Wood and Brent 1991) and clinical samples may overestimate pathology by focusing on more severely impaired patients (Chassin, Pitts, DeLucia and Todd 1999).

4.3 BIAS DUE TO CONFOUNDING

A confounding factor in a study is a variable which is related to one or more of the variables defined in a study. A confounding factor may mask an actual association or falsely demonstrate an apparent association between the study variables where no real association between them exists. If confounding factors are not measured and considered, bias may result in the conclusion of the study.
From the studies quality assessed in this review, generally most of the longitudinal studies measured potential confounders and adjusted for them during analysis and the majority of the case-control studies did the same. However, most of the cross-sectional studies did not attempt to measure confounders or adjust for them in their analysis.

In total, 25 of the studies are rated strong for controlling for bias due to confounders either in their design or in their analysis of the data and a further seven are rated as moderate on this criteria. Twenty-three of the studies are rated weak in controlling for bias due to confounders either in their design or their analysis of the data which may compromise the validity of the findings.

4.4 RELEVANCE TO THE NEW ZEALAND CONTEXT

The limited number of New Zealand studies in the current research literature poses a methodological problem in terms of comparability of cross-cultural findings. Given that the majority of studies were conducted in the United States and European countries, there are issues as to whether (a) New Zealand patterns of familial alcohol use are similar and, (b) whether the mechanisms of alcohol use are comparable across such populations. Saggers and Gray explored the impact of alcohol on indigenous populations within New Zealand, Australia and Canada and pointed out, "the complexity of indigenous drinking patterns and the fact that many of their people drink rather differently from non-indigenous people" (Saggers and Gray 1998:13).

4.5 DEFINITION OF HEAVY ALCOHOL USE

There is a lack of a consistent definition of heavy drinking in the studies that were quality assessed. As different health and wellbeing outcomes for children of heavy drinking parents/families may be seen at different levels of parental/family alcohol consumption, this is an important issue to consider when comparing findings.

4.6 METHODOLOGICAL COMMENT ON SPECIFIC STUDIES

Longitudinal studies
Of the 18 longitudinal studies quality assessed in this review, several had sample sizes of 1,000 or more participants (for example Lynskey et al 1994; Connolly et al 1993; Lieb et al 2002; Ritter et al 2002), with the largest studies by far being Jennison and Johnson (1998) and Chatterji and Markowitz (2000). There were four studies with between 500 and 1,000 participants (Nordberg et al 1994; Farrel, Barnes and Banerjee 1995; Ouellette et al 1977; Grekin et al 2005). The remaining studies consist of several hundred participants (for example DeLucia et al 2001; Chassin et al 1999; Jester, Jacobson, Sokol, Tuttle and Jacobson 2000).

Of the larger studies, Jennison and Johnson (1998), Chatterji and Markowitz (2000) and Lieb et al (2002) are the most representative of the general population as the sampling of participants was designed as such. The birth cohorts of Lynskey et al (1994), Connolly et al (1993), and Grekin et al (2005) are representative of those who were born in the specific locations at the given time they were recruited into their respective cohorts. So in general these studies have less selection bias than the other longitudinal studies in this review.

However, some of these longitudinal studies' findings relate to only certain segments of a population such as Jester et al (2000) whose study has only African-American women (and children), and DeLucia et al (2001) and Chassin et al (1999) whose participants are either Hispanic or non-Hispanic white ethnicity only. Other studies' participants such as Edwards et al (2001), Eiden et al (2001) and Eiden et al (2004) are mainly white. Hence selection bias is an issue in these studies.

Overall, most longitudinal studies accounted for confounding factors in the study design, measures and analysis.

Case-control studies
Of the 24 case-control studies, seven are matched case-control studies and 17 are non-matched case-control studies. In 13 of these studies the total sample size of controls and cases is over 100. In most of these studies the cases and controls were volunteers from particular sources. Cases were either alcoholic parents or children of alcoholics from sources such as hospital or treatment facilities. In eight

studies cases and controls came from a selected sub-sample of a larger longitudinal study and thus may or may not be representative of some general population depending on how representative the original longitudinal sample was. Some studies correctly recruited controls from a random sample of the community from which the cases came from and these studies were more likely to have less biased results than other studies where controls were not selected from the same underlying population as the cases.

Most of the case-control studies accounted for confounding factors in the design of the study, measures and analysis.

Cross-sectional studies
Of the 13 cross-sectional studies, the largest and most representative samples of particular populations were either studies of school-aged adolescents (such as Chandy et al (1994, 1995), N=36,254 Minnesota high school students and Hyphantis et al (1991), N=7,904 Greek high school students) or from national or area-based surveys of populations (such as Cuijpers et al (1999) Netherlands Mental Health Survey for those aged 18-64 (N=7,147), Obot and Anthony (2004), National Household Drug Survey (N=1,729) and Zhang et al (2004), Wuhan City residents aged 15-65 (N=2,327)).

Many of the other cross-sectional studies suffer from small sample sizes and the use of non-representative populations from sources such as hospitals (inpatients and discharge patients), outpatient treatment centres, and other non-random community samples and hence their results are subject to selection bias and the findings are not readily transferable to the particular general populations.

The cross-sectional studies did not attempt to measure or adjust for confounding factors.

4.7 CONTRADICTORY OR AMBIGUOUS FINDINGS

The majority of studies in this review found harmful impacts on the health and wellbeing of children who have parents/relatives who are heavier drinkers.

There were some areas where contradictory results were found. Not all studies agreed that, for example, externalising behaviour problems such as aggression and delinquency in children were related to alcohol problems in families. Obot and Anthony (2004) and Gabel and Shindledecker (1992) reported that externalising behaviour problems such as delinquency were more likely to occur in children of substance abusing parent(s) than of non-abusing parents. Ritter et al (2002), however, found that family violence was a far greater predictor of deviant behaviour/conduct disorder for girls than an alcohol abusing family.

Most studies have identified paternal alcohol abuse as most problematic. Such studies hypothesise that children (in particular, sons) of alcoholics are more likely to develop problem drinking behaviours. In contrast, Zhang et al (2004) found that maternal frequent use of alcohol was a significant risk factor for offspring's alcohol abuse (please note this is a cross-sectional study) and Chatterji and Markowitz (2000) found maternal alcohol use was associated with increases in behavioural problems. Barnow et al (2002) only found an effect for hyperactivity and delinquency when a child had three or more alcoholic relatives.

5.0 MECHANISMS INVOLVED IN THE IMPACT ON CHILDREN OF HEAVY DRINKING PARENTS

5.1 PARENTAL CONFLICT

Disruption of marital bond through parental conflict impacts on the parent's behaviour toward the child and relations between parents (Jester et al 2000). Studies have shown that parents who use alcohol heavily display lower levels of cohesion and expressiveness and higher levels of conflict (Moos and Moos 1984), which can lead to psychological distress in children or anger and hostility between parents and children (McLoyd 1990).

5.2 VIOLENCE AGAINST CHILDREN

Alcohol intoxication produces cognitive distortions, affecting the perception and interpretation of other people's behaviour, so that ambiguity and misrepresentations in social interactions may evolve into aggressive behaviour (Rossow and Hauge 2004). A number of studies have reported that violence against children and other forms of abuse are more often seen among children of heavy drinkers compared with other children (Haugland 2005; Reich, Earls and Powell 1988; Rydelius 1997). The literature suggests that alcohol-related violence against children occurs because intoxication is viewed as a 'time-out' period from normal behaviour or because of 'deviance disavowal' aspects of intoxication, whereby the parent may be violent towards the child and subsequently disclaim responsibility, attributing the blame to the alcohol (Graham et al 1998).

5.3 PARENTAL ABSENCE

Parents who are heavy users of alcohol are often either physically absent or emotionally absent (or both) from their child's life. Children are often left at home alone or with friends when the parents go out to drink, leaving children unmonitored. Instances of detoxification often result in the parent being absent and the children residing with grandparents, other relatives or foster parents. Parental drunkenness can also result in the absence of a reliable parental figure and positive role model along with an absence of interest shown in the child's life. In addition, young adult children of parents with drinking problems commonly reported that their parents often had a tendency to fail to join in with family activities (Velleman and Orford 1990).

5.4 LIVING STANDARDS

Economic deprivation and stress are commonly emphasised in the research literature as being potential risks to children in alcohol abusing families. Whether there is enough money to buy food and provide clothing, whether children adopt compensatory 'caretaking' roles within alcoholic families and whether social networks that enable children to participate in regular activities are among some of the questions the current literature sets out to address.

The effect of parental heavy use of alcohol on children has been compared to the effect of poverty, which also leads to a wide variety of non-optimal outcomes (Dodge et al 1994). However, findings indicate that heavy alcohol use contributes to a poorer child-rearing environment above and beyond the effects of economic deprivation, such as reduced involvement in sports, hobbies and social activities and poorer intellectual stimulation and a family environment with less cohesion and organisation (Jester et al 2000).

With respect to the overall negative impact of parental drinking, the effect on children's living situations has been one area that has received less attention. The potential negative consequences include loneliness and isolation, boredom, inability to participate in family activities and disruption to family routines. Such consequences often have both immediate and longlasting effects on children. For

example, Ross and Hill (2004) reported significantly higher scores (less predictability in the behaviours and regulatory systems of the family) on scales of nurturance, finances and discipline in their clinical observations of alcoholic compared to non-alcoholic families. Less predictability within families often reflects lower levels of cohesion, increased stress and family disorganisation. In order to evaluate cohesion and organisation within alcohol abusing families, Moos and Moos (1981) developed the Family Environment Scale (FES). The scale measures family members' perceptions of the family in three ways – as it is (real), as it would be in a perfect situation (ideal) and as it will probably be in a new situation (expected). Moos and Moos (1981) found lower levels of cohesion and active recreational orientation in families of relapsed alcoholic parents compared with community controls. These data have been consistently replicated even when using considerably different cohorts. For example, examining the effect of maternal heavy drinking on the child-rearing environment of disadvantaged African-American families, Jester et al (2000) found that frequent heavy drinking mothers scored lower on scales of cohesion and organisation, including, for example, feelings of togetherness and support, planning, keeping the house neat, and involvement in sports, hobbies and social activities. Not surprisingly, lower levels of cohesion and higher levels of conflict within families often result in various agency involvements. For example, Mutzell (1995) found that children of alcoholic mothers had more contacts with educational welfare officers during childhood and a higher rate of registration in the children's welfare committee registers than children of women from the general population. Mutzell (1995) also found that children of alcoholic families had significantly more foster care placements than general populations and other at-risk families.

Family cohesion can buffer the effects of fathers' drinking problems on adolescent distress, deviance and heavy drinking. Farrell et al (1995) found that increased cohesion within families with alcohol abusing fathers resulted in less distress, fewer stressful events, less adolescent deviance and less heavy drinking by adolescents. Braithwaite and Devine (1993) also found that low family cohesiveness and reduced intimacy in alcohol abusing families were major determinants of children's psychopathology. Although lack of intimate relationships was a more powerful predictor of serious maladjustment in children of alcoholics, the authors argue that alcoholic parents severely disrupt family interactions, which in turn affects child psychopathology.

5.5 PARENTAL CONTROL/SUPERVISION

Heavy drinking parents are less likely to supervise their children and monitor their behaviour (Heide et al 1997). Children often grow up without appropriate and set boundaries due to inconsistent parenting practices. Poor parental monitoring/supervision is a powerful predictor of adolescents' engagement in alcohol use at an earlier age, heavy drinking and the great risk of the development of problematic drinking patterns (Hayes et al 2004).

6.0 DISCUSSION AND CONCLUSIONS

6.1 GAPS IN THE RESEARCH

The research literature currently has a number of gaps. Firstly, there is a large gap in New Zealand research on the impact of heavy drinking on children and families. We do not have a good estimate of how many children are likely to be living in households in New Zealand with one or more relative who is a heavy drinker. Little is known of the impacts of heavy drinking behaviour on children's and adolescents' physical and mental health, behaviour, educational performance and alcohol use in Māori and Pacific families, despite disproportionate heavy use as evidenced by drinking surveys. Some implications can be drawn from the literature on the history of indigenous drinking practices as well as the studies on the effects of drinking on children in low-income families. However, given that many Māori and Pacific families are already experiencing socio-economic disadvantage, it might be expected that the poverty cycle and negative impacts on children would be exacerbated by the addition of parental alcohol abuse problems. Further research is needed to understand the specific dynamics and impacts on children in Māori and Pacific families.

Most studies examine exposure and outcome measures, for instance, children's behaviour or social environment at one point in time (cross-sectional, case-control). It is, therefore, difficult to attribute causality, if a child shows true behavioural deficits or developmental delay as a consequence of parental drinking (Johnson and Leff 1999). Internationally and locally there are relatively few longitudinal studies within the current body of literature specifically addressing the impact of heavy drinking in families. This review has found that longitudinal studies are the most methodologically rigorous study design in this area and there is a need for such studies. Longitudinal design may also allow questions of causality to be addressed.

As mentioned previously, many studies that have examined the effects of heavy parental alcohol use have often relied on relatively small and selected samples including children of alcoholics (COAs) and alcoholic parents in treatment settings. Limitations include: children underestimate parental alcohol use (Sher et al 1991) and clinical samples may overestimate pathology by focusing on more severely impaired patients (Chassin et al 1999). Furthermore, there is a much greater incidence of heavy drinking parents that do not either acknowledge drinking as a problem or remain undiagnosed and are therefore not identified in clinical samples. There is a need for research among the general population, both internationally and locally.

Other issues which remain of interest and unresolved are the potentially different roles of maternal and paternal drinking and also the effect due to damage of the fetus (FAS and FAE) as compared with subsequent drinking.

A number of previous studies have adopted quantitative measures and used standardised tools, many of which are borrowed from a psychiatric context, to determine the impact of parental drinking on children. The relative absence of qualitative research[4] and reliance on standardised tools may too often categorise rather than describe a complex group of individuals. Causality may be better understood if we knew more about the mechanisms and pathways involved in the impact on children of heavy drinking parents. Qualitative research with children and families may lead to a better understanding of alcohol misuse and the impact it has on children's lives.

4 Of the 784 texts originally obtained, from which the studies for this review were selected, approximately 20 were qualitative.

6.2 CONCLUSIONS

In general, many studies have found that parental alcohol problems are associated with a range of negative outcomes in children and adolescents, including poorer physical and psychological health, educational and behavioural deficits, and an increased rate of subsequent alcohol problems. While most of the studies were rated as weak due to methodological problems (such as selection bias, allocation bias, failure to control for confounders, lack of binding and attrition), there was consistency across the studies and they demonstrated impacts on the offspring of heavier drinkers.

The research literature in general supports these conclusions:

1) Relationships exist between heavy drinking parents/caregivers and risk for higher hospital admission rates and higher rates of injuries and poisoning rates for children and adolescents. Also, Foetal Alcohol Syndrome (FAS) and Foetal Alcohol Effects (FAE) for children in utero.

2) Relationships exist between heavy drinking parents/caregivers and risk for eating disorders (for females), anxiety, mood disorders, depression, conduct disorders, aggression, disruptive behaviour disorders, attention deficit/hyperactivity, delinquency and psychiatric disorders for children and adolescents.

3) Relationships exist between poorer educational achievement of children and adolescents of heavy drinking parents/families that are likely due to the poor level of family functioning and social environment.

4) Relationships exist between heavy drinking parents/caregivers and the subsequent heavy alcohol use and related problems in adolescence.

5) Important mechanisms involved in the impact on children of heavy drinking parents/caregivers include: parental conflict; violence against children; parental absence; living standards; and parental control/supervision.

6) There is a need for longitudinal and qualitative research, both locally and internationally. Studies on the general population are lacking (and there is very limited research and information on impacts within Māori and Pacific families in New Zealand).

REFERENCES

Barnow, S., Schuckit, M., Smith, T.L., Preuss, U., & Danko, G. (2002). 'The real relationship between the family density of alcoholism and externalizing symptoms among 146 children'. *Alcohol & Alcoholism*, 37(4):383-387.

Belliveau, J.M., & Stoppard, J.M. (1995). 'Parental alcohol-abuse and gender as predictors of psychopathology of adult children of alcoholics'. *Addictive Behaviors*, 20:619-625.

Braithwaite, V., & Devine, C. (1993). 'Life satisfaction and adjustment of children of alcoholics – the effects of parental drinking, family disorganization and survival roles'. *British Journal of Clinical Psychology*, 32:417-429.

Casas-Gil, M.J., & Navarro-Guzman, J.I. (2002). 'School characteristics among children of alcoholic parents'. *Psychological Reports*, 90:341-8.

Chandy, J.M., Harris, L., Blum, R.W., & Resnick, M.D. (1994). 'Female adolescents of alcohol misusers – sexual behaviors'. *Journal of Youth and Adolescence*, 23:695-709.

Chandy, J.M., Harris, L., Blum, R.W., & Resnick, M.D. (1995). 'Female adolescents of alcohol misusers – disordered eating features'. *International Journal of Eating Disorders*, 17:283-289.

Chassin, L., Pitts, S.C., DeLucia, C., & Todd, M. (1999). 'A longitudinal study of children of alcoholics: Predicting young adult substance use disorders, anxiety, and depression'. *Journal of Abnormal Psychology*, 108:106-119.

Chatterji, P., & Markowitz, S. (2000). *The impact of maternal alcohol and illicit drug use on children's behavior problems: Evidence from the children of the National Longitudinal Survey of Youth.* Working Paper 7692. National Bureau of Economic Research, Cambridge, MA.

Connolly, G.M., Casswell, S., Stewart, J., Silva, P.A., & O'Brien, M.K. (1993). 'The effect of parents' alcohol problems on children's behaviour as reported by parents and by teachers'. Addiction, 88:1383-90.

Corrao, G., Busellu, G., Valenti, M., Lepore, A.R., Sconci, V., Casacchia, M., & di Orio, F. (1993). 'Alcohol-related problems within the family and global functioning of the children: A population-based study'. *Soc Psychiatry Psychiatr Epidemiol*, 28:304-8.

Cuijpers, P., Langendoen, Y., & Bijl, R.V. (1999). 'Psychiatric disorders in adult children of problem drinkers: Prevalence, first onset and comparison with other risk factors'. *Addiction,* 94(10):1489-98.

DeLucia, C., Belz, A., & Chassin, L. (2001). 'Do adolescent symptomatology and family environment vary over time with fluctuations in paternal alcohol impairment?' *Developmental Psychology*, 37:207-216.

de Marsh, J., & Kumpfer, K. (1986). 'Family-oriented interventions for the prevention of chemical dependency in children and adolescents'. In S. Ezekoye, K. Kumpfer, & W. Bukoski (Eds.), *Childhood and chemical abuse.* Prevention and intervention. Haworth Press, New York, NY.

Dodge, K., Pettit, G., & Bates, J.E. (1994). 'Socialization mediators of the relation between socioeconomic status and child conduct problems'. *Child Development*, 65:649-665.

Edwards, E.P., Leonard, K.E., & Das Eiden, R. (2001). 'Temperament and behavioral problems among infants in alcoholic families'. *Infant Mental Health Journal*, 22:374-392.

Eiden, R.D., Edwards, E.P., & Leonard, K.E. (2004). 'Predictors of effortful control among children of alcoholic and nonalcoholic fathers'. *Journal of Studies on Alcohol*, 65:309-19.

Eiden, R.D., Leonard, K.E., & Morrisey, S. (2001). 'Paternal alcoholism and toddler noncompliance'. *Alcoholism: Clinical Experimental Research*, 25:1621-1633.

Farrell, M.P., Barnes, G.M., & Banerjee, S. (1995). 'Family cohesion as a buffer against the effects of problem-drinking fathers on psychological distress, deviant behavior, and heavy drinking in adolescents'. *Journal of Health and Social Behavior*, 36:377-385.

Gabel, S., & Shindledecker, R. (1992). 'Behavior problems in sons and daughters of substance abusing parents'. *Child Psychiatry & Human Development*, 23:99-115.

Graham, K., Leonard, K., Room, R., Wild, C., Pihl, R.O., Bois, C., & Single, E. (1998). 'Current directions in research on understanding and preventing intoxication and aggression'. *Addiction*, 93:659-676.

Grekin, E.R., Brennan, P.A., & Hammen, C. (2005). 'Parental alcohol use disorders and child delinquency: The mediating effects of executive functioning and chronic family stress'. *Journal of Studies on Alcohol*, 66:14-22.

Haugland, B. (2005). 'Recurrent disruptions of rituals and routines in families with paternal alcohol abuse'. *Family Relations*, 54:225-241.

Hayes, L., Smart, D., Toumbourou, J., & Sanson, A. (2004). *Parenting influences on adolescent alcohol use.* Research report no.10. Australian Institute of Family Studies.

Heide, K M. (1997) 'Juvenile homicide in America: how can we stop the killing?' *Behavioral Sciences & the Law* Volume 15, Issue 2 , p203 - 220

Hill, S.Y., & Muka, D. (1996). 'Childhood psychopathology in children from families of alcoholic female probands'. *Journal of the American Academy of Child & Adolescent Psychiatry*, 35(6):725-33.

Holt, E.S., & Kaiser, D.H. (2001). 'Indicators of familial alcoholism in children's kinetic family drawings'. *Art Therapy: Journal of the American Art Therapy Association*, 18:89-95.

Hyphantis, T., Koutras, V., Liakos, A., & Marselos, M. (1991). 'Alcohol and drug use, family situation and school performance in adolescent children of alcoholics'. *Int J Soc Psychiatry*, 37:35-42.

Jennison, K.M., & Johnson, K.A. (1998). 'Alcohol dependence in adult children of alcoholics: Longitudinal evidence of early risk'. *J Drug Educ*, 28:19-37.

Jester, J.M., Jacobson, S.W., Sokol, R.J., Tuttle, B.S., & Jacobson, J.L. (2000). 'The influence of maternal drinking and drug use on the quality of the home environment of school-aged children'. *Alcoholism: Clinical & Experimental Research*, 24:1187-97.

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

Johnson, J.L., & Leff, M. (1999). 'Children of substance abusers: Overview of research findings'. *Pediatrics*, 103:1085-99.

Kanter, R.A., Williams, B.E., & Cummings, C. (1992). 'Personal and parental alcohol-abuse, and victimization in obese binge eaters and nonbinging obese'. *Addictive Behaviors*, 17:439-445.

Kochanska, G., Murray, K., Jacques, T., Koenig, A., & Vandegeest, K. (1996). 'Inhibitory control in young children and its role in emerging internalisation'. *Child Development*, 67:490-507.

Kuperman, S., Schlosser, S., Lidral, J., & Reich, W. (1999). 'Relationship of child psychopathology to parental alcoholism and antisocial personality disorder'. *J Am Acad Child Adolesc Psychiatry*, 38:686-92.

Lieb, R., Merikangas, K.R., Hofler, M., Pfister, H., Isensee, B., & Wittchen, H.U. (2002). 'Parental alcohol use disorders and alcohol use and disorders in offspring: A community study'. *Psychological Medicine*, 32:63-78.

Lindgaard, H. (2005). 'Adult children of alcoholics: Are they different?' *Nordisk Psykologi*, 57:107-129.

Loukas, A., Zucker, R., Fitzgerald, H., & Krull, J. (2003). 'Developmental trajectories of disruptive behavior problems among sons of alcoholics: Effects of parent psychopathology, family conflict, and child undercontrol'. *Journal of Abnormal Psychology*, 112:119-131.

Lowers, L., Hill, S.Y., Locke, J., Snidman, N., & Kagan, J. (1999). 'Behavioral inhibition in children from families at high risk for developing alcoholism'. *J Am Acad Child Adolesc Psychiatry*, 38:410-7.

Lynskey, M.T., Fergusson, D.M., & Horwood, L.J. (1994). 'The effect of parental alcohol problems on rates of adolescent psychiatric disorders'. *Addiction*, 89:1277-86.

MacPherson, P., Stewart, S., & McWilliams, L. (2001). 'Parental problem drinking and anxiety disorder symptoms in adult offspring – examining the mediating role of anxiety sensitivity components'. *Addictive Behaviors*, 26:917-934.

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

Maynard, S. (1997). 'Growing up in an alcohol family system: The effect on anxiety and differentiation of self'. *Journal of Substance Abuse*, 9:161-170.

McGrath, C.E., Watson, A.L., & Chassin, L. (1999). 'Academic achievement in adolescent children of alcoholics'. *Journal of Studies on Alcohol*, 60:18-26.

McLoyd, V. (1990). 'The impact of economic hardship on black families and children: Psychological distress, parenting, and socioemotional development'. *Child Development*, 61:311-346.

Moos, R., & Moos, B. (1981). 'A typology of family social environments'. *Family Process*, 15:357-371.

Moos, R., & Moos, B. (1984). 'The process of recovery from alcoholism. III. Comparing functioning in families of alcoholics and matched control families'. *Journal of Studies on Alcohol*, 45:111-118.

Mutzell, S. (1995). 'Are children of alcoholic mothers more psychologically damaged compared with children of mothers from the general population?' *Early Child Devel Care*, 109:159-173.

Nordberg, L., Rydelius, P.A., & Zetterstrom, R. (1994). 'Parental alcoholism and early childhood development'. *Acta Paediatrica*, 83:14-18.

Obot, I.S., & Anthony, J.C. (2004). 'Mental health problems in adolescent children of alcohol dependent parents: Epidemiologic research with a nationally representative sample'. *Journal of Child & Adolescent Substance Abuse*, 13:83-96.

Ohannessian, C.M., Hesselbrock, V.M., Kramer, J., Bucholz, K.K., Schuckit, M.A., Kuperman, S., & Nurnberger, J.I., Jr. (2004). 'Parental substance use consequences and adolescent psychopathology'. *Journal of Studies on Alcohol*, 65:725-30.

Ouellette, E., Rosett, H., Rosman, N., & Weiner, L. (1977). 'Adverse effects on offspring of maternal alcohol abuse during pregnancy'. *New England Journal of Medicine*, 297:528-530.

Ozkaragoz, T., Satz, P., & Noble, E.P. (1997). 'Neuropsychological functioning in sons of active alcoholic, recovering alcoholic, and social drinking fathers'. *Alcohol*, 14:31-7.

Puttler, L.I., Zucker, R.A., Fitzgerald, H.E., & Bingham, C.R. (1998). 'Behavioral outcomes among children of alcoholics during the early and middle childhood years: Familial subtype variations'. *Alcoholism: Clinical & Experimental Research*, 22:1962-72.

Reich, W., Earls, F., Frankel, O., & Shayka, J.J. (1993). 'Psychopathology in children of alcoholics'. *J Am Acad Child Adolesc Psychiatry*, 32:995-1002.

Reich, W., Earls, F., & Powell, J. (1988). 'A comparison of the home and social environments of children of alcoholic and non-alcoholic parents'. *British Journal of Addiction*, 83:831-839.

Ritter, J., Stewart, M., Bernet, C., Coe, M., & Brown, S.A. (2002). 'Effects of childhood exposure to familial alcoholism and family violence on adolescent substance use, conduct problems, and self-esteem'. *Journal of Traumatic Stress*, 15:113-22.

Ross, L.T., & Hill, E.M. (2004). 'Comparing alcoholic and nonalcoholic parents on the family unpredictability scale'. *Psychological Reports*, 94:1385-91.

Rossow, I., & Hauge, R. (2004). 'Who pays for the drinking? Characteristics of the extent and distribution of social harms from others' drinking'. *Addiction*, 99:1094-1102.

Russell, M., Czarnecki, D.M., Cowan, R., McPherson, E., & Mudar, P.J. (1991). 'Measures of maternal alcohol use as predictors of development in early childhood'. *Alcohol Clin Exp Res*, 15:991-1000.

Rydelius, P. (1997). 'Annotation: Children of alcoholics a clinical concern for child and adolescent psychiatrists today?' *Journal of Child Psychology and Psychiatry*, 38:615-624.

Saggers, S., & Gray, D. (1998). *Dealing with alcohol: Indigenous usage in Australia, New Zealand and Canada.* Cambridge University Press, Cambridge.

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'. J*ournal of Abnormal Psychology*, 100:427-448.

Streissguth, A. (1977). 'Maternal drinking and outcome of pregnancy – implications for child mental health'. *American Journal of Orthopsychiatry*, 47:422-431.

Tarter, R., Jacob, T., & Bremer, D. (1989). 'Cognitive status of sons of alcoholic men'. *Alcoholism: Clinical and Experimental Research*, 13:232-235.

Thomas 2004b. Thomas J, Harden A, Oakley A, Oliver S, Sutcliffe K, Rees R, Brunton G, Kavanagh J. (2004) Integrating qualitative research with trials in systematic reviews. *BMJ*;328:1010-2.

Velleman, R., & Orford, J. (1990). 'Young adult offspring of parents with drinking problems: Recollections of parents' drinking and its immediate effects'. *British Journal of Clinical Psychology*, 29:297-317.

Woodside, M., Coughey, K., & Cohen, R. (1993). 'Medical costs of children of alcoholics – pay now or pay later'. *J Subst Abuse*, 5:281-7.

World Health Organization. (2006). Accessed November, 2005, from http://www.who.int

Young, N.K. (1997). 'Effects of alcohol and other drugs on children'. *J Psychoactive Drugs*, 29:23-42.
Zhang, J.F., Wang, J., Lu, Y.X., Qiu, X.X., & Fang, Y. (2004). 'Alcohol abuse in a metropolitan city in China: A study of the prevalence and risk factors'. *Addiction*, 99:1103-1110.

APPENDIX 1

Systematic review quality protocol: Quantitative studies

A. Selection bias

Q1. Are the individuals selected to participate in the study likely to be representative of the target population?

The authors have done everything reasonably possible to ensure that the target population is represented.	Very likely
Participants may not be representative if they are referred from a source within a target population even if it is in a systematic manner (eg patients from a teaching hospital for adults with asthma, only inner-city schools for adolescent risk).	Somewhat likely
Participants are probably not representative if they are self-referred or are volunteers (eg volunteer patients from a teaching hospital for adults with asthma, inner-city school children with parental consent for adolescent risk) or if you cannot tell.	Not likely

Q2. What percentage of selected individuals agreed to participate?

The % of subjects in the control and intervention groups that agreed to participate in the study before they were assigned to intervention or control groups.	%
There is no mention of how many individuals were approached to participate.	Not reported
The study was directed at a group of people in a specific geographical area, city, province, broadcast audience, where the denominator is not known, eg mass media intervention.	Not applicable

B. Allocation bias

Q1. Indicate study design

Cohort (two-group pre and post) Groups are assembled according to whether or not exposure to [heavy alcohol use] has occurred. Study groups may not be equivalent or comparable on some features that affect the outcome.	Two-group quasi experimental
Case-control study A retrospective study design where the investigators gather 'cases' of people who already have the outcome of interest and 'controls' that do not. *No control group*	Case-control, no control group

C. Confounders

Q1. Were important confounders reported in the paper?

The authors reported that the groups were balanced at baseline with respect to confounders (either in the text or a table).	No
The authors reported that the groups were not balanced at baseline with respect to confounders.	Yes

If yes, what were they? Eg mental health, socio-economic status, type of drinking (aggressive, social etc).

Q2. If there are any differences between groups for important confounders, were they adequately managed in the analysis?

Differences between groups for important confounders were controlled in the design (by stratification or matching).	No
No attempt was made to control for confounders.	Yes

Q3. Were there important confounders not reported?

Describe.	Yes
All confounders discussed within the Review Group were reported.	No

D. Blinding

Q1. Were the outcome assessors blinded to the exposure status of the participants?

Assessors were described as blinded to which participants were in the control and other groups.	Yes
Assessors were able to determine what group the participants were in.	No
The data was self-reported and was collected by way of a survey, questionnaire or interview.	Not applicable
It is not possible to determine if the assessors were blinded or not.	Not reported

E. Data collection methods

Q1. Were data collection tools shown or are they known to be valid?

The tools are known or were shown to measure what they were intended to measure.	Yes
There was no attempt to show that the tools measured what they were intended to measure.	No

Q2. Were data collection tools shown or are they known to be reliable?

The tools are known or were shown to be consistent and accurate in measuring the outcome of interest (eg test-retest, Cronback's alpha, inter-rater reliability).	Yes
There was no attempt to show that the tools were consistent and accurate in measuring the outcome of interest.	No

F. Withdrawals and drop-outs

Q1. Indicate the percentage of participants completing the study.

The percentage of participants that completed the study.	%
The study was directed at a group of people in a specific geographical area, city, province, broadcast audience, where the percentage of participants completing, withdrawing or dropping out of the study is not known.	Not applicable
The authors did not report on how many participants completed, withdrew or dropped out of the study.	Not reported

G. Analysis

Q1. Is there a sample size calculation or power calculation?

Yes	Partially	No

Q2. Is there a statistically significant difference between groups?

Yes	No	Not reported

Q3. Are the statistical methods appropriate?

Yes	No	Not reported

Summary of component ratings

A. Selection bias

Strong	Moderate	Weak

B. Study design

Strong	Moderate	Weak

C. Confounder

Strong	Moderate	Weak

D. Blinding

Strong	Moderate	Weak

E. Data collection methods

Strong	Moderate	Weak

F. Withdrawals and drop-outs

Strong	Moderate	Weak

G. Analysis

Comments:

With both reviewers discussing the rating:

Is there a discrepancy between the two reviewers with respect to component ratings?

Yes	No

If yes, indicate reason for the discrepancy:

Oversight	Differences in interpretation of criteria	Differences in interpretation of the study

Component ratings for study

A. SELECTION BIAS

Strong
Q1 = Very Likely AND Q2 = 80-100% Agreement
OR
Q1 = Very Likely AND Q2 = Not Applicable
Moderate
Q1 = Very Likely AND Q2 = 60-79% Agreement
OR
Q1 = Very Likely AND Q2 = Not Reported
OR
Q1 = Somewhat Likely AND Q2 = 80-100%
OR
Q1 = Somewhat Likely AND Q2 = 60-79% Agreement
OR
Q1 = Somewhat Likely AND Q2 = Not Applicable
Weak
Q1 = Not Likely
OR
Q2 = Less than 60% agreement
OR
Q1 = Somewhat Likely AND Q2 = Not Reported

B. ALLOCATION BIAS

Strong
Study Design = RCT (not applicable to us)
Moderate
Study Design = Two-Group Quasi-Experimental
Weak
Study Design = Case Control, No Control Group

C. CONFOUNDERS

Strong
Q1 = No AND Q2 = N/A AND Q3 = No
Q1 = Yes AND Q2 = YES AND Q3 = No
Moderate
Q1 = Yes AND Q2 = YES AND Q3 = Yes
Weak
Q1 = Can't tell
Q1 = Yes AND Q2 = No AND Q3 = Yes
Q1 = Yes AND Q2 = No AND Q3 = No
Q1 = No AND Q2 = N/A AND Q3 = Yes

D. BLINDING

Strong
Q1 = Yes
Weak
Q1 = No
Q1 = Not Reported
Not applicable

E. DATA COLLECTION METHODS

Strong
Q1 = Yes AND Q2 = Yes
Moderate
Q1 = Yes AND Q2 = No
Weak
Q1 = No AND Q2 = Yes
OR
Q1 = No AND Q2 = No

F. WITHDRAWALS AND DROP-OUTS

Strong
Q1 = 80-100%
Moderate
Q1 = 60-79%
Weak
Q1 = Less than 60%
OR
Q1 = Not Reported Not Applicable
Not applicable

Overall rating:
The six criteria (eg selection bias, blinding etc) are each rated as 'strong', 'moderate' or 'weak' depending on characteristics of each criterion reported in the study. Once the ratings of characteristics are totalled, each study then receives an overall assessment of strong, moderate or weak quality. In order for a study to be rated as 'strong', four of the six quality assessment criteria have to be rated as strong, with no weak ratings. A rating of 'moderate' is achieved if less than four criteria are rated strong and one criterion is rated weak. A rating of 'weak' is given if two or more criteria are rated weak.

APPENDIX 2

Systematic review quality protocol: Qualitative studies

Screening questions

1. Was there a clear statement of the aims of the research? __ Yes __ No

Consider:
- what the goal of the research was
- why it is important
- its relevance

2. Is a qualitative methodology appropriate? __ Yes __ No

Consider:
- if the research seeks to interpret or illuminate the actions and/or subjective experiences of research participants

Is it worth continuing?

Detailed questions

Appropriate research design

3. Was the research design appropriate to the aims of the research?

Consider:
- if the researcher has justified the research design (eg have they discussed how they decided which methods to use?)

Sampling

4. Was the recruitment strategy appropriate to the aims of the research?

Consider:
- if the researcher has explained how the participants were selected
- if they explained why the participants theyselected were the most appropriate to provide access to the type of knowledge sought by the study
- if there are any discussions around recruitment (eg why some people chose not to take part)

Data collection

5. Were the data collected in a way that addressed the research issue?

Consider:
- if the setting for data collection was justified
- if it is clear how data were collected (eg focus group, semi-structured interview etc)
- if the researcher has justified the methods chosen
- if the researcher has made the methods explicit (eg for interview method, is there an indication of how interviews were conducted, did they use a topic guide?)
- if methods were modified during the study
  If so, has the researcher explained how and why?
- if the form of data is clear (eg tape recordings, video material, notes etc)
- if the researcher has discussed saturation of data

Reflexivity (research partnership relations/recognition of researcher bias)

6. Has the relationship between researcher and participants been adequately considered?

Consider whether it is clear:
- if the researcher critically examined their own role, potential bias and influence during:
- formulation of research questions
- data collection, including sample recruitment and choice of location
- how the researcher responded to events during the study and whether they considered the implications of any changes in the research design

Ethical issues

7. Have ethical issues been taken into consideration?

Consider:

– if there are sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained
– if the researcher has discussed issues raised by the study (eg issues around informed consent or confidentiality or how they have handled the effects of the study on the participants during and after the study)
– if approval has been sought from the Ethics Committee

Data analysis

8. Was the data analysis sufficiently rigorous?

Consider:

– if there is an in-depth description of the analysis process
– if thematic analysis is used. If so, is it clear how the categories/themes were derived from the data?
– whether the researcher explains how the data presented were selected from the original sample to demonstrate the analysis process
– if sufficient data are presented to support the findings
– to what extent contradictory data are taken into account
– whether the researcher critically examined their own role, potential bias and influence during analysis and selection of data for presentation

Findings

9. Is there a clear statement of findings?

Consider:

– if the findings are explicit
– if there is adequate discussion of the evidence both for and against the researcher's arguments
– if the researcher has discussed the credibility of their findings
– if the findings are discussed in relation to the original research questions

Value of the research

10. How valuable is the research? Write comments here.

Consider:

– if the researcher discusses the contribution the study makes to existing knowledge or understanding, eg do they consider the findings in relation to current practice or policy, or relevant research-based literature?
– if they identify new areas where research is necessary
– if the researchers have discussed whether or how the findings can be transferred to other populations or considered other ways the research may be used

APPENDIX 3

This appendix contains evidence tables and quality assessment ratings for the studies in the literature review. There are 68 items in these tables.

Study	Research quest	Participants & methods	Results	Other findings	Comment
1. Nordberg, L., Rydelius, P.A., & Zetterstrom, R. (1994) 'Parental Alcoholism and Early Childhood Development' *Acta Paediatrica,* 18:14-18 Design: Longitudinal prospective Rating: Weak	Advancing and testing of hypothesis: Where mother, father or both are known to suffer from alcoholism at the beginning of their pregnancy, do these children show deviations in physical and mental development up to 4 years old and have more symptoms particular to child psychiatry and psychopathology than other children in the groups studied?	Participants: Cohort of 532 pregnant women who visited two maternal welfare centres in a new suburb of Stockholm for first time over a period of one year. Method: • Selection of 64 families in which 51 fathers and 13 mothers were alcoholics – both parents addicted in 10 families, remaining 41 only fathers. Selection of families based on compilation of interviews, police, hospital and social welfare records. • Pregnancy and delivery in these families investigated with prospective methods. • Data concerning psychological development and psychological health of children obtained by interviewing mother and evaluating child ages 1–4. • During year 1, 452 and at year 4, 412 of the children evaluated on Griffiths' development scales. • Psychopathological symptoms examined in accordance with DSM3 criteria & parental interviews.	• Foetal hazard indicated by lower birth weights and higher rate of perinatal deaths. • Children of alcoholic parents had retarded development and showed more behavioural problems. • Impaired physical development up to age 1 disappeared later. • Boys more vulnerable than girls. • Consequence of behaviour more pronounced when both parents alcoholics.	• Authors indicate that behavioural problems of alcoholic children may be result of emotional stress in vulnerable children and are not caused by damaging effects on the CNS. • Further scope for questioning of parental psychopathology which frequently accompanies parental alcoholism as a more important determinant than alcoholism itself.	

Study	Research quest	Participants & methods	Results	Other findings	Comment
2. Hill, S.Y., & Muka, D. (1996) 'Childhood psychopathology in children from families of alcoholic female probands' *Journal of the American Academy of Child and Adolescent Psychiatry,* 35(6):725-733, June Design: Matched (by age and gender) case-control study Rating: Weak	To determine prevalence of DSM-III disorders among children from families with history of maternal alcoholism.	Participants: 76 children between the ages of 8-18 years from high- and low-risk groups and their families. Method: • Age and gender matched children divided into two groups: 'high-risk families' and 'low-risk families'. • High-risk group (N=38) were part of larger study of alcoholism, which included assessment on clinical status and number of neurobiological indicators of risk (Biological risk factors family study). • Low-risk group (N=38) from community volunteers including multiple members families pedigrees selected for minimal psychology. • Psychiatric assessment of 1st and 2nd degree relatives of children (DIS) through interviews to assess relatives on DSM3 and Feighner Axis 1 pathology. • Psychiatric evaluation of children on Schedule for Affective Disorders & Schizophrenia (K-SADS), Epidemiologic (E), Present Episode (P) versions.	• Children from maternal alcoholic families are at significantly higher risk for developing more psychiatric diagnoses than controls. • Increased rates of ADHD and externalising disorders in children from high-risk families.	• Risk of increased developing childhood psychopathology by presence of an alcohol-dependent father (as well as mother).	

Study	Research quest	Participants & methods	Results	Other findings	Comment
3. Farrell, M.P., Barnes, G.M., & Banerjee, S. (1995) 'Family cohesion as a buffer against the effects of problem-drinking fathers on psychological distress, deviant behaviour, and heavy drinking in adolescents' *Journal of Health and Social Behavior,* 36:377-385 Design: Longitudinal study Rating: Weak	To test the following hypotheses: ii)The more cohesion adolescents perceive in their families the less distress, deviance and heavy drinking adolescents will show. ii)The more stressful life events adolescents experience the more distress, deviance and heavy drinking they will show. iii)The more problem drinking in the fathers the more distress deviance and heavy drinking adolescents will show. iv)Family cohesion will buffer the negative effects of a father's problem drinking on adolescents such that, as family cohesion increases the negative effects of the father's problem drinking will decline.	Participants: Representative sample by RDD of N=658 families (with children aged 13–16) living in households in a Northeast Metro area (in USA). Inclusion: At Time 1 household has at least one teen aged 13–16 and at least one parent. Methods: T1 N=669 at T2 N=658 (94% followed up). Mother, fathers (if present) and adolescent children (target child and siblings) were interviewed in the home. Father's completed self-report scales measuring problem drinking; if absent mothers indicated drinking patterns of fathers. Twenty-nine stressful life events asked about and stress recorded on a 3pt scale. Family cohesion measures on a 10-item FACES cohesion scale.	Age, mother's education and family structure have no effect on distress. Hypothesis i) Evidence for more cohesion equals less distress. Hypothesis ii) Evidence for more stressful effects equals more distress. Hypothesis iii) Evidence against fathers' problem drinking does not have a main effect on distress. However race and genders have an effect on distress: blacks show less distress than whites; boys show less distress than girls. Hypothesis iv) Support found for a buffering effect.	Similar findings for adolescent deviance and heavy drinking as for distress. Whites, males and other children report higher average levels of deviance and heavy drinking than blacks, females and younger children.	

Study	Research quest	Participants & methods	Results	Other findings	Comment
4. Belliveau, J.M, & Stoppard, J.M. (1995) 'Parental alcohol abuse and gender as predictors of psychopathology in adult children of alcoholics' *Addictive Behaviours,* 20:619-625 Design: Cross-sectional Rating: Weak	Test hypotheses: i) ACA are characterised by more severe psychopathology than ACNA. ii) Female ACA would be characterised by higher levels of symptomatology than would male ACA. iii) That ACA whose opposite-sex parent was alcohol-abusing would be characterised by higher levels of symptomatology than ACA whose same-sex parent abused alcohol.	N=514 (F=388, M=126) Volunteers enrolled in introductory psychology. Blinding to outcome of interest. Measures: Clinical analysis questionnaire (CAQ) and children of alcoholics screening test (CAST). Analysis: N=425 Discriminant analysis and MANOVA.	Scores for depression, psychoticism and neuroticism on the CAQ contributed to discrimination between ACA and ACNA. Levels of symptomatology indicative of depression and general maladjustment were found to be higher in ACA than ACNA. No gender differences specific to ACA. Males scored higher than females on depression and psychoticism regardless of group.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
5. Chassin, L., Pitts, S.C., DeLucia, C., & Todd, M. (1999) 'A longitudinal study of children of alcoholics: Predicting young adult substance use disorders, anxiety and depression' *Journal of Abnormal Psychology,* 108:106-119 Design: Longitudinal study Rating: Moderate	Addresses: i) Does parent alcoholism elevate risk for adult psychopathology? ii) Is the risk specific to parent alcoholism above and beyond other parental psychopathology? iii)Is parent alcoholism risk mediated through adolescent internalising and externalising symptomatology? iv)Does adolescent alcohol and drug use contribute to risk for young adult psychopathology?	Participants were from an ongoing longitudinal study at T1 N=454 adolescents; N=246 cases at least one biological alcoholic parent (also custodial parent) and N=208 controls demographically matched. Recruitment and representativeness of sample shown elsewhere (see McGrath, C.E, Watson, A.L., & Chassin, L. (1999)). Inclusion of cases: i) Hispanic or non-Hispanic Caucasian ethnicity. ii) Arizona residency. iii)Aged 10.5-15.5 years. iv)English speaking. v) Biological and custodial parent met DSM-III alcohol abuse or dependence criteria or FH-RDC criteria (absent parent). Matched controls: Matched by demographics (ethnicity, family structure, within 1 year in age, SES (property value)) and neighbourhood. And parent did not meet criteria	COAs were more likely than non-COAs to have lifetime diagnosis of alcohol abuse or dependence (result seen in target adolescents and full-biological siblings). COAs' risk for alcohol abuse/dependence in the past 5 years did not differ whether or not their fathers' alcoholism was active or remitted during the study period. There were robust findings that parental alcoholism was associated with off-spring alcohol and drug abuse/dependence above and beyond parental antisocial personality, depression, and anxiety disorder. The current data supported the hypothesis that the effects of parent alcoholism on young adult substance abuse/dependence are in part mediated by earlier conduct problems or externalising symptoms. The current study found little evidence for unique effects of		

Study	Research quest	Participants & methods	Results	Other findings	Comment
		for alcohol dependence. Method: Reported elsewhere. Three annual computer-assisted interviews of adolescents and parents and a long-term follow-up (T4) was conducted 5-7 years after the initial assessment. At T4, initial participants were aged 18-23, N=407; 213 cases, 194 controls Full-biological siblings aged 18-23 at T4 were also interviewed. Measures: Parental alcoholism and associated psychopathology: at T1 lifetime DSM-II diagnoses of alcoholism, affective disorder, and antisocial personality; at T4 lifetime DSM-III-R anxiety disorder diagnoses, and parents who were not alcoholic at T1 were administered C-DIS sections for alcohol abuse and dependence. Recency of parental alcoholism self-reports of alcohol dependency symptoms reported at each wave and T4. Adolescent symptomatology at each wave and at T4 using items from Child Behaviour Checklist; also self-reported alcohol and drug use was recorded. At T4, parents reported adolescents' alcohol and drug-related problems using diagnostic interview for children and adolescents – parent version. Young adult diagnoses at T4 using DSM-III-R for alcohol abuse, drug abuse and dependence, affective disorder using (C-DIS III-R).	adolescent substance use on young adult diagnoses.		

Study	**Research quest**	**Participants & methods**	**Results**	**Other findings**	**Comment**
6. Braithwaite, V., & Devine, C. (1993) 'Life satisfaction and adjustment of children of alcoholics: The effects of parental drinking, family disorganization and survival roles' *British Journal of Clinical Psychology,* 32:417-429 Design: Cross-sectional Rating: Weak	Using the stress paradigm, investigates the extent to which parental alcohol dependency, family disorganisation and survival roles (Black's responsible child and Wegscheider's hero child who takes the adult role long before it is due) affected the adjustment of children of alcoholics (COAs). Aim: To explore family relationships and survival roles as moderators, mediators and main effects in the prediction of child adjustment from parental alcohol dependency.	Based on responses from a non-random community sample (59 school children from a public and a private school in Canberra, Australia, 48 children from drop-in centres and youth refuges in Canberra and five from a self-help group of children of alcoholics) of N=112 adolescents who volunteered to take part in this study. Measures: Questionnaires measuring: i) Parental alcoholism (children of alcoholics screening test (CAST)). ii) Family cohesion (Cooper, Holman, & Braithwaite's pictorial representation index). iii) Parent-child intimacy. iv) Child survival roles. v) Adolescent adjustment (GHQ-12). vi) Life satisfaction (Life 3 scale). vii) Demographics (age, sex, employment status).	Analysis: Used hierarchical multiple regression analysis. Results: Parental alcoholism did not add anything above and beyond family support (family, parent-child intimacy and deliberateness) in the prediction of GHQ scores; alcoholism did make a small but significant contribution (in R-squared) to life satisfaction, net of family support. Family variables served the function of additional stressors in the lives of COA. Survival roles of lost child, acting-out child and clown child were linked with symptoms and life dissatisfaction. No evidence was found to support a buffering for either responsible child or the placater child in relation to either life satisfaction or GHQ scores.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
7. DeLucia, C., Belz, A., & Chassin, L. (2001) 'Do adolescent symptomatology and family environment vary over time with fluctuations in parental alcohol impairment?' *Developmental Psychology,* 37:207-216 Design: Longitudinal study Rating: Moderate	To test whether adolescent internalising problems, externalising problems, heavy alcohol use, fathers' parenting and family conflict varied over time with fluctuations in fathers' alcohol impairment and whether children of recovered alcoholic fathers differed from children of non-alcoholic fathers.	At T1, N=454 adolescents and parents COA N=246, controls N=208. Recruitment and representativeness of sample shown elsewhere (see McGrath, C.E, Watson, A.L., & Chassin, L. (1999)). Inclusion of cases: i) Hispanic or non-Hispanic Caucasian ethnicity. ii) Arizona residency. iii) Aged 10.5-15.5 years. iv) English speaking. v) Biological or custodial parent met DSM-III alcohol abuse or dependence criteria or FH-RDC criteria (absent parent). Matched controls: Matched by demographics (ethnicity, family structure, within 1 year in age, SES (property value)) and neighbourhood. And parent did not meet criteria for alcohol dependence. Method: Reported elsewhere. Three annual computer-assisted interviews of adolescents and parents. Final N=267 (58.8%) families (N=137 cases; N=130 controls); 41.2% rate of dropouts. Measures: 1. Familial alcoholism and associated psychopathology DSM-III-alcohol abuse; affective disorder, antisocial personality disorder, family history of alcoholism. 2. Paternal alcohol-related dependence. 3. Paternal daily drinking. 4. Paternal alcoholism recovery. 5. Adolescnt symptomatology – child behaviour check-list; youth self-report, internalising and externalising problems, heavy drinking, 6. Family environment variables.	i) Cluster analysis used to group active alcoholic fathers into trajectories of parental alcohol impairment. ii) Used these trajectories to predict changes over time in family and child outcomes using longitudinal MANOVA models. No support for hypothesis 'that adolescent symptomatology and family environment vary over time with fluctuations in paternal alcohol impairment'. However, adolescents in recovered alcoholic families exhibited more externalising problems and more frequent heavy alcohol use than adolescents in control families.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
8. Cuijpers, P., Langendoen, Y., & Bijl, R.V. (1999) 'Psychiatric disorders in adult children of problem drinkers: Prevalence, first onset and comparison with other risk factors' *Addiction* 94(10):1489-98 Design: Cross-sectional Rating: Weak	1. To confirm the increased risk of psychiatric disorders in ACOAs. 2. To test if the age of onset of the disorders differs for ACOAs versus non-ACOAs. 3. To estimate the weight of being an ACOA compared to other risk factors including childhood traumas, other parental problem behaviours and current risk factors.	Participants: A random sample of N=7,147 Dutch people aged 18 to 64 (from within households) as part of the Netherlands Mental Health Survey and Incidences Study from February to December 1996 (response rate was 69.7%). Measures: Structured interviews GHQ-confounder measure psychiatric disorders (CIDI-composite international diagnostic interview (uses DSM-III-R and ICD-10 criteria and definitions). Confounders measured and weighted for age, gender, marital status, urbanisation (to make population representative of national population of the Netherlands). Self-reported problem drinking of parents, depression, anxiety, delusions or hallucinations.	Risk factors included in the analysis were: employment status, marital status, age, gender, education and income. 1. ACOAs had a significant higher lifetime, 12-month and 1-month prevalence of mood, anxiety and abuse/dependence disorders. Sons of problem drinkers also had a higher prevalence of eating disorders and schizophrenia, particularly children of fathers with drinking problems. 2. The first onset of the mood and anxiety disorders took place at a younger age in ACOAs than non-ACOAs. 3. Relative to other parental problem behaviours and childhood traumas, parental problem drinking is a strong predictor of psychiatric disorders (in particular abuse/dependence disorders).		

Study	Research quest	Participants & methods	Results	Other findings	Comment
9. Ritter, J., Stewart, M., Bernet, C., Coe, M., & Brown, S.A. (2002) 'Effects of childhood exposure to family alcoholism and family violence on adolescent substance use, conduct problems, and self-esteem' *Journal of Traumatic Stress*, 15:113-122 Design: Longitudinal study Rating: Weak	Examines potential additive and interactive effects of childhood exposure to family violence and childhood exposure to familial alcoholism on adolescent functioning as measured by level of adolescent substance use, conduct problems and emotional functioning.	Participants: N=109 (61 girls, 48 boys) aged 12–18 and their parents. Recruitment: Through newspaper and radio adverts, peer referral, parents in alcohol and drug treatment programmes. Area: Metropolitan San Diego Method: Children and parents evaluated as part of a longitudinal study. Childhood exposure to alcohol-abusing family model was assessed through a structured interview with teen and parent separately. History of alcohol dependence assessed using DSM-III-R. Data collected in five waves over 6 years. Measures: Three domains of adolescent function: i) Lifetime levels of substance use. ii) Conduct disorder behaviours. iii) Self-esteem.	Adolescent substance use is related to youth's age and alcohol-abusing family models. Conduct disorders behaviour is related to alcohol-abusing family models and exposure to family violence in girls but not boys. Alcohol-abusing family models and family violence helped explain variance in self-esteem in girls but not boys. Family violence explained some variance in self-esteem in boys.	Girls with a low level of family violence differed in conduct disorder behaviour with presence/ absence of alcohol abuse (presence higher than absence) – no difference found with high levels of violence.	

Study	Research quest	Participants & methods	Results	Other findings	Comment
10. Grekin, E.R, Brennan, P.A., & Hammen, C. (2005) 'Parental alcohol use disorders and child delinquency: The mediating effects of executive functioning and chronic family stress' *Journal of Studies on Alcohol,* 66:14-22 Design: Longitudinal study Rating: Strong	To test the hypotheses that: 1. A parental history of alcohol use disorders (AUDs) will be related to higher levels of child self-reported violent and non-violent delinquency. 2. A parental history of AUDs will be associated with child neuropsychological functioning and chronic family stress. 3. Child neuropsychological functioning and family stress will mediate the relationship between parental AUDs and child delinquent outcomes.	A sub-sample of N=816 families with children born between 1981 and 1984 at Mater Misericordiae Mother's Hospital in Brisbane, Australia from a larger cohort study of N=7,223, from N=991 eligible (82%). Sub-sample selected on the basis that it included a larger number of women with a history of depressive symptoms and a sample of comparison women was selected on the basis that women had no or few depressive symptoms. Sub-sample differed on ethnic mix and age of mothers. Blinding – interviewer blind to depressive symptom history. Measures: Parental AUDs; structured clinical interview – DSM-IV (if biological parent present); family history research diagnostic criteria (FHRDC) – when biological father not available. Youth delinquency – self-reports of both non-violent and violent acts. Youth neuropsychological functioning – Stropp colour word test to measure selective attention; preservative error score on the Wisconsin card sort test. Chronic family stress – semi-structured interview based on versions of a chronic strain functioning for children and adults.	Analysis controlled for: i) Maternal depression status. ii) Biological father's antisocial personality disorder. iii) Youth IQ – measured by Wechsler intelligence scale for children III. iv) SES-measured by mother's education and currently married to biological father. Results: Paternal (but not maternal) AUDs predicted child violent and non-violent delinquency. Family stress medicated the relationship between paternal AUDs and both violent and non-violent delinquency. Executive functioning mediated the relationship between paternal AUDs and violent delinquency.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
11. Connolly, G.M., Casswell, S., Stewart, J., Silva, P.A., & O'Brien, M.K. (1993) 'The effects of parents' alcohol problems on children's behaviour as reported by parents and by teachers' *Addiction*, 88:1383-90 Design: Longitudinal study Rating: Moderate	Investigate the effect of parents' alcohol problems on their children's behaviour at school (as reported by teachers) and at home (as reported by parents).	N=1,037 at age 3 (from N=1,661 babies born in Dunedin during 1972) followed up at age 9 (76% of 1,037) and at age 13 (71% of 1,037). Parents' (95% of interviews done with mother) reports of child behaviour (via Rutter Child Scale A) at age 9 and via the revised behaviour problem checklist at age 13. Teachers' reports of behaviour (via Rutter Child Scale B) at ages 9 and 13. Family relationship – measured by Family Environment Scale at ages 9 and 13. Child's IQ via Wechsler verbal and performance scales. Alcohol problems in the family – via open-ended face-to-face interview.	Analysis: Logistic regression investigated effects of family relationships, gender, SES, child IQ and parental alcohol problems. Results: At age 9 parents' alcohol problems contributed to explanation of children's problem behaviours as reported by teachers. However, the same effect was not shown at age 13, but being male and having a lower reading proficiency were associated with increased likelihood of high levels of problem behaviour reported by teacher. At age 13, severe parental alcohol problems were associated with increased likelihood of high levels of problem behaviour reported by parents. Poorer family relationships were associated with higher levels of behaviour problems reported by parents at age 13. Lower reading proficiency and lower verbal IQ were associated with reports of high levels of problem behaviour at age 13.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
12. Velleman, R., & Orford, J. (1990) 'Young adult offspring of parents with drinking problems: Recollections of parents' drinking and its immediate effects' *British Journal of Clinical Psychology*, 29:297-317 Design: Case-control study Rating: Weak	To provide a description of childhood experiences involving a problem drinking parent, as provided retrospectively by a mixed volunteer sample of offspring (most of whom have not been identified as having problems in adulthood themselves) and most of whose problem drinking parents had not been identified as such whilst the offspring were at home. To identify variables within these family histories which might provide a useful differentiation within the sample of offspring of problem drinking parents and which might then enable a test to be made of hypotheses about the factors responsible for different adulthood outcomes.	Participants: N=250 16–35-year-olds, N=170 of whom reported at least one parent had a drinking problem with onset before the respondent was 21 or before they left home; and N=80 of whom reported that neither parent had a drinking problem. Recruited 2:1 cases: Controls with equal males and females in each group and equal numbers in 16-20, 21-25, 26-30 and 31-35 age groups. Volunteers recruited from a wide range of sources (clinical/agency and community/advertising) from southwest of England. Groups compared for representativeness and differences – they were different on SES (based on father's longest-held job). Method: Two interviews 12 months apart on childhood experiences and current adjustment. Results reported here relate mostly to the first interview. Interview schedule was a mix of structured/survey questions and in-depth/clinical questions (open questions). Twelve questionnaires, checklists and card sorts, each of standard format, were used at appropriate points in the first interview.	Almost all offspring described parental drinking spanned at least middle childhood and early adolescence. Only half were aware of any relevant treatment of the parents' problems. The commonly recalled effects of parents drinking at home were parents' changeable and irritable moods, as well as their unreliability and tendency to upset or fail to join in with family activities. Also, two-thirds reported parents' suffering major physical changes (weight and appearance) and physical problems (liver, stomach, heart). A third reported parents attempted suicide or made a suicidal gesture at least once. Worry, and uncertainty, feeling of family instability, experience of being caught between the interests of two parents and the adoption of certain adult roles were reported far more frequently by offspring of parents with drinking problems than controls. Offspring with mothers with drinking problems recalled significantly more negative childhood experiences.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
13. Mutzell, S. (1995) 'Are children of alcoholic mothers more psychologically damaged compared with children of mothers from the general population?' *Early Child Development and Care*, 109:159-173 Design: Matched case-control study Rating: Weak	To determine if children of alcoholic mothers were more psychologically damaged compared with children of mothers from the general population.	N=80; matched pairs of 40 women (from a simple random sample group P) from the general population and 40 female alcoholic inpatients (consecutively admitted group A) living in a geographically defined area in the northern part of Stockholm. Inclusion cases: Being born on an even day of the month and staying at least one week at the clinic for voluntary treatment of alcohol problems (admitted for the first time during a two-year period), and fulfilling the DSM-II-R alcohol abuse criteria. Measures: General medical examination, a psychiatric and social history, neuropsychological and X-rays (heart and lungs), ECG, blood and urine tests. Blinding was done.	Chi-square test and Student's t-test were used for testing significant differences. COAs develop social maladjustment problems and addictions, somatic and psychiatric disease and poor health status at higher rates than the general population. Children using alcohol and drugs had the highest rates of convictions for crimes and felonies. No differences between girls and boys in group A in terms of problems, especially concerning registration by the temperance board and Children's Welfare Committee, social assistance, psychiatric care and visits to child counselling clinics and abuse of alcohol.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
14. Eiden, R.D., Edwards, E.P., & Leonard, K.E. (2004) 'Predictors of effortful control among children of alcoholic and non-alcoholic fathers' *Journal of Studies on Alcohol*, 65:309-319, May Design: Longitudinal study Rating: Weak	To examine: 1. The association between fathers' alcoholism and children's effortful control. 2. The role of parental warmth and toddler temperament as mediators or moderators of this relationship.	N=226 families were recruited through New York State birth records when their infant age was 12 months. Of these, N=102 were non-alcoholic parents and for N=124 the father was an alcoholic. Families were assessed when their child was 12, 18, 24 and 36 months. Measures: Parental alcohol use self-reported (UM-CIDI interviews and DSM-IV criteria for alcohol abuse used); toddler temperament – using the Toddler Behaviour Assessment Questionnaire (TBAQ), parental warmth (observed free-play interactions), effortful control.	Results indicate that boys of alcoholic fathers exhibit lower overall levels of effortful control than boys of non-alcoholics. For boys, fathers' warmth over the second year of life mediated the association between fathers' alcoholism and effortful control. Maternal warmth was a unique predictor of effortful control for boys. For girls, fathers' alcoholism was associated with lower parental warmth, which was in turn a significant predictor of effortful control.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
15. Ross, L.T. & Hill, E.M. (2004) 'Comparing alcoholic and non-alcoholic parents on the Family Unpredictability Scale' *Psychological Reports*, 94:1385-1391 Design: Case-control study Rating: Weak	Examine alcoholic parents' and community parents' reports of family functioning using the Family Unpredictability Scale, a multidimensional measure yielding scores for nurturance, finances, discipline and meals unpredictability. Expect families with an alcoholic parent to be more unpredictable than families without an alcoholic parent on all four sub-scales and on the total score.	Participants: N=25 alcoholic parents recruited from treatment centres (entered within last six weeks), N=27 non-alcoholic parents (screened using DIS) from a community sample (recruited through newspapers and flyers). Groups were similar on ethnicity, age and number of children, however they were different in terms of more men in alcoholic group and the alcoholic group had fewer years of education than controls. Measures: Total score on the Family Unpredictability Scale and scores for nurturance, finances, discipline and meals unpredictability sub-scales.	Scores were compared using MANOVA controlling for sex and education. Alcoholic parents reported more total and discipline unpredictability than controls. Nurturance scores significantly differed according to the sex covariate – with men reporting more unpredictable nurturance than women. Finances scores significantly differed according to the education covariate – with education negatively correlated with financial unpredictability. No difference between groups on meals predictability.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
16. Lowers, L., Hill, S.Y., Locke, J., Snidman, N., & Kagan, J. (1999) 'Behavioural inhibition in children from families at high risk for developing alcoholism' *Journal of the American Academy of Child and Adolescent Psychiatry*, 38(4):410-17 Design: Matched pair case-control study Rating: Weak	To test whether children at risk for the development of adult alcohol dependence (COA compared to controls) would show behavioural inhibition to the unfamiliar, an early childhood temperament characteristic.	N=18 matched pairs of children aged 4 to 6 (from white only families matched on age, socio-economic status and gender) from high-risk (offspring of parents who came from multigenerational, high-density alcoholism pedigrees and absent of depression and schizophrenia) and low-risk (one parent is from a pedigree with a low density of alcoholism and absent of depression and schizophrenia) groups who are resident in the Pittsburgh metropolitan area. Measure: Parents' diagnosis made using DSM-II criteria for Axis I psychopathology and the Research Diagnostic Criteria diagnosis for alcoholism. For three separate play sessions the child was observed during each of the 30-minute sessions through a one-way mirrored window, supplemented by cameras with additional views. Two primary raters (one per child) and a backup staff member monitored primary raters. Measures: 1) Latency of the first occasion to speak. 2) Amount of time spent in proximal to the parent. 3) Amount of time staring at the other child. 4) Total time speaking. 5) Latency to touch toys.	Analysis used repeated-measures analysis of variance. Present data demonstrate that preschool white children, with familial loading for alcoholism far in excess of that found in the general population are more likely to be behaviourally inhibited to the unfamiliar than children of parents without familial loading. Increased behavioural inhibition among the high-risk children was seen for the three major variables (staring (mean time of staring of 46.4 seconds vs. 7.3 seconds), spending time proximal to the parent, and total time speaking to the other child (mean time of speaking of 106.5 seconds vs. 172.2 seconds)). No statistically significant differences by risk group for latency to touch toys or latency to speak.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
17. Ozkaragoz, T., Satz, P., & Noble, E. P. (1997) 'Neuropsychological functioning in sons of active alcoholic, recovering alcoholic, and social drinking fathers' *Alcohol*, 14(1):31-37 Design: Case-control study Rating: Weak	Hypotheses: 1. Offspring of active alcoholic parents whose alcoholism is more likely genetically based and more severe in form will show significant differences in selective areas of cognitive function relative to children of non-alcoholics. 2. Children of recovering alcoholics whose alcoholism is more likely environmentally induced and less severe in form will be less likely to show differences in certain areas of cognitive function relative to children of non-alcoholics.	Subjects were 10–14-year-old sons of active alcoholic fathers (AAF (the more severe group); N=56), recovering alcoholic fathers (RAF (the less severe group); N=56) non-alcoholic social drinking fathers (SDF; N=72). Recruitment: By distributing flyers to elementary and junior high schools in Los Angeles. Volunteers phoned the UCLA Alcohol Research Centre and were screened. If they passed the screen a more in-depth interview regarding parents' medical, psychiatric and social history was conducted. (The Structured Clinical Interviews (SCID) for the DSM-III-R for alcohol abuse/dependence were administered.) Inclusion/exclusion criteria: 1. AAF and RAF sons must have an alcoholic father who himself has at least one first- or second-degree relative who is an alcoholic. 2. AAF and RAF must meet DSM-III-R criteria for alcohol dependence. 3. AAF and RAF sons whose mother had a history of alcoholism were accepted. 4. SDF sons' parents could have no more than one first- or second-degree relative who is an alcoholic. 5. None of the sons must have a history of alcohol or other drug use and no use of psychoactive medications.	Verbal IQ and FSIQ of sons of AFFs were significantly lower than the VIQ and FSIQ of sons of SDFs. No significant difference between IQ measures for sons of RAFs and SDFs. AAF sons' Visual Motor Integration mean score was significantly lower than the other two groups. No significant difference between this measure for sons of RAFs and SDFs. Similarly, the embedded figures test and Rey-Osterreith Complex Figure mean scores showed that AAF sons' mean scores were lower than the other two groups. AAF sons' Digit Span scores were significantly lower than both RAF and SDF sons' scores. On the Rey Auditory Verbal Learning Test AFF sons' mean scores were lower than the other two groups. For the Colour Trails 1 and 2, AFF sons had a significantly greater number of mistakes than both RAF and SDF sons. RAF and AAF groups had significantly higher scores on the total problem scale than the SDF groups. Sons of RAFs showed no significant difference from social drinking fathers in their cognitive functioning.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
		6. Sons – no head injury or major psychiatric illness. 7. No hearing or vision impairment (correction lenses accepted). 8. Parents willing to have friend and relatives contacted to verify their drinking history, child's medical history. 9. Sons willing to have random urine tests for alcohol and drugs. 10. Bilingual sons underwent English as a primary language test. Examiners blind to subjects group membership. Measures: 1. Visuospatial skills (adult version of the embedded figures test), Rey-Osterreith Complex Figure and the Visual-Motor Integration Test. 2. Memory (Rey Auditory Verbal Learning Test). 3. Attention and Visual Scanning (Adult version of Colour Trail 1 and 2. 4. Motor skills (the PIN test). 5. IQ – the Wechsler Intelligence Scale for Children – Revised. 6. Emotional function – Child Behaviour Checklist (total problem scale).			

Study	**Research quest**	**Participants & methods**	**Results**	**Other findings**	**Comment**
18. Holt, E.S., & Kaiser, D.H. (2001) 'Indicators of familial alcoholism in children's kinetic family drawings' *Art Therapy: Journal of the American Art Therapy Association*, 18(2):89-95 Design: Case-control study Rating: Weak	Test the hypothesis that the kinetic family drawings (KFDs) of children of alcoholics (COAs) would differ from those of children with no known history of parental alcohol abuse.	Participants: The cases were 17 (male and female) children aged 7–12 identified as COAs who had participated in support groups at three mental health facilities in an urban area in the mid-Atlantic region of the US. The controls were 17 (male and female) children aged 7–12 at a private elementary school in the same geographical area. All participants were volunteers. Method: A rating scale – the Family Alcoholism Drawing Scale (FADS) – was developed by the author to rate the items hypothesised to occur more frequently in the COA drawings. The KFD was administered to each child-participant. The KFD was designed to reveal an individual's perception of his or her self-concept, interpersonal relationships, and family dynamics and interaction. FADS comprises items believed to suggest parental alcohol abuse: the presence of containers, the presence of alcohol containers, the presence of water, the presence of water themes, depiction of isolation of a self-figure, and depiction of isolation of the other members of the family. Children were asked to draw a picture of their family doing something together and asked to identify the family members in their drawings. Three raters blind to nature of the study were randomly given each drawing for rating.	No significant difference between raters. For total drawing scores the mean scores of the COAs were significantly higher than the control group's mean scores. Depiction of isolation of the self-figure in COAs was significantly higher than the control group. Depiction of isolation of family members in the COA group was significantly higher than the control group.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
19. Kanter, R.A., Williams, B.E., & Cummings, C. (1992) 'Personal and parental alcohol abuse and victimization in obese binge eaters and non-bingeing obese' *Additive Behaviours*, 17:439-445 Design: Case-control study Rating: Weak	Hypothesis: Obese binge eaters (OBE) when compared with non-bingeing obese (NBO) would have higher rates of personal and parental alcohol abuse and victimisation.	Participants: Subjects were drawn from a sample of obese adults participating in an outpatient treatment programme. All patients entering the programme between June 1988 and July 1989 were approached; 62% participated in this study. N=336 (62 males, 274 females). Mean age of sample 44, mean BMI 40. The Psychosocial Risk Factor Inventory (PRIF) was administered to all participants to assess: binge eating, purge behaviours, patient alcohol abuse, parental alcohol abuse and victimisation (physical and sexual). Binge eating was classified as such based on positive responses to various questions (the results were validated using the Binge Eating Scale). Patient alcohol abuse was measured using the Self-Administered Alcoholism Screening Test (SAAST); parental alcohol abuse was assessed using the Children of Alcoholics Screening Test (CAST); and victimisation was measured by positive responses to a number of screening questions.	There was a significant difference for BSE scores, with OBE having significantly higher binge scores than NBO (26.9 vs. 13.4). OBE had significantly higher frequency of personal alcohol abuse (18.9% vs. 6.1%), parental alcohol abuse (36.8% vs. 21.1%), and victimisation (45.7% vs. 30.7%), than did the NBO sample. Childhood physical and sexual abuse was more common for OBE than NBO (but not statistically significant).		

Study	Research quest	Participants & methods	Results	Other findings	Comment
20. Johnson, J. & Rolf, J. (1988) 'Cognitive functioning in children from alcoholic and non-alcoholic families' *British Journal of Addiction*, 83:849-857 Design: Case-control study Rating: Weak	Examines both academic abilities and intellectual functioning in children who are from families that are not socio-economically disadvantaged. Performance on these cognitive tasks is compared between children of recovering alcoholics and children of non-alcoholics.	N=98 male and female children aged 6–18 years (N=50 COAs and N=48 NCOAs). Inclusion criteria of children: i) Lived at home with one or both biological parents. ii) Had no significant acute or chronic medical problems. iii) Had no problems of vision, audition or speech. iv) Had no history of significant head injury or trauma to the central nervous system. v) Had no history of major psychiatric illness. Comparisons of groups: did not differ on age, sex, alcohol or any other drug use. Subject recruitment was from several sources of volunteers who were residents of the Maryland and Virginia suburbs of Washington DC. Inclusion of parents and child: Biological fathers were considered alcoholic if they met the Family History-Research Diagnostic Criteria and the DSM-III. Also if they were recovering alcoholics and had not been drinking for at least 6 months. Measures: 1. Children: academic performance (the Wide Range Achievement Test), intellectual functioning (the Wechsler Intelligence Scale for Children – Revised or the Wechsler Adult Intelligence scale (16+ years), self-reports	All results adjusted for child's age. No statistically significant differences between groups on verbal performance, or full IQ. No statistically significant differences between groups on WRAT percentile score for reading, spelling or arithmetic. More positive self-perception among children of non-alcoholics. Children of alcoholics had lower self-estimates of perceived competence. CBCL T-score was significantly lower for children from alcoholic families. Maternal ratings of cognitive competencies of target children in alcoholic families were significantly lower than controls.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
	of perceived competence (perceived competence scale for children). 2. Maternal: the Child Behaviour Checklist (CBCL), the Parent Questionnaire, Perceived Competence scale for Children – Parents' Version.				

Study	Research quest	Participants & methods	Results	Other findings	Comment
21. McGrath, C.E, Watson, A.L., & Chassin, L. (1999) 'Academic achievement in adolescent children of alcoholics' *Journal of Studies on Alcohol*, 60(1):18-26 Design: Matched case-control study Rating: Weak	To test whether adolescent children of alcoholics (COAs) showed poorer academic performance than did demographically matched controls and whether such parent alcoholism effects varied as a function of heterogeneity within the COA sample.	(N=417) N=221 adolescent COAs (at least one biological (also custodial) parent was an alcoholic based on the drug section of the Diagnostic Inventory Schedule-III taken at time 1) and N=196 demographically matched controls and their parents from a larger 3-year longitudinal study (N=454). Comparison groups similar on age, gender, ethnicity, parent age, parent education, parents' alcohol consequences and symptoms, parents' family organisation and involvement in adolescents' school activities. Exclusion: Those with higher stress levels and lower task orientation scores and those without academic achievement data. Case inclusions: Parents born between 1927 and 1960, Hispanic or non-Hispanic white ethnicity, Arizona residency, child aged 10–16 years, English speaking and no cognitive impairments, biological and custodial parent was an alcoholic based on the DSM-III of the Diagnostic Inventory Schedule-III or the Family History-Research Diagnostic Criteria (FH-RDC). Controls: Recruited using telephone interviews using reverse directories to locate families in the same neighbourhood. Matched on ethnicity, family composition, target child's age and SES (property value). Response rate for cases was 98% of the 72.8% of the original sample and controls 77.3%. Measures: i) Demographics. ii) Parental education. iii) Parental alcoholism. iv) Parent psychopathology. v) Adolescents' task orientation (Rochester Teacher-Child Rating Scale). vi) Adolescents' life stress (General Life Events Schedule for Children). vii) Parents' family organisation. viii) Parental involvement in adolescents' school activities. ix) Adolescents' academic achievement (Reading comprehension and mathematics subtests).	Analysis: Multiple regression analysis. COAs received lower school grades than their non-COAs peers. COAs with two alcoholic parents and at least one parent diagnosed alcohol dependent showed particularly low grades. Parental alcohol dependence was also associated with lower math achievement scores. Evidence indicated the adolescents' task orientation mediated the relation between parental alcohol dependence and adolescent grades and between parental alcohol dependence and maths achievement. Adolescent life stress did not mediate the relations of interest once controlling for task orientation.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
22. Kuperman, S., Schlosser, S., Lidral, J., & Reich, W. (1999) 'Relationship of child psychopathology to parent alcoholism and antisocial personality disorder' *Journal of the American Academy and Adolescent Psychiatry*, 38(6): 686-92 Design: Case-control study Rating: Weak	To evaluate the contributions of familial factors including parental diagnoses of alcoholism and/or antisocial personality disorder (ASPD) to the risk of developing various child psychiatric diagnoses.	N=463 children and their biological parents, N=118 children from 67 families in the 'no parental alcoholism or ASPD' (NPAA) group, 266 children from 165 families in the 'parental alcoholism only' (PAO) group and 79 children from 50 families in the 'both parental alcoholism and ASPD' (BPAA) group. Recruitment: Use of the Collaborative Study on the Genetics of Alcoholism (COGA) sample. Three-quarters of the children in this study were high-risk COGA families through: i) An adult family member was in treatment for alcoholism. ii) According to the Semi-Structured Assessment for the Genetics of Alcoholism (SSAGA) this person was determined to have both DSM-III-R diagnosis of alcohol dependence and a Feighner diagnoses of definite alcoholism. iii) This person gave permission to contact all immediate and extended relatives including children for enrolment. The remaining low-risk COGA families were recruited through dental and family practice clinics, businesses, churches, and driver's licence renewal centres. Measures examined from DSM-III-R for the child were: i) Disruptive behaviour disorders of attention-deficit hyperactivity disorder (ADHD), conduct disorder (CD) and oppositional defiant disorder (ODD). ii) Internalising disorders of OAD and separation anxiety disorder. iii) Substance abuse – alcohol abuse and marijuana abuse. Family variables included: i) Child-parent interactions: (12-Child Semi-Structured Assessment for the Genetics of Alcoholism (C-SSAGA) questions). ii) Family: SES-family income, family structure, parents' education.	Analysis: Generalised estimating equation modelling. Among offspring, parental alcoholism was associated with increased risks of attention-deficit hyperactivity disorder (ADHD), conduct disorder (CD) and overanxious disorder (OAD). Parental alcoholism plus ASPD was associated with increased risk for ODD. Dysfunctional parenting style was associated with increased risk for CD, alcohol abuse and marijuana abuse. Low family SES was associated with increased risk for CD.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
23. Gabel, S., & Shindledecker, R. (1992) 'Behaviour problems in sons and daughters of substance abusing parents' *Child Psychiatry and Human Development*, 23(2): 99-115 Design: Retrospective cross-sectional study Rating: Weak	Examine whether relationships exist between substance abuse in parents and psychiatric and behavioural disorder in their male and female children and adolescents.	Discharge records of N=349 children and adolescents ranging in age from 4–18 years from four sources: 1) Children's Day Hospital of The New York Hospital-Cornell Medical Centre Westchester Division (NYH-CMC-WD); 2) Manhattan Children's Psychiatric Centre; 3) Children's Inpatient Unit of NYH-CMC-WD; 4) various inpatient units at NYH-CMC-WD on which adolescents were hospitalised. Records were collected over different time periods between 1981 and mid 1988 from each source. Charts were reviewed and data were collected on: i) Demographics – age, gender, SES (received medi-aid),	Analysis: Relationships between parental substance use and severe aggressive/destructive behaviour, conduct disorder and other variables, stratified by gender were quantified by chi square analysis and Fisher's Exact test (2-tailed, when expected cell size less than 5). Results: For boys: Sons of substance-abusing parents were more likely to be economically disadvantaged and to have been involved in suspected child abuse/ maltreatment. No significant difference between boys with substance-abusing parents and boys		

Study	Research quest	Participants & methods	Results	Other findings	Comment
		ethnicity, etc. ii) Child/adolescent variables – severe aggressive/destructive behaviour, suicidal ideation/threats/behaviour. iii) Parental/family variables – parental substance abuse (alcohol and other substances), suspected child abuse/maltreatment. iv) Admission diagnoses according to DSM-III or DSM-III-R.	without substance-abusing parents on severe aggressive/destructive behaviour, conduct disorder, ADD or depressive disorder diagnoses. For girls: Daughters of substance-abusing parents were more likely to be non-white, economically disadvantaged and to have been involved in suspected child abuse/maltreatment. Daughters of substance-abusing parents compared to daughters of non-substance-abusing parents were significantly more likely to have severe aggressive/destructive behaviour and ADD diagnoses, but not CD. Daughters of substance-abusing mothers show significantly increased rates of ADD diagnoses and severe aggressive/destructive behaviour. Boys of substance-abusing parents are significantly more likely to have CD diagnoses than girls of substance-abusing parents.		

Study	**Research quest**	**Participants & methods**	**Results**	**Other findings**	**Comment**
24. Corrao, G., Busellu, G., Valenti, M., Lepore, A.R., Sconci, V., Casacchia, M., & di Orio, F. (1993) 'Alcohol-related problems within the family and global functioning of the children: A population-based study' *Social Psychiatry and Psychiatric Epidemiology,* 28:304-308 Design: Cross-sectional population-based survey. Rating: Weak	To design a population-based study to assess the risk of disordered functioning in children of alcoholic parents.	N=394 (out of 404; 97%) children attending nursery, primary and secondary schools during the school year 1990–1991 in two municipalities of L'Aquila district in central Italy. Measures: i) Child's global functioning level (Children's Global Assessment Scale (CGAS) measuring presence of disordered functioning). ii) Family social status (family size, parental age and duration of parents' educational period). iii) Presence of alcohol-related problems in the family (general practitioner and teachers reported families with alcohol-related problems; no reports, one report (teacher or GP), two reports (teacher & GP)).	Analysis: ANOVA was used to compare mean CGAS scores between groups and multiple logistic regression models were used to assess risk controlling for child's age and sex, family size, and age and duration of parents' education. There was significant association between the children's global function level and the presence of alcohol-related problems. The mean score was lower in those reporting alcohol-related problems. Children whose families had alcohol problems had twice the risk of the child's global functioning score being 10 points lower than those who did not. The association was stronger (five-fold risk) in children aged 9 or over. Male children were more likely to be affected by the presence of alcohol-related problems in the family.		

Study	**Research quest**	**Participants & methods**	**Results**	**Other findings**	**Comment**
25. Jester, J., Jacobson, S.W., Sokol, R.J., Tuttle, B.S., & Jacobson, J.L. (2000) 'The influence of maternal drinking and drug use on the quality of the home environment of school-aged children' *Alcoholism: Clinical and Experimental Research*, 24(8): 1187-1197 Design: Longitudinal study	Examine the effects on child's environment of the female caregiver's current level and pattern of drinking and the lifetime history of social and physiologic problems due to drinking.	Women were recruited during pregnancy on their first prenatal visit to a large urban maternity hospital. All African-American women who averaged seven or more drinks per week at the time of conception were invited to participate in the study as well as a 5% random sample of lighter drinkers and abstainers. N=480 children were assessed during infancy; 340 children (70.8% of original sample) at 7.5 years of age. Current analysis used only 231 of these children as the data were still being collected. Measures: Demographics (living arrangements, caregiver's	Analysis: Regression analysis to model outcomes measures in terms of substance use. Alcohol consumption and hard drug use were each independently related to lower scores on the Smooth Family functioning scale. Alcohol use was related to lower HOME scores and increased domestic violence, including verbal, physical and potentially lethal abuse (after controlling for use of illicit drugs). Frequent use of hard drugs was related to lower Smooth Family functioning, higher verbal abuse and more depression (after	Lifetime problems and current drinking independently contributed to poor family functioning, both respondent and partner's use of violence in conflict, and the cumulative risk measures. For quality of intellectual stimulation (HOME) only the current amount of alcohol drinking was important. Maternal depression was related only to the caregiver's lifetime	

Study	Research quest	Participants & methods	Results	Other findings	Comment
Rating: Weak		education, occupation, marital status, age and SES (Hollingshead's four factor model), caregiver vocabulary (Peabody Picture Vocabulary Test-Revised). Family environment scale (used to develop four-factor scales for: smooth family functioning, traditional values, autonomy, and conflict. Intellectual stimulation and emotional support (HOME). The conflict Tactics Scale for reasoning, verbal abuse, physical violence, and potentially lethal violence. Beck Depression inventory to assess depress symptoms. Substance use – alcohol (typical amount and frequency and quantity) and MAST (Michigan Alcoholism Screening test) to evaluate negative consequences of drinking experience during caregiver's lifetime.	controlling for alcohol and marijuana use). Patterns of drinking were considered based on the number of drinks per occasion and the frequency of drinking: abstainers; infrequent drinkers (less than 2 days/month); intermediate (less than 6 drinks/ occasion, from 2 to 8 days/month, or less than 2 drinks/ occasion, more than 8 days/month); frequent intermediate (2-6 occasions at least 8 day/month); heavy (at least 6 drinks/occasion, 2 to 8 days/month) and frequent heavy (at least 6 drinks/occasion, at least 8 days/month). Only frequent heavy drinkers had more problematic scores on the HOME, domestic violence and Smooth Family Functioning. Families with frequent heavy drinking caregivers were more than three times as likely to be at risk for poor family functioning; more than twice as likely to provide inadequate intellectual stimulation (HOME score); nearly three times as likely to have very high levels of domestic violence; and nearly twice as likely to have caregivers who did not complete high school. Families with the heaviest drinking caregivers were more likely to be a multiple risk group: at risk on three or more factors simultaneously.	alcohol problem (when controlling for current drinking behaviour).	

Study	Research quest	Participants & methods	Results	Other findings	Comment
26. Eiden, R.D., Leonard, K.E., & Morrisey, S. (2001) 'Paternal alcoholism and toddler noncompliance' *Alcoholism: Clinical and Experimental Research*, 25(11): 1621-1633 Design: Longitudinal study Rating: Weak	1) To examine whether children of alcoholic and non-alcoholic fathers exhibited differences in the development of compliance from 18 to 24 months of age. 2) Understand the role of other risk factors in predicting compliance at 24 months.	N=214 families with 12-month-old infants who volunteered for an ongoing longitudinal study of parenting and infant development (N=96 control group of light drinking or abstaining in both parents; N=89 father was an alcoholic, mother light drinker; N=30 father was an alcoholic, mother was a heavy drinker). Families followed up at 12, 18 and 24 months. Around 90% of sample was white. All mothers were cohabitating with the father of the infant in the study. Some group differences in ethnicity and education levels between control and alcohol groups. Recruitment: Names and addresses of participating families were obtained from the New York State birth records for Erie County and were preselected for normal gestational age, birth weight and maternal age between 18 and 40 years. Inclusion criteria: Parents cohabitating since infant's birth; target infant the youngest child; mother not pregnant at recruitment; no mother-infant separations longer than a week; parents primary caregivers; infant had no major medical problems; mothers did not use drugs during pregnancy or past year (except mild marijuana use); mother's average daily ethanol	Analysis: Repeated-measures analysis of variance with child age and parent as within subject factors and child sex and group status (control and two-case groups) as between-factor subjects. In the control group, girls exhibited more committed compliance compared with boys at 18 months but not at 24 months. At 24 months girls exhibited more committed compliance compared with boys in both alcoholic groups. At 24 months girls in families with two alcohol-problem parents showed more committed compliance compared with girls in the control group. At 24 months boys in the group with two alcohol-problem parents continued to exhibit significantly higher resistance compared with boys in the control group. At 24 months girls in the control group had significantly higher levels of resistance compared with girls in the two alcohol-problem parents group. Multivariate ANOVA was used to examine the association between fathers' alcoholism and other risk factors. Alcoholic fathers were more antisocial and depressed compared with those in the control group. Mothers		

Study	Research quest	Participants & methods	Results	Other findings	Comment
		consumption 15mls or less; mother did not engage in binge drinking (five or more drinks per session) during pregnancy. Control group: Mothers scored below 3 on TWEAK test and did not binge drink or meet DSM-IV criteria for abuse or dependence; fathers did not meet RDC criteria for alcoholism according to maternal report, never been in treatment and had few alcohol-related problems. Cases: Father was an alcoholic either according to mother's report, or self-reported, or met DSM-IV criteria. Mother's TWEAK score higher than 3 or average daily alcohol consumption 30mls or higher, or binge drinking in last month, or met DSM-IV diagnoses for abuse. Control families were matched to the two case groups with respect to race/ethnicity, maternal education, child sex, parity, and marital status. Measures: Parental alcohol use (quantity and frequency measures), parents' antisocial behaviour (Antisocial Behaviour Checklist), parents' depression (centre for epidemiologic studies depression inventory), parents' aggression (Conflict Tactics Scale), verbal aggression (Index of Spouse Abuse scale), infant temperament (Infant Characteristics Questionnaire), parenting behaviour (free-play interactions), cumulative risk scores (composite scores of paternal and maternal scores measures above), child compliance (assessed during a clean-up period after free-play).	(regardless of own alcohol status) with alcoholic partners were more depressed compared to controls. Mothers with alcohol problems were more antisocial. Within families with two alcohol-problem parents, mothers displayed higher levels of partner aggression among families with girls compared with those with boys. Among families with boys, those with both parents in the father-alcoholic group displayed higher levels of aggression towards each other compared to controls. Among families with girls, those with two alcohol-problem parents displayed higher levels of partner aggression compared to both the other groups. Mothers with alcohol problems displayed higher negative effect, lower positive engagement and lower sensitivity during free-play interactions compared with mothers in the other two groups. Among boys with high-risk scores, fathers' alcohol use did not have any effect on committed compliance. Among boys with low-risk scores, higher levels of alcohol problem severity were associated with lower committed compliance. More severe parental alcohol problems were associated with higher passive non-compliance. Higher maternal alcohol problem was associated with higher resistance. Girls with two alcohol-problem parents may be exhibiting higher levels of compliance (than controls) due to fear.		
Study	**Research quest**	**Participants & methods**	**Results**	**Other findings**	**Comment**
27. Hyphantis, T. Koutras, V., Liakos, A., & Marselos, M. (1991) 'Alcohol and drug use, family situation and school performance in adolescent children of alcoholics' *International Journal of Social Psychiatry*, 37(1):35-42 Design: Cross-sectional survey Rating: Weak	Examine the consequences of parental alcoholism on the functional structure of the family (family situation, family relationships, and school performance of children) as well as the alcohol and drug use by adolescent members of these families.	N=7,904 Greek high school students (grades 9 and 12) from Athens, Patras and Ioannina. Method: An anonymous multiple-choice questionnaire of 103 items including child-reported parents' alcohol abuse, and self-reported abuse of substances. Questionnaire administered in the class room during normal class period. Analysis: Chi-square and multiple regression analyses were used to examine associations between the students' drug use and major background factors, as well as between parental use and factors related to family function.	Parental alcoholism exists in families of lower total income, disturbs the family stability, damages the relationships between family members, and influences negatively the school performance of the children. Regression analysis shows families with an alcoholic are more likely to be of low socio-economic status, adolescent works, parents have psychiatric or physical health problems, and there are disturbed family relationships. Students with an alcoholic parent reported regular alcohol use three times more frequently, twice as much occasional or regular drug use and twice as much drug experimenting in comparison with the rest of the sample.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
28. Zhang, J.F, Wang, J., Lu, Y.X., Qiu, X.X., & Fang, Y. (2004) 'Alcohol abuse in a metropolitan city in China: A study of the prevalence and risk factors' *Addiction*, 99:1103-1110 Design: Cross-sectional study Rating: Weak	To estimate the prevalence of alcohol abuse in modern China and to explore the risk factors that may be associated with alcohol abuse.	Participants: The target population was people aged between 15 and 65 years living in the urban area of Wuhan City, the capital of Hubei Province, located in central China. Sampling: Employed proportional stratification, random sampling and clustering procedures. Wuhan was stratified into eight main urban central districts and each stratum had a number of clusters (community centres) proportional to population in each stratum. Over 50 clusters were randomly selected and 40–50 people aged 15–65 years were drawn randomly from each cluster. A total of 2,630 people were chosen to be interviewed between May and June 2002. N=2,327 completed face-to-face interviews (response rate was 88.5%). Measures: Alcohol consumption (frequency and typical amount); frequency of drunkenness; alcohol abuse score (based on annual frequency, daily drinking, and negative consequences of alcohol); parents' and friends' drinking (frequency of each parent and of friends and fellows); attitudes towards drinking; demographics (age, sex, weight, height, income, education status, family status, smoker).	Analysis: Multiple logistic regression with binary dependent variable abuse and independent variables sex, age, income, family, smoker, father drink, mother drink, friends drink, fellows drink, and attitudes towards drinking. Results: A total of 22% of current drinkers were classified as alcohol abusers (30% of male and 5% of female current drinkers). Regression analysis showed that gender (being male), age (older in age), higher personal income, smoking, mother's drinking behaviour (very frequently), friends' and fellows' drinking behaviours (most of my friends and colleagues drink alcohol), and agree with the attitudes of 'being drunk occasionally does not matter', 'drinkers have more friends than abstainers', 'one cannot drink enough when drinking with close friends', 'it is a good way to socialise' and who disagree with the attitude 'too much drinking is bad for health'. Except for gender, maternal influence on offspring's alcohol abuse is the most significant risk factor.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
29. Maynard, S. (1997) 'Growing up in an alcoholic family system: The effect on anxiety and differentiation of self' *Journal of Substance Abuse*, 9:161-170 Design: Case-control study Rating: Weak	Hypotheses: 1) Offspring of alcoholic families have lower levels of differentiation than offspring of non-alcoholic families. 2) Offspring of alcoholic families experience higher levels of anxiety than offspring of non-alcoholic families. 3) Subjects demonstrate an inverse relationship between their level of anxiety and their level of differentiation.	Participants: Adult volunteers were invited to participate from: 1) the author's private psychotherapy practice in Besthesda, MD; 2) a variety of local ACOA 12-step meetings; and 3) among the study body of Howard Community College (HCC) in Columbia, MD. Exclusion: 1) Offspring of drug addicts who did not drink alcohol. 2) Subjects who said they were from non-alcohol families but recorded other alcohol relatives. 3) Subjects who reported familial alcoholism but neither they nor their parents had attended professional treatment or 12-step meetings. 200 sets of questionnaire instruments were distributed among the different locations (psychotherapy office, HCC 3-masters level classes in the counselling department). Of the original 200 instruments 148 (74% response rate) were returned of which N=112 met the inclusion criteria. These subjects were divided into three comparison groups: Group A (N=40 offspring having no history of alcoholism in either	Analysis: F-tests (ANOVA) were used to compare groups. Group A was significantly younger than Group B but otherwise they were similar on gender, race, education, and SES. For hypothesis 1), offspring of alcoholics (Groups B and C) were not as well differentiated (mean scores were 60.6 and 66.5 respectively) as the offspring of non-alcoholics (mean score 74.2). For hypothesis 2), offspring of alcoholics (Groups B and C) had higher levels of state anxiety (mean scores were 53.6 and 46.4 respectively) than the offspring of non-alcoholics (mean score 38.7). Offspring of alcoholics (Groups B and C) had higher levels of trait anxiety (mean scores were 54.0 and 46.4 respectively) than the offspring of non-alcoholics (mean score 39.6). Offspring of alcoholics who had participated in professional treatment for themselves (Group B) had greater levels of trait anxiety than offspring of alcoholics who had not participated in professional	Subjects whose fathers were currently drinking were significantly more anxious (on both state and trait measures) and were also less differentiated than non-alcoholic families and those alcoholic families whose father no longer drank.	

Study	Research quest	Participants & methods	Results	Other findings	Comment
		parental or grand-parental generation); Group B (N=43 included offspring of alcoholics who had received paid professional treatment as an alcoholic family member); Group C (N=29 consisted of offspring of an alcoholic who had never received professional treatment (but had attended 12-step meetings)). Measures: The Haber Level of Differentiation-of-Self Scale (LDSS) was used to measure differentiation (emotional maturity and emotional dependency). The State-Trait Anxiety Inventory (STAI) was used to measure anxiety.	treatment (Group C). Finally, mean state and trait anxiety scores among females were significantly higher than in males. For hypothesis 3), among all subjects, differentiation inversely correlated with state anxiety and trait anxiety. This confirms lower levels of differentiation correspond with higher levels of both state and trait anxiety.		

Study	**Research quest**	**Participants & methods**	**Results**	**Other findings**	**Comment**
30. Lieb, R., Merikangas, K.R., Hofler, M., Pfister, H., Isensee, B., & Wittchen, H.U. (2002) 'Parental alcohol use disorder and alcohol use and disorders in offspring: A community study' *Psychological Medicine*, 32:63-78 Design: Longitudinal study Rating: Moderate	1) To what degree is parental history of alcohol use disorders (AUDs) associated with alcohol use in offspring in a community sample? 2) Is a history of parental AUDs associated with any particular patterns of progression of alcohol use in offspring? 3) What is the magnitude of the association between a parental history of AUDs and the occurrence of DSM-IV alcohol abuse in offspring? 4) Do children with affected parents differ in their age of onset of alcohol use and AUDs from children whose parents were not affected?	A random (community) sample of N=4,809 (of which 4,263 were located and were eligible to take part and only 3,021 agreed to take part) residents in metropolitan Munich and the surrounding counties of subjects aged 14–24. At baseline (T0) the response rate was 71% (N=3,021); at T1 (average of 20 months later) the response rate was 88%; at T2 (average time of 42 months later) the response rate was 84% (N=2,427). Data were analysed from N=2,427 families at time T2. Measures: Parents: Independent diagnostic interviews were conducted at baseline with parents of those aged 14 to 17 to measure parents' alcohol status, psychopathology in family and about the child's (ie the respondent's) infancy and childhood. Children (respondents): At baseline children were given the Munich-Composite-International-Diagnostic-Interview (M-CIDI), which contained DSM-IV and ICD-10 criteria for alcohol abuse and dependency. Lifetime alcohol use status was defined according to four categories: a) 'no/seldom use of alcohol', b) 'occasional use', c) 'regular use', d) 'hazardous use'. Alcohol use disorders were defined by DSM-IV criteria. For the other parents (of children aged 18 or over) a modified version of the Family History Research Diagnostic Criteria plus M-CIDI (including DSM-IV questions) was given at baseline. For analysis, parental alcohol abuse and dependence were grouped together under 'parental use disorder' (AUD).	Alcohol use disorders in parents and alcohol use and disorders in respondents: Across all categories males reported higher rates of the outcomes than females. Rates of affected parents were similar for males and females. Progression patterns in offspring: Offspring whose parents were both affected had a significantly increased risk of shift into higher use categories than offspring with no affected parents. Maternal AUD was associated with progression from occasional into regular use, whereas paternal AUD was additionally associated with progression from regular into hazardous use. Only offspring with two affected parents had an increased risk of progression from occasional into regular use. Female offspring of affected mothers had a higher risk of progression from occasional into hazardous use. Age of first onset of hazardous alcohol use in offspring: The peak incidence period of respondents with two affected parents is between the ages of 14 and 17. Overall hazard rates of respondents with both or one affected parent were significantly different from those with no affected parent. Hazardous alcohol use had an earlier onset in offspring with two affected parents compared to controls. Alcohol abuse and dependence in offspring: Respondents with an affected father had significantly higher rates of alcohol abuse and dependence than respondents without an affected father. No differences were found in respondents with or without affected mothers. First onset of abuse and dependence in offspring for alcohol dependence:		

Study	Research quest	Participants & methods	Results	Other findings	Comment
		Regression analysis: History of parental AUD was the independent variable and alcohol use and disorders in respondents were the outcomes. Associations between parental AUD and alcohol use disorders in respondents were analysed by using logistic regressions for binary outcomes. Sex and age of respondent were controlled for by including them as independent variables in the respective models. Because of different sampling methods, weighting was used in the analysis: unweighted N=2,427; weighted N=2,409.	Rates increased around age 13. Steepest increase at age 14 in respondents with two affected parents and rates remained stable at a high level at age 17. Hazard rates of respondents with both or one affected parent were significantly higher than those with no affected parent. For alcohol abuse: Rates began to increase at age 13. There was an earlier onset of alcohol abuse in respondents with both affected parents than those without affected parents.		

Study	**Research quest**	**Participants & methods**	**Results**	**Other findings**	**Comment**
31. Ohannessian, C.M., Hesselbrock, V.M., Kramer, J., Bucholz, K.K., Schuckit, M.A., Kuperman, S., & Nurnberger, J.I. Jr. (2004) 'Parental substance use consequences and adolescent psychopathology' *Journal of Studies on Alcohol*, 65(6):725-30 Design: Case-control study Rating: Weak	Examine the degree to which adolescents worried about or avoided their parent when their parent was using alcohol or drugs, and the degree to which the adolescent's parent became angry when drinking or using drugs. These substance use consequences in turn were examined in relation to adolescents' psychopathology, both by the gender of the adolescent and the gender of the parent.	Participants: All participants in this study were involved in the Collaborative Study on the Genetics of Alcoholism (COGA) sample. Three-quarters of the children in this study were high-risk (cases) COGA families recruited through: i) An adult family member was in treatment for alcoholism. ii) According to the Semi-structured Assessment for the Genetics of Alcoholism (SSAGA) this person was determined to have both DSM-III-R diagnosis of alcohol dependence and a Feighner diagnosis of definite alcoholism. iii) This person gave permission to contact all immediate and extended relatives, including children, for enrolment. The remaining low-risk (controls) COGA families were recruited through dental and family practice clinics, businesses, churches, and driver's licence renewal centres. For this study N=173 adolescents aged 13 to 17 and their biological parents (N=116 probands/cases and 57 controls). Measures: Parental substance use consequences were assessed with the Structured Assessment Record of Alcoholic Homes (SARAH). SARAH measures: concern/ worry about parent's substance use; avoidance of parent when drinking or using drugs; and parental anger when drinking or using drugs. The Semi-Structured Assessment for the Genetics of Alcoholism for Adolescents (C-SSAGA-A) was administered to all adolescents to assess psychopathology. The CSSAGA-A yields both current and lifetime DSM-III-R psychiatric diagnosis for which we are interested in: lifetime psychiatric diagnosis of alcohol dependence, conduct disorder and major depressive disorder.	Analysis: Logistic regression analyses were conducted to examine whether parental substance use consequences predicted adolescent psychological problems. Results: 1) Adolescent concerns about mother's substance use predicted alcohol dependence and major depressive disorder. Adolescent concerns about father's substance use predicted alcohol dependence. In the models above, older adolescents were more likely than younger adolescents to be diagnosed with alcohol dependence. 2) Avoidance of the mother while she was drinking or using drugs predicted adolescent alcohol dependence, conduct disorder, and major depressive disorder. Avoidance of the father while he was drinking or using drugs did not predict any adolescent psychiatric disorder. In the models above, older adolescents were more likely than younger adolescents to be diagnosed with alcohol dependence. 3) Maternal anger when drinking or using drugs predicted adolescent alcohol dependence, conduct disorder, and major depressive disorder. Maternal anger when drinking or using drugs predicted adolescent alcohol dependence for girls but not boys. In the models above, older adolescents were more likely than younger adolescents to be diagnosed with alcohol dependence.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
32. Casas-Gil, M.J., & Navarro-Guzman, J.I. (2002) 'School characteristics among children of alcoholic parents' *Psychological Reports*, 90:341-348 Design: Matched case-control survey Rating: Weak	To evaluate different academic and social indicators of poor school performance in a group of children with actively alcoholic parents and to compare these data with those of children of non-alcoholics.	N=226 children from the Cadiz, Spain, school district (N=118 controls and N=108 cases). Cases: Children (aged 7 to 16) of alcoholic parents coming from a Health Service. Alcoholism was diagnosed by DSM-IV criteria. Controls: Randomly selected children with same gender, age, school grade and social environment from the same private or public schools as the cases. Measures: The Specific Questionnaire of Social-Demographic and School Data was administered to the parents and teachers in both groups. Parents of control children were administered the Alcohol Use Disorders Identification Test (AUDIT). Case inclusion criteria: Outpatient of Health services that: i) had an alcohol abstinence period of less than two years; and ii) had school children aged between 7 and 16.	Analysis: Counts are compared using chi-squared test. Results: The general intelligence values in both groups were analogous. Children of alcoholic parents show a higher rate of repeating grades at school than controls of the same age and environment. The average academic grade of students of non-alcoholic parents is higher than that of cases. Children of alcoholic parents are nearly three times more likely to show school failure (repeating a grade and obtaining an average grade lower than 50% of the academic performance required and being aged over 10) than controls.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
33. Haugland, B. (2005) 'Recurrent disruptions of rituals and routines in families with paternal alcohol abuse' *Family Relations*, 54:225-241, Design: Qualitative in-depth semi-structured interviews	The first objective was to provide descriptive data on how family rituals and routines change or are maintained between phases of drinking and non-drinking in families with parental alcohol abuse. The second aim was to explore variation among families in terms of how parental drinking affected rituals and routines and to develop a typology of family types based on the following: extent and type of disruptions of family rituals and routines due to drinking and degree to which children were exposed to the paternal drinking and resultant disruptions.	Participants: N=23 families (with 51 children) were recruited by their therapists at four outpatient clinics for alcohol abusers in Norway. Inclusion: a) One or both parents were in treatment at an outpatient clinic for alcohol abusers. b) The parents were living together or separated just recently (<9 months). c) The family had at least one child aged between 5 and 11 years. Measures: 1) Demographic (age, education and SES of parents). 2) Parental drinking classification and characteristics were used to define heavy drinkers, problem drinkers and alcoholics. Note: The mothers had stopped drinking at the time of participation in the study. 3) Father's drinking was assessed by both parents on the Cahalan questionnaire. 4) Children were assessed by both parents on the Child Behaviour Checklist to measure child adjustment. 5) Therapists rated both parents' drinking according to the criteria of Goodwin et al (1974). 6) A semi-structured interview focusing on family rituals and routines (including routines and rituals during the morning, dinner time, the child's bedtime and methods of discipline, leisure activities, children's homework, and contact with friends and relatives, rituals related to Christmas, child's birthday,	Recurrent disruptions of rituals and routines were found between different phases in the drinking cycle. Disruptions were found typically with regard to the fathers' participation in rituals and routines, the parental roles and responsibility, the affective quality of the rituals, and the general family climate. Four categories of families were distinguished based on the amount and type of disruptions in family rituals and routines. The four types were: 1) Protective families. 2) Emotional disruptive families. 3) Exposing families. 4) Chaotic families. (See Table 2, p.235 of article for the characteristics of these families.)		

Study	Research quest	Participants & methods	Results	Other findings	Comment
		and summer holidays) was given to the parents. All interviews were tape-recorded and transcribed verbatim by a professional typist. Author checked the reliability of all transcripts. Analysis: N=21 used. 1) Text reduction using a process of 'meaning condensation' was done to make the amount of material more manageable. 2) Content analysis was done on the reduced scripts to leave only non-redundant themes addressing the following themes: a) changes in daily routines and rituals during morning, dinner and children's bedtime b) changes in methods of discipline, leisure activities and external boundaries c) changes in roles d) changes in emotional climate e) changes in annual celebrations. 3) Family typologies – to explore within-group variation, family typologies were developed that included level of disruption of family rituals and routines as well as child's level of exposure to parental drinking, hangovers and paternal conflicts.			

Study	**Research quest**	**Participants & methods**	**Results**	**Other findings**	**Comment**
34. Loukas, A., Zucker, R., Fitzgerald, H., & Krull, J. (2003) 'Development trajectories of disruptive behaviour problems among sons of alcoholics: Effects of parent psychopathology, family conflict, and child undercontrol' *Journal of Abnormal Psychology*, 112(1):119-131 Design: Longitudinal study Rating: Weak	Examined developmental trajectories of disruptive behaviour problems spanning the interval from preschool to early adolescence in a high-risk sample of male COAs and non-COAs.	Participants: N=302 non-Hispanic white families (biological mother, father and son). Recruitment: Cases: N=156 were recruited through administrative arrangements covering five local districts and all drunk-driving convictions in a four-county area in mid-Michigan; N=55 recruited from neighbours where drunk-drivers resided; N=22 from door-to-door canvassing for controls starting one block away from an alcoholic family. All cases met a 'definite' or 'probable' diagnosis for alcoholism using the Feighner diagnostic criteria and were verified by DIS-III as well as obtaining a positive alcohol diagnosis on the Short Michigan Alcoholism Screening Test (SMAST) and the drinking and drug history (DDH) questionnaire. Controls: N=69 from door-to-door canvassing starting one block away from an alcoholic family. Families matched on age (within 6 months) of biological son and same neighbourhood as case, and father, mother and sons lived together and both parents be neither alcoholic (did not meet DSM-IV criteria) nor drug abusing. At wave 3, had 190 (62.9% of original sample) families with data available for analysis.	Analysis: Hypothesis a) was tested using Spearman correlation coefficients. Hypotheses b)-e), which involved examining the distributions of the disruptive behaviour problems trajectories, were tested using growth curve modelling and Hierarchical Linear Modelling. Results: For hypothesis a): Spearman correlation supported the hypothesis and demonstrated that disruptive behaviour problems were stable across 3-year periods (wave 1-wave 2, wave 2-wave 3) and across the 6-year period of wave 1-wave 3. For hypothesis b): As expected boys tended to show fewer disruptive behaviour problems as they increased in age. For hypothesis c): The presence of paternal alcoholism at a particular time point was associated with an increase in disruptive behaviour problems at that time. For hypothesis d): Family conflict and child lack of control were significant and unique predictors of the average level of disruptive behaviour problems at age 6 as well as of the rate of decline. In comparison to their peers, boys who were exposed to		

Study	Research quest	Participants & methods	Results	Other findings	Comment
		Methods: Disruptive behaviour problems were assessed across three waves, separated by 3-year intervals, beginning when boys were 3 to 5 years old. Measures: Family status covariate: marital status and living situation. Parent alcohol diagnosis: positive alcohol dependence in last 3 years at each time point (SMAST, DIS-IV, and DDH). Parent ASPD-maternal or paternal diagnosis of lifetime ASPD using DIS information and the Antisocial Behaviour Checklist. Family conflict: conflict in the family environment was assessed using the Conflict sub-scale of the Family Environment Scale. Child lack of emotional and attentional control was assessed using a modified version of the Conners Parent Rating Scale. Child disruptive behaviour problems: assessed with the Aggression narrow-band subscale of the 4-18-year-old Child Behaviour Checklist. Hypotheses: a) Rank-order stability of child disruptive behaviour problems would be relatively high from wave 1 to wave 3. b) Overall levels of disruptive behaviour problems would decrease as children increased in age. c) The presence of parent alcoholism would be associated with disruptive behaviour problems. d) Parent ASPD, family conflict, and deficits in son's emotional and attentional control would predict elevated levels of disruptive behaviour problems at school entry and also would be associated with a slower rate of decline in these problems across time. e) Boys whose parents had ASPD and who lived in conflictual environments or who were high in undercontrol would show the highest levels of problems at school entry and a slower rate of decline in problems across time.	higher levels of family conflict had more disruptive behaviour problems at school entry and showed a slower rate of decline in such problems over time. For hypothesis e): Boys who are high in undercontrol and who have at least one parent with ASPD show the most disruptive behaviour problems at school entry and show increasingly higher levels of problems relative to their peers whose parents do not meet criteria for ASPD.		

Study	**Research quest**	**Participants & methods**	**Results**	**Other findings**	**Comment**
35. Woodside, M., Coughey, K., & Cohen, R. (1993) 'Medical costs of children of alcoholics – pay now or pay later' *Journal of Substance Abuse*, 5:281-287 Design: Case-control study Rating: Weak	To test the hypothesis that COAs have increased inpatient hospital utilisation rates resulting in higher economic costs than non-COAs.	This study is based on a large longitudinal data base of Independence Blue Cross (1987) Group Subscriber Health Insurance claimers for the years 1984 to 1986. The diagnosis of alcoholism in the data is based upon ICD-9 classifications of subscribers who were hospitalised within the 3-year period of this study. All children who had been hospitalised within the 3-year study period comprise the two study groups of children. N=62,388 (N=633 COAs and N=61,755 non-COAs). Ages of the children ranged from birth to 23 years.	Analysis: T-tests were used to compare proportions. Results: Rates of admission for COAs were significantly higher for mental disorders (adjustment reactions and depression (9.5% vs. 6.3%)); substance use (alcohol dependence, psychosis and abuse accounted for two-thirds of substance use (3.5% vs. 1.5%)); and injury/poisonings (fractures, dislocations, and sprains the most common (19.4% vs. 15.4%)).		

Study	Research quest	Participants & methods	Results	Other findings	Comment
36. Chandy, J.M., Harris, L., Blum, R.W., & Resnick, M.D. (1994) 'Female adolescents of alcohol misusers: Sexual behaviours' *Journal of Youth and Adolescence*, 23(6):695-709 Design: Cross-sectional study Rating: Weak	It is hypothesised that in comparison to the general sample of females (controls), the index group (cases) would be characterised by: 1. A greater proportion who have ever had sexual intercourse. 2. Earlier age of sexual debut. 3. Greater frequency of sexual intercourse. 4. Greater use of ineffective contraception. 5. A greater proportion who have ever been pregnant. 6. A higher overall pregnancy risk.	Participants: Data from the Adolescent Health Survey conducted in Minnesota during the 1986–1987 school year with a sample of 36,254 7th–12th grade public school students. All female respondents who reported either parent as using hard liquor daily were included in the sample of at-risk adolescents (N=1,134 index cases). Measures: Adolescents' self-report on the frequency of sexual intercourse, the age of first sexual debut, kind and frequency of contraception used, and pregnancy history. Pregnancy risk scale rating of High risk, Moderate risk and Low risk based on the answers to frequency of sexual intercourse and the use of effective birth control. Analysis: Inter-group (index cases vs. controls) comparisons were tested using chi-square. Multivariate discriminant analysis was used to classify individuals in index group into two groups with or without a history of pregnancy. And logistic regression was used to generate odds ratios of each of the discriminating variables.	Results: Index group was significantly older than the controls. A significantly greater proportion of index females reported having sexual intercourse compared to controls (51% vs. 35%). No statistical difference in mean age of first sexual debut. A significantly greater proportion of index females reported a history of pregnancy (9.3% vs. 5.5%) as well as greater overall pregnancy risk based on current patterns of sexual behaviour and contraceptive use. A significantly greater proportion of adolescents living with a mother who consumed hard liquor daily reported ever having sexual intercourse (62%) compared to those living with a drinking father (48%) or with both parents who drank (46%). A significantly greater proportion of index females living with a drinking mother were classified at moderate risk of pregnancy. Those with a drinking mother were significantly more likely to report a history of one or more pregnancies. Index respondents who did not live with two parents were at 1.3 times greater risk of pregnancy than those who did. A history of physical abuse increases risk of pregnancy by a factor of 1.9. Those with a mother who has at least some college education or above were 1.3 times more likely to have no pregnancy history compared to peers. Teenagers who perceived widespread vandalism in their school environment were 1.5 times at greater risk of becoming pregnant. Adolescents aged 15 years or older were 1.3 times more likely to become pregnant.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
37. 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(4):427-448 Design: Case-control study Rating: Weak	Possible etiologic factors were investigated in a sample of COAs and non-COAs that were at high-risk for alcoholism.	Subjects: A sample of N=490 (N=253 children of alcoholics (COAs) and N=237 children of non-alcoholics (non-COAs) from a 4-year longitudinal study that screened N=3,156 first-time college freshmen aged 18 years and older from a large, Midwestern state university. Methods: During the screening students were given a battery of tests including an assessment of under-controlled personality traits, quantity and frequency of alcohol use, frequency of heavy drinking, and drug use consequences and the Michigan Alcoholism Screening Test (MAST), as well as MAST adapted to refer to drinking patterns of subjects' biological mother (M-MAST) and father (F-	Analysis: Group comparison between COAs and non-COAs on continuous variables of interest (dependent/outcome) used analysis of variance (ANOVA). Dependent (Outcome) categorical data were analysed by log-linear analysis with risk status and gender as independent variables. Results: 1. Alcohol-related variables: COAs appear to be more involved with alcohol than do non-COAs on all measures. The effect was stronger for women than men with respect to DIS alcohol diagnosis for quantity-frequency of use in past month and negative alcohol consequences. 2. Alcohol expectancies: COAs		

Study	Research quest	Participants & methods	Results	Other findings	Comment
		MAST). Subjects scoring 4 or more on either adapted MASTs were tentatively classified as high-risk and subjects who scored 0 or 1 for each parent were tentatively classified as low-risk. These tentatively classified subjects (N=808) were administered the Family-History-Research Diagnostic Criteria (FH-RDC) either over the phone or in person. From this above number only N=490 took part in this current study as high-risk subjects were retained only if the FH-RDC indicated their biological father was an alcoholic and low-risk subjects did not have a first-degree or second-degree relative who was an alcohol or drug abuser. Over the course of three appointments N=490 subjects were administered sections of the Diagnostic Interview Schedule (VIII), extensive cognitive assessment, and a questionnaire battery that included measures of personality traits, alcohol and drug consumption patterns, alcohol expectancies, the occurrence of negative consequences due to alcohol and drug consumption and general psychiatric distress. Measures: Alcohol-related variables: quantity and frequency measures, frequency of heavy drinking, negative effects of alcohol consumption and DSM-III diagnoses of alcohol abuse and dependency from the DIS. Alcohol expectancies: 44 items of a questionnaire were reduced by principal factor analysis to the following: Tension Reduction, Social Lubrication, Activity Enhancement, and Performance Enhancement. Drug use and abuse: frequency of drug use, negative drug consequences and drug dependence symptoms (resulting in DSM-III diagnoses for drug abuse and dependence). Other psychopathology: DSM-III diagnoses for somatisation disorder, panic disorder, generalised anxiety disorder, phobic disorders, depression, anorexia nervosa, bulimia, and antisocial personality disorder. Brief Symptom Interview measures psychiatric distress and the General Severity Index measures current psychological distress. Personality: behavioural undercontrol (characteristics such as hyperactivity, impulsivity, extraversion, aggressiveness, antisociality etc), negative affectivity (tendency to experience negative emotional states), and other personality traits (private self-consciousness, reward	reported stronger expectancies on Tension Reduction, Social Lubrication, Activity Enhancement, and Performance Enhancement scales than did non-COAs. For Tension Reduction and Activity Enhancement the effect was limited to women. 3. Drug-related variables: COAs reported more negative consequences and drug dependence symptoms than non-COAs. COAs were more likely to have lifetime DSM-III drug abuse-dependence than non-COAs. 4. Psychopathology: COAs were more likely than non-COAs to be diagnosed as having a depressive episode, agoraphobia, social phobia, simple phobia, and generalised anxiety disorder. 5. Personality: COAs were found to be more undercontrolled than non-COAs. COAs scored higher on Neuroticism than non-COAs. COAs had lower self-esteem and reward dependence than non-COAs. 6. Cognitive functioning: COAs had lower performance on verbal ability, Block design score, delayed visual reproduction, and Digit symbol test than non-COAs. 7. Academic achievement: COAs obtained lower class rank and college test scores than non-COAs. The association between family history of alcoholism and alcohol involvement can be accounted for by mediation through behaviour undercontrol and alcohol expectancy. The relationship between family history and verbal ability does not appear to be related to alcohol involvement. Paternal alcoholism is highly associated with paternal antisocial personality disorder, drug abuse and depression and is also associated with maternal alcoholism and maternal personality disorder, drug abuse and depression.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
		dependence, self-esteem). Academic achievement: college admission test scores. Cognitive functioning: verbal ability (Wechsler Adult Intelligence Scale-Revised), learning and memory (Wechsler Memory Scale), non-verbal problem solving (WAIS-R Block Design and the Booklet Category Test), perceptual-motor ability (Trail-Making Test, Parts A and B and the WAIS-R Digit Symbol task), attention and concentration (WAIS-R Digit span).			

Study	**Research quest**	**Participants & methods**	**Results**	**Other findings**	**Comment**
38. Edwards, E.P., Leonard, K.E., & Das Eiden, R. (2001) 'Temperament and behavioural problems among infants in alcoholic families' *Infant Mental Health Journal*, 22(3):374-392 Design: Longitudinal study Rating: Weak	The present study explores the relationship between parental alcoholism, infant temperament and the behavioural development of toddlers by examining the following questions: 1) Is there a relationship between paternal alcoholism and infant temperament at 12 months of age? 2) Is there a relationship between paternal alcoholism and behavioural problems at 18 months of age? 3) Does temperament mediate the relationship between paternal alcoholism and behavioural problems? 4) Do temperament and alcoholism interact to predict behavioural problems? 5) Do the associated parental factors mediate or moderate the above relationship?	Participants: N=213 families (N=111 cases (father was an alcoholic and mother was a light or heavy drinker or abstained) and N=102 controls (both parents were light drinkers or abstained) who volunteered for an ongoing longitudinal study of parenting and infant development. Recruitment: Families were recruited through New York State birth records for Erie County and were preselected for normal gestational age, birth weight and maternal age between 18 and 40 years. N=9,457 introductory letters were sent to families who met the above criteria and N=2,285 indicated interest in the study. These families were further screened to meet the following inclusion criteria: Parents were cohabitating since infant's birth; target infant the youngest child; mother not pregnant at recruitment; no mother-infant separations longer than a week; parents primary caregivers; infant had no major medical problems; mothers did not use drugs during pregnancy or in past year (except mild marijuana use); mother's average daily ethanol consumption .50 or less; mother did not engage in binge drinking (5 or more drinks per session) during pregnancy. Families were given questionnaires (University of Michigan-Composite International Diagnostic Interview (UM-CIDI), Family History Research Diagnostic (FH-RD)) to answer and were assigned to three groups (control, father alcoholic/mother light drinker, father alcoholic/ mother heavy drinker) based on their responses. A father was an alcoholic if he met any of the following criteria: i) He met FH-RD criteria for alcoholism. ii) He acknowledged having a problem with alcohol or having been in a treatment programme. iii) He indicated alcohol problems according to UM-CIDI.	Results: Demographics: Alcoholic fathers were less educated compared to those of the control. Psychopathology: Alcoholic fathers scored significantly higher than control fathers on alcohol use, depression, antisocial behaviour and aggression. Women married to the alcoholics' scores were significantly higher than women married to control fathers on alcohol use, depression, antisocial behaviour and aggression. Temperament at 12 months: Infant children of alcoholics were reported to be more stubborn/persistent than children of controls. Mothers rated the infants more stubborn/persistent than fathers. Alcoholic fathers rated infants more unadaptable than control fathers while mothers in alcoholic groups rated their infants less unadaptable than control mothers. Behavioural problems at 18 months: Infants in alcoholic families had higher scores for internalising in control families. Hierarchical regression analysis was used to investigate alcohol problems and temperament as predictors of behavioural problems. Fathers' alcohol problems remained significantly associated with internalising problems after controlling for father's education and fussy/difficult and persistent temperament of the child (maternal alcohol problems did not aid in the prediction). For externalising problems, father's education and maternal alcohol problems did not aid in prediction and father's alcohol problem remained marginally related to externalising. After adjusting for the temperament factors fussy/difficult and persistent father's alcohol problem was no longer		

Study	Research quest	Participants & methods	Results	Other findings	Comment
		iv) He met DSM-IV criteria for abuse or dependence. A mother was considered a heavy drinker if she met any of the following: i) Average daily ethanol consumption of 1.00 or higher. ii) She acknowledged drinking five or more drinks per occasion at least once per month. iii) She met DSM-IV criteria for abuse or dependence. Families were classified as controls if neither father nor mother met criteria for alcoholism or heavy drinking respectively. Families were classified as father alcoholic/mother heavy drinker and father alcoholic/mother light drinker based on the above. Families were to be followed up when the infant was 12, 18, 24, 36 and 60 months. This paper focuses on 12- and 18-month questionnaire assessments. Measures: 1. Parental alcohol use: via quantity and frequency measures and alcohol abuse and dependence problem. 2. Parent's antisocial behaviour using the Antisocial Behaviour Checklist. 3. Parent's depression using the centre for epidemiologic studies depression inventory. 4. Parent's aggression: physical aggression was measured using the Conflict Tactics Scale and verbal aggression was measured using the Index of Spouse Abuse Scale. 5. Infant temperament was measured using the Infant Characteristics Questionnaire. 6. Child behaviour problems were measured using the Child Behaviour Checklist (CBCL). Analysis: Analysis of variance (ANOVA) was used to compare group differences.	significantly associated with externalising. Mothers with high depression were not impacted by father's alcohol problems, while mothers with low depression were.		

Study	**Research quest**	**Participants & methods**	**Results**	**Other findings**	**Comment**
39. Chandy, J.M., Harris, L., Blum, R.W., & Resnick, M.D. (1995) 'Female adolescents of alcohol misusers: Disordered eating features' *International Journal of Eating Disorders*, 17(3):283-289 SAME ARTICLE AS: Chandy, J.M., Harris, L., Blum, R.W., & Resnick, M.D. (1994) 'Disordered eating among adolescents whose parents misuse alcohol: Protective and risk factors'	1) Do the female teenagers of alcohol-abusing parents have disproportionate prevalence of eating disorders compared with other female adolescents? 2) What protective factors are associated with those female teenagers who did not develop eating disorders?	Participants: Data from the Adolescent Health Survey conducted in Minnesota during the 1986–1987 school year with a sample of 36,254 7th–12th grade public school students. All respondents who reported either parent as using hard liquor daily and whose families experienced problems related to drinking or drugs were included in the sample of at-risk adolescents (N=838 index cases). Measures: The self-reported disordered eating behaviours of the teenagers of substance-misusing parents were assessed by the following items: 1. Self-evaluation of weight, measured as overweight, right weight, and underweight. 2. Reports of having binge-eating episodes. 3. Reports of being afraid of not being able to stop eating.	Results: Students with substance-misusing parents differed significantly from the general population of Health Survey teenagers with regard to self-evaluation of weight (being overweight 54.1% of cases vs. 42.5% of controls), binge eating (38.9% of cases vs. 29.6% of controls), non-stop eating (21.0% of cases vs. 17.0% of controls), dieting (68.7% of cases vs. 61.7% of controls), vomiting and purging (19.5% of cases vs. 13.2% of controls) and use of Ipecac (1.9% of cases vs. 0.6% of controls) and diuretics (3.2% of cases vs. 1.7% of controls). The sample was divided into two groups: those who reported none of the above behaviours and those who reported three or more (N=347 cases omitted from this analysis). Four variables in the model were found to discriminate		

Study	Research quest	Participants & methods	Results	Other findings	Comment
International Journal of the Addictions, 29(4):505-516 Design: Cross-sectional study Rating: Weak		4. Frequency of dieting episodes measured on a 5-point scale ranging from never to always. 5. Indication of purposeful vomiting measured on a 5-point scale ranging from never to two or more times a week. 6. Reports of ever having used Ipecac to induce vomiting in order to lose weight. 7. Reports of ever having used diuretics to lose weight. Analysis: Analysis of variance (ANOVA) was used to compare group differences between the index cases and the remaining general sample. Thirty-one theoretically relevant variables from the Adolescent Health Survey including demographics, psychological, family, and school-related variables to compare members of the index group indicating disordered eating behaviours against those who did not using discriminant function analysis and logistic regression (to obtain odds ratios).	between the two groups (explaining 45% of the variance). The most powerful variable was satisfaction with present weight. The odds ratio indicated that dissatisfaction with present weight increased the likelihood of having three or more eating disorders by a factor of 3.5. Negative body image had an associated odds ratio of 2.0. Concern about being sexually forced increased the odds of eating disorders by 1.9, while perception of frequent use of liquor by students in school had an odds ratio of 1.2. These four variables correctly classified 84% of the resilient group and 86% of the at-risk group.		

Study	**Research quest**	**Participants & methods**	**Results**	**Other findings**	**Comment**
40. Marcus, A. (1986) 'Academic achievement in elementary school children of alcoholic mothers' *Journal of Clinical Psychology*, 42(2):372-376 Design: Case-control study Rating: Weak	This study compares the academic achievement of elementary school-age children who have alcoholic mothers with a group of similar children who have non-alcoholic mothers.	Participants: All subjects resided in Westchester County, New York. The experimental group (cases) consisted of N=40 children aged 7 to 12 (15 boys; 25 girls) whose mothers reported themselves to be alcoholic. (These women had sought treatment at an outpatient alcoholism facility and/or were members of Alcoholics Anonymous.) All cases reported they had had a problem with alcohol at some time during their child's lifetime. The control group consisted of N=40 children (20 boys, 20 girls) whose mothers reported they had not had a drinking problem. These women were volunteers from local churches and community organisations.) The presence of paternal alcoholism or other psychopathology for either group was not assessed. Method: 90% of mothers who initially volunteered signed written consent to participate. Each child's mother was interviewed using a structured interview developed specifically for this study. Interview data yielded demographic information, child's school history, maternal drinking history, pregnancy history, and information with regard to present drinking practices and SES was determined by Corrigan's modification of Hollingshead's two-factor Index of Social position. Child academic achievement was measured by administration of the Peabody Individual	Groups: Participating mothers were generally white, well educated and middle to upper class. The two groups were comparable on race, education and SES. The case mothers experienced significantly more marital disruption in terms of separation and divorce than did control mothers. Results: Significantly more alcoholic mothers drank during the term of pregnancy. Of those who did drink during pregnancy, alcoholic mothers drank alcohol significantly more often than control mothers. The two groups of children were similar on age, grade level, number of siblings, and previous grade retention. However, COA mothers were placed significantly more often than their counterparts in some type of special education class. COA mothers scored significantly lower on the mathematics, reading recognition and reading comprehension sub-scales and the total test score than did control children. The distribution of total test scores for case children was considerably more variable than the distribution for control children.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
		Achievement Test (PIAT). Standard subtest scores on mathematics, reading recognition, reading comprehension, spelling, and general information as well as total scores were derived for each child.			

Study	Research quest	Participants & methods	Results	Other findings	Comment
41. Moos, R., & Moos, B. (1984) 'The process of recovery from alcoholism: III. Comparing functioning in families of alcoholics and matched control families' *Journal of Studies on Alcohol*, 45(2):111-118 Design: Matched case-control study Design: Weak	1. Do families of recovered alcoholics function as well as families of matched community controls? 2. How do families of relapsed alcoholics differ from matched families of recovered alcoholics and community controls? 3. What factors affect the adequacy of family functioning among alcoholic families?	Participants: Cases: N=105 alcoholic patients and their spouses 6 months and 2 years after the patients completed treatment at one of five residential facilities. Controls: N=105 socio-demographically matched families from the same census tract as the alcoholic families. There were no significant differences between alcoholic and control families on family size, partner's age, ethnicity, education and religion. Groups of recovered (N=54) and relapsed (N=51) patients were identified on their basis of drinking history during the second year after treatment. Measures: Three sets of variables were measured using self-administered questionnaires. 1. Role functioning: each spouse was asked who (themselves, their partner or both of them jointly) usually performs each of 18 tasks such as planning and cooking meals, cleaning the house, handling the bills and making minor repairs. 2) Family environment: this was assessed by the average of the husband's and the wife's perceptions on the 10 dimensions of the Family Environment Scale (FES) which included the quality of interpersonal relationships in the family (cohesion, expressiveness and conflict), areas of personal growth emphasised by family members (independence, achievement, intellectual-cultural orientation, active-recreational orientation and moral-religious emphasis), and the degree of structure in the family (organisation and control). 3) Husband-wife congruence: measured by the degree of agreement between the spouses regarding family functioning and the family environment.	Analysis: Families of both recovered and relapsed patients were contrasted with the total control group. ANOVA was used to compare the three groups. Analyses of covariance (ANCOVA) controlling for the education of each spouse and the number of children living at home was also conducted. Results: Role performance and family environment: i) Spouses of relapsed alcoholics reported that they performed more household tasks than their alcoholic partners. ii) In comparison with the other two groups of spouses, the spouses of relapsed alcoholics reported that their partners performed fewer household tasks. iii) When employment status of the spouses and the number of children in the family were controlled for there were no differences among the three groups on tasks performed jointly. iv) Spouses of recovered alcoholics reported fewer family arguments than did either of the other groups of spouses. v) FES showed less cohesion and expressiveness among families of relapsed alcoholics compared to the other two groups. vi) Families of recovered alcoholics showed less emphasis on an active recreational orientation than did families of community controls. Husband-wife congruence: i) Spouses in the families of recovered alcoholics showed higher agreement on joint task participation. ii) Families of relapsed alcoholics showed significantly more disagreement about their family environment than did husbands and wives in the other two groups. Families of heavy-drinking relapsed patients: results were similar to the above but more extreme. Alcoholics and their spouses in these families perceived more family arguments (30% vs. 37%) and lower family cohesion and recreational orientation, and showed more disagreement about their family environment. Prediction of family functioning: Families in which the alcoholic members reported more alcohol consumption and drinking		

Study	Research quest	Participants & methods	Results	Other findings	Comment
			problems and complained of more anxiety, depression, and physical symptoms had more family arguments, less cohesion and expressiveness, and showed less agreement about their family environment and about joint task performance. Alcoholic members' use of avoidance coping was positively related to the number of family arguments and the extent of disagreement on joint task performance. There were more arguments and less agreement about joint task performance in families in which the spouses of alcoholic partners complained of more anxiety, depression and physical symptoms. Cohesion was lower in families in which the spouses complained of more anxiety and expressiveness was lower in families in which they complained of more depression. Spouses who used active cognitive coping strategies experienced more arguments and less cohesion in their families. Cohesion was higher when partners reported more positive and fewer negative life events or stressors. The number of negative events was highly related to family arguments. The perception of pressures at work among the spouses of alcoholics was related to more family environment and lower family expressiveness.		

Study	**Research quest**	**Participants & methods**	**Results**	**Other findings**	**Comment**
42. Ouellette, E., Rosett, H., Rosman, N., & Weiner, L. (1977) 'Adverse effects on offspring of maternal alcohol abuse during pregnancy' *New England Journal of Medicine*, 297(10): 528-530 Design: Longitudinal study Rating: Moderate	To evaluate the risk of abnormalities in offspring of heavy drinkers (during pregnancy).	Participants: N=633, 92% of 685 eligible women who registered for prenatal care at Boston City hospital from May 1974. Method: Women consenting to participate were interviewed with a structured interview questionnaire when registering for prenatal care and again after delivery. Measures include: 1. Nutritional status (which was analysed according to recommended dietary allowances of the National Research Council). 2. Present and past alcohol (beverage quantity and frequency measures), tobacco, and drug use. 3. Two-three days after birth, a paediatric neurologist administered detailed paediatric, neurologic and development examinations (including assessed gestational age, length, weight and head circumference, congenital anomalies, and infant's functional state was evaluated (jitteriness, sucking response and tone)).	Results: Mother comparisons: Nutritional status did not differ significantly across the three groups. Heavy drinking was associated with heavy smoking. Child comparisons: No difference was found across drinking groups for Apgar scores or frequency of acquired medical illness. The percentage of newborns considered abnormal at birth was significantly higher in Group 3 (71%) vs. Group 1 (35%) and Group 2 (45%). Hypotonia was seen more frequently in Group 3 (17%) vs. 12% and 9% in Groups 1 and 2 respectively. Jitteriness was three times as frequent in Group 3 infants (29% vs. 10% and 11% in Groups 1 and 2 respectively). Sucking well was decreased in 12% of infants in Group 3 vs. 6% and 2% in Groups 1 and 2 respectively. Prematurity rose from 5% of		

Study	Research quest	Participants & methods	Results	Other findings	Comment
		Women who drank less than once per month were classified as abstinent or rare drinkers (Group1, N=326); heavy drinkers drank five or more drinks on an occasion and had a consistent daily average of more than the 45ml of absolute alcohol (Group 3, N=58); and the others (moderate drinkers) were assigned to Group 2 (N=249). Of the N=322 babies born to the cohort, N=152 were in Group1, N=128 were in Group 2, and N=42 were in Group 3.	births in Group 1 and 3% in Group 2 vs. 17% in Group 3. An increase in infants small for gestation age was noted with increased alcohol intake (8% and 7% in Groups 1 and 2 vs. 27% in Group 3). Birth length and weight were less in offspring of heavy drinkers. Smaller head circumferences were more frequent among offspring of heavy drinkers. Congenital anomalies were higher in infants in Group 3 (32%) vs. 9% and 14% in Groups 1 and 2 respectively. Minor anomalies rose from 5% in Group 1 and 12% in Group 2 to 15% in Group 3. Major anomalies rose from 3% in Group 1 and 2% in Group 2 to 17% in Group 3. Multiple congenital anomalies occurred in 3% and 5% of infants in Groups 1 and 2 and 20% in Group 3.		

Study	**Research quest**	**Participants & methods**	**Results**	**Other findings**	**Comment**
43. Tarter, R., Jacob, T., & Bremer, D. (1989) 'Cognitive status of sons of alcoholic men' *Alcoholism: Clinical and Experimental Research*, 13(2):232-235 Design: Cross-sectional/case-control study Rating: Weak	To evaluate the cognitive status of male children of community dwelling alcoholic men.	Participants: Alcoholic (N=33), depressed (N=29) and normal (N=30) men were recruited through newspaper ads. Following a telephone or home interview the men who qualified for a Research Diagnostic Criterion (RDC) diagnosis of alcoholism or depression or who presented no indication of a psychiatric disorder, had their oldest son scheduled for neuropsychological testing. The men were administered the Schedule for Affective Disorders and Schizophrenia (SADS) and the Michigan Alcoholism Screening test to diagnose alcoholism or depression. None of the men in this study had antisocial personality disorder. All men were married and currently living with spouses. The women were also evaluated with the SADS to determine whether they met a RDC psychiatric disturbance; only families in which the wife did not have a current diagnosis of alcoholism or psychosis were accepted in this study. The male offspring were serially recruited and individually tested. None of the boys had a history of neurological injury or disease, mental retardation or a chronic medical illness that could potentially disrupt neurological integrity. Measures: Demographic: age, grade level, IQ and SES. Test instruments: The test battery encompassed the range of cognitive processes deemed essential for a comprehensive	Analysis: One-way analyses of covariance was used to test for group differences. The offspring of alcoholic fathers obtained a lower test age score on the Proteus Mazes, Stroop words interference time and made more errors on the Matching Familiar Figures Test than the other groups (depressed and normal). They also performed less well on the Symbol Digit Modalities Test and on the Static Ataxia tests.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
		neuropsychological evaluation. Intelligence, perceptual efficiency, language, memory, psychomotor skill, attention, and abstracting ability were assessed in each individual. i) Porteus Mazes test to measure planning and visumotor capacity. ii) Matching Familiar Figures test to measure impulsivity. iii) Arithmetic test to measure mental arithmetic. iv) Stroop test to measure perceptual speed. v) Trail-making test of visuospatial sequencing ability. vi) Tactual Performance test to measure constructional praxis ability. vii) Symbol Digit Modalities test to measure visual scanning. viii) Grooved pegboard to measure psychomotor efficiency. ix) Detroit Tests of Learning Aptitude. x) Category test to measure abstracting ability. xi) Static Ataxia.			

Study	**Research quest**	**Participants & methods**	**Results**	**Other findings**	**Comment**
44. Russell, M., Czarnecki, D.M., Cowan, R., McPherson, E., & Mudar, P.J. (1991) 'Measures of maternal alcohol use as predictors of development in early childhood' *Alcoholism: Clinical and Experimental Research*, 15(6):991-1000 Design: Matched case-control study Rating: Weak	The present study was based on the hypotheses that: 1) Heavy maternal alcohol consumption prior to the recognition of pregnancy and the indications of problem drinking are associated with prenatal exposure to alcohol. 2) Prenatal alcohol exposure, as measured by Prior to Pregnancy Absolute Alcohol per day (PPAA) and Indications of Problem Drinking (IPD), will increase the incidence of minor physical anomalies and/or alter development such that growth, general intelligence, and specific cognitive skills will be adversely affected. 3) These effects will not be readily attributed to other potentially confounding factors such as poor postnatal health, postnatal environmental deficiencies, and familial/hereditary influences.	Participants: In 1978 and 1979 a systematic sample of obstetric patients receiving prenatal care at five sites in Buffalo, New York, participated in a Women's Health Survey. N=547 participants completed a self-administered questionnaire on: patterns of alcohol use prior to pregnancy, smoking, reproductive history, menstrual problems, and socio-demographic characteristics. Pregnancy outcomes assessed at birth were analysed with respect to prenatal alcohol exposure among 490 live births. The present study was based on a 6-year follow-up of 313 children. This group included all children born to abstainers, heavy drinkers (PPAA>1), or problem drinkers (IPD>1), plus a sample of light/moderate drinkers (0<PPAA<1) who were matched with heavy and problem drinkers on age, race, education and child's sex. All investigators (except the project director) were blind to the alcohol exposure data. Response rate was 59% (=186/313), so here N=186. Measures: Alcohol measures: Alcohol intake (Prior to Pregnancy Absolute Alcohol in ounces per day, PPAA) – a quantity and frequency questionnaire for wine, beer and liquor was administered to the women and PPAA was estimated. Light/moderate drinking was defined as 0<PPAA<1; heavy drinking was defined as 1<-PPAA<3.5; and PPAA>3.5 was considered very heavy drinking. Indications of Problem Drinking	PPAA was associated with significant positive linear trends in the number of facial features associated with FAS and the proportion of children diagnosed as having probable/possible FAE. Having >1 IPD was associated with significantly more FAS facial features. The mean number of FAS facial features was approximately twice as high among children born very heavy drinkers or women with >1 IPD as it was among women drinking less or having fewer IPDs. The proportion of children diagnosed as having probable, possible FAE twice as high among children of heavy drinkers as it was of children of abstainers or light/moderate drinkers, and approximately four times higher among very heavy drinkers. Significantly negative linear trends in height and height circumference were also related to PPAA. Compared with children of abstainers on average children of heavy drinkers were 3.9cm shorter and had a head circumference 1.3cm smaller. Verbal IQ scores and Token test scores were significantly lower among children born to women with >1 IPD than among women with <=1 IPD.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
		(IPD): questions assessing indications of problems drinking (adapted from established alcoholism screening measures and tested) were administered to women. There were eight questions used in this study and their answers were scored and added to obtain an overall IPD score. Scores over 1 were interpreted as indicating probable problem drinking. Measures of child development were selected to assess postnatal growth, dysmorphology, and cognitive development. Growth and dysmorphology were measured by a paediatric dysmorphologist who measured weight, height and head circumference and the presence of minor physical anomalies and made a clinical assessment of probable/possible FAE. Cognitive development-intellectual development was evaluated on three dimensions: General Intelligence (Wechsler Preschool and Primary Scale of Intelligence (WPPSI)); Receptive Language Function (Token Test for children); and Visual-Motor Integration (Beery-Buktenica Development Test of Visual Motor Integration (VMI)). Covariates: A number of potential confounders were assessed. These included: two maternal poverty measures; marital status; race; child's father was present in the home; maternal IQ; SES; age; number of cigarettes smoked per day; frequency of taking psychoactive drugs in month prior to pregnancy; and weight gain during pregnancy (grams per week). Paternal drinking was assessed at the 6-year follow-up time. Three dimension of the postnatal environment were assessed. These were: child-rearing environment (Home Screening Questionnaire (HSQ), family emotional atmosphere (family strengths (pride and accord); family satisfactions and the Family Adaptability and Cohesion Evaluation Scale (FACES II); and family stability (assessed in terms of life events). In addition, the covariates of child's gestational age, sex, and age at testing were also taken into account. Principal component analysis was used to reduce the number of covariates into a manageable number. Eight readily interpretable components explained 71% of the variability in the 22 covariate measures. Analysis: The effects of Prior to Pregnancy Absolute Alcohol per day (PPAA) and indications of problem drinking (IPD) on child development were investigated using analysis of covariance.			

Study	Research quest	Participants & methods	Results	Other findings	Comment
45. Jennison, K.M., & Johnson, K.A. (1998) 'Alcohol dependence in adult children of alcoholics: Longitudinal evidence of early risk' *Journal of Drug Education*, 28(1):19-37 Design: Longitudinal study Rating: Weak	To investigate the impacts of familial alcoholism and selective social factors on the incidence of alcohol dependence using longitudinal data from a national sample of young adults.	Participants: The data sources for this study were the 1984, 1988 and 1989 waves of the National Longitudinal Survey of Youth (NLSY) which was representative of the non-institutionalised population of the USA aged 14 to 22 in 1979 (N=10,329). Method: The survey included questions on alcohol and substance use and familial alcoholism. The data were divided into groups for two models – the conventional model and the lineal generational model. The conventional model comprised four mutually exclusive groupings: 1) those with alcoholism in first-degree family members only, or parents and siblings; 2) those with alcoholic second-degree family members only, or other blood relatives; 3) respondents who reported having first- and second-degree alcoholic relatives; and 4) family-history negative. The linear generational model consists of all alcoholic relatives specified in the conventional model but distinguishes between maternal and paternal lineality. Measures: i) Alcohol consumption pattern index (ACP) (light, binge and heavy drinking). ii) Age of drinking and smoking onset. iii) Smoking status and heavy smoking. iv) Problematic drinking consequences (alcohol-related aggressiveness/ belligerence, impaired control, alcohol-related job problems. v) Educational attainment level, race/ethnicity, marital status, employment status, income (SES). vi) Alcohol dependence (DSM-III-R diagnostic criteria for dependency/abuse. Of the 6,647 current drinkers in 1989, 15% (N=1,021) were alcohol-dependent based on DSM-III-R criteria. Analysis: Logistic regression models were used to estimate relative risk of alcohol dependence among respondents in each group.	Results: A positive family history of alcoholism rather than a negative family history was directly associated with alcohol dependence. The adjusted odds of impairment are twice as likely for ACAs with first-degree alcoholic relatives or both first- and second-degree relatives combined. From the univariate lineal generation model, the strongest influence on developmental alcoholism in ACAs comes from alcoholic fathers (OR=2.20) and siblings (brother OR=1.79; sister OR=4.19). Examining contributions from each side, on the father's side the father's sister (OR=3.92) and the maternal or paternal uncles are most significant in the data, followed by mother's father (OR=2.13). Multivariate predictors: Having an alcoholic father increases the risk for males, or females (alcoholic sister), of becoming alcohol dependent; it clearly lends support to the idea that alcoholism tends to run in families. The significant effects in evidence for collateral alcoholic relatives, specially the brother and sister of the father, confirm that the more alcoholic relatives a person has, and the more closely he is related to them on the father's side of the family the greater the risk for alcoholism continuity. Heavy drinking and the age at which youth begin drinking at least weekly (<=15) are also covariant direct predictors of dependence in later adulthood. In the lineal multivariate model the strongest predictor is the two-way interaction of age of smoking onset with impaired drinking control. The relative risk (OR=2.24) of alcohol dependence in the general population is significantly increased among sons of alcoholics who began smoking in adolescence, who experienced some degree of tolerance for alcohol, and who demonstrated an inability to manage drinking at earlier stages of young adulthood. A final lineal model early predictor of alcohol dependence among ACAs in adult life is the two-way interaction effect (OR=2.06) of heavy beer consumption with alcohol-related job problems. The odds are about twice as great that alcohol dependence involving familial alcoholism and alcohol-related work problems will be linked with excessive beer drinking than with other alcoholic beverages.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
46. Reich, W., Earls, F., & Powell, J. (1988) 'A comparison of the home and social environments of children of alcoholic and non-alcoholic parents' *British Journal of Addiction*, 83:831-839 Design: Case-control study Rating: Weak	Compares family and social environmental variables of children of alcoholic and non-alcoholic parents.	Participants: 54 in total aged 6 to 17 years: 32 had one or more parents as alcoholics (16 males and 16 females) and 22 had neither parents as alcoholics (12 males 10 females). Method: Parents of these children were ascertained originally as part of an ongoing family genetics study of alcoholism at Washington University in St Louis. Approximately 5 years later the parents were recontacted and asked if their children could be interviewed. All children were interviewed using structured interviews; the DICA diagnostic interview for children and adolescents (which makes DSM III diagnoses) and the home environments interview for children were used. Children were also given the Peabody Pictorial Vocabulary Test (PPVT), Coppersmith Self Esteem Inventory (SEI), Dimensions of Temperament questionnaire (DOTS) and the Wide Range Achievement Test (WRAT). One parent, usually the mother, was interviewed using the parents' version of the interview and was also asked about themselves using sections from the HELPER, a structured psychiatric interview that obtained the alcoholic status of parent as well as any other psychiatric diagnoses. Parents also filled out the Child Behaviour Checklist and the DOTS. Parents were asked to give permission to access grades, IQ tests or achievement tests. All of the parents met Guze/Feighner criteria for severe alcoholism. Questions were asked about home and social environment. Parallel questions and wording were used wherever possible. Families were similar in terms of income and how long they had been together.	Significant differences were found between children of alcoholics and those who were not. In alcoholic homes: a) the children view their parents as poorer role models; b) more parent-child conflict; c) more marital conflict; and d) more physical and emotional abuse. Children with strong family histories of alcoholism are themselves at risk for alcoholism. Those with behaviour disturbances may be at even greater risk. Environmental factors operate as an additive component placing children at greater risk for behaviour disorders and/or alcoholism.	The findings are consistent with other reports in the literature. Results from this study need to be interpreted with some caution due to small sample size.	

Study	Research quest	Participants & methods	Results	Other findings	Comment
47. Lynskey, M, Fergusson, D.M., & Horwood, L (1994) 'The effect of parental alcohol problems on rates of adolescent psychiatric disorders' *Addiction*, 89:1277-1286 Design: Longitudinal study Rating: Moderate	a) To estimate the associations between exposure to parental alcohol problems during childhood and risks of psychiatric disorders including substance abuse/ dependence, conduct/ operational, attention deficit, mood and anxiety disorders. b) To adjust the associations between parental alcohol problems and adolescent psychiatric disorders for a series of confounding factors relating to childhood family social interaction. c) To examine the extent to which associations between parental alcohol problems and adolescent psychiatric outcomes varied with the young person's gender, to determine if males were more susceptible than females.	Data were gathered as part of a birth cohort study in Christchurch, New Zealand with 1,265 participants. Seventy-six percent participated in this study (previous analysis suggests attrition not likely to affect results). Data were gathered using parent interviews, interviews with the children and data provided by school teachers and information from official records including medical and Police records. Measures: Parental history of problems with alcohol and alcoholism; measures of adolescent psychopathology (using instruments: revised behaviour problem checklist, the diagnostic interview schedule for	Higher prevalence of psychiatric disorder among children whose parents reported alcohol problems or alcoholism. Relationship between alcohol problems in parents and adolescent outcomes: worse outcomes for those of alcoholic parent followed by those who reported alcohol problems; better outcomes for those of non-alcoholic parent.	Parental reports of alcohol use – and problems – concerned that there may be self-report – errors. Likely to be under-reporting, therefore results from this paper may underestimate the true strength of relationships found.	

Study	Research quest	Participants & methods	Results	Other findings	Comment
		children and the self-report early delinquency scale) using child and parental report; confounding factors (selected for inclusion on the basis they were likely to be causally antecedent to parent alcohol problems and child psychopathology): family social background and socio-economic status, maternal alcohol and tobacco use during pregnancy, parental history of psychiatric illness and criminal offending, gestational age and birth weight.			

Study	Research quest	Participants & methods	Results	Other findings	Comment
48. Reich, W., Earles, F.], Frankel, O., & Shayka, J.J. (1993) 'Psychopathology in children of alcoholics' *Journal of the American Academy of Child and Adolescent Psychiatry*, 32:995-1005 Design: Cross-sectional study Rating: Weak	To assess psychopathology in 125 and 158 children who are offspring of alcoholic and control parents.	Participants: Parents of children in this study were ascertained originally as part of an ongoing family genetics study of alcoholism at Washington University in St Louis. Parents and children were interviewed using structured interviews. Total sample size is 226, of which 68 children were omitted; sample size N= 158 (note: some of these remaining cases had missing data so sometimes N=125). Parents were interviewed about themselves and their children. Parents were given the Home Environment and Lifetime Psychiatric Record (HELPER), an interview that makes diagnoses on Feighner criteria. Final diagnoses were confirmed by family history interviews, hospital records and HELPER interview information. They were also given the parent version of the Child Behaviour Checklist. Children were interviewed using the DSM III and the Home Environment Interview for Children. They were given the Peabody Picture Vocabulary Test (PVTT), the Wide Range Achievement Test for reading, spelling and arithmetic and the Coopersmith Self-Esteem Inventory. Teacher reports were obtained.	Analysis conducted by children who had: 1) two; 2) one; and 3) none alcoholic parent(s). Clear relationship between having oppositional or conduct disorder and being the child of an alcoholic parent. Significantly higher prevalence of overanxious disorder among children in two-alcoholic parent families. Significant difference between cases and controls found for attention deficit disorder (ADD). Children of alcoholic(s) were more likely to have ADD in the clinical report. No differences between cases and controls found for ADD otherwise. Also no differences for depression, obsessive-compulsive disorders, anorexia and bulimia.	Difference in the way the child, parent and combined diagnoses (as opposed to the clinical diagnosis) may explain findings relating to ADD.	

Study	Research quest	Participants & methods	Results	Other findings	Comment
49. Barnow, S., Schuckit, M., Smith, T.L., Preuss, U., & Danko, G. (2002) 'The relationship between the family density of alcoholism and externalising symptoms among 146 children' *Alcohol & Alcoholism*, 37 (4):383-387 Design: Longitudinal study Rating: Moderate	To evaluate the prevalence of externalising symptoms, such as attention problems, aggression and delinquency in the offspring of alcoholics.	146 children aged 7 to 18 years from an ongoing prospective study. The original participants were 453 sons of alcoholics who had volunteered for participation in an evaluation of drinking. At the time the fathers were enrolled they were evaluated with an interview similar to the Structural Clinical Interview for the DSM III -R and intensities to response to alcohol were obtained. At the 15-year follow-up (98% of original sample followed up) data from spouses and all offspring were also gathered. Measures: Externalising type behaviour was assessed by using the CBCL and the broadband scale of behavioural problems and a symptom count was obtained using SSAGA.	For analysis the children were divided into three groups: a) no; b) one or two; and c) three or more first or parent or grandparents with an alcohol use disorder. The group of children who had three or more relatives with an alcohol use disorder had significantly higher values for the Child Behaviour Checklist scales of attention and delinquent behavioural problems.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
50. MacPherson, P.S., Stewart, S.H., & McWilliams, L.A. (2001) 'Parental problem drinking and anxiety disorder symptoms in adult offspring examining the mediating role of anxiety sensitivity components' *Addictive Behaviours*, 26:917-934 Design: Cross-sectional Rating: Weak	To examine the role of exposure to distressing parental problem drinking behaviours, over and above the role of parental alcoholism, in the development of various anxiety sensitive (AS) components (psychological, physical and social concerns) in the offspring. To examine the possible mediating role of AS components in explaining relationships between parental drinking problems and anxiety-related symptoms in the adult offspring.	A sample of 213 university students provided a retrospective report of both distress related to parental drinking and parental alcoholism. Measures: Demographic questionnaire; Panic Attack Questionnaire – Revised (PAQ-R); State Anxiety Inventory Trait subscale (STAI-T); Anxiety Sensitivity Index (ASI); Children of Alcoholics Screening Test (CAST); Short Michigan Alcoholism Screening Test (SMAST) (F-SMAST and M-SMAST – Mother and Father SMAST).	Childhood exposure to distressing parental problem drinking behaviour is associated with the development of anxiety sensitivity in the offspring. Anxiety sensitive psychological concerns were found to be a modest mediator in the relationship between parental problem drinking behaviour and the adult child's general anxiety levels.	Study did not include measures of undercontrolled behaviour which leaves open the possibility that exposure to undercontrolled behaviour from any source would cause AS in the child. Study relied on retrospective self-reports of childhood experiences which may have introduced bias. Study design and analysis technique precludes attribution of causality.	

Study	Research quest	Participants & methods	Results	Other findings	Comment
51. Chatterji, P., & Markowitz, S. (2000) *The impact of maternal alcohol and illicit drug use on children's behaviour problems: Evidence from the children of the national longitudinal survey of youth* National Bureau of Economic Research Working Paper Series; Working Paper 7692. Cambridge, MA, May 2000, p. 33 Design: Longitudinal study Rating: Weak	The objective of this study is to use data from the children of the National Longitudinal Survey of Youth to test for evidence of a causal relationship between maternal alcohol use, marijuana use and cocaine use, and children's early mental health problems, as measured by an index of behaviour problems.	Participants: The data used in this study come from Children of the National Longitudinal Survey of Youth (CoNLSY). The National Longitudinal Survey of Youth (NLSY79) is an annual, national survey that was initiated in 1979 with a sample of 12,686 young people who, at the time, were aged 14–21. This analysis utilises information on children's behaviour problems index score, child characteristics, and maternal characteristics from 1988, 1992 and 1994 CoNLSY surveys. Children who were between 4-14 years old and who have valid data for behaviour problems scores and maternal substance use measures in at least one survey year (1988, 1992, and 1994) are included in the main analysis sample. The final sample size is N=10,579 which includes data for 6,194 children. For the family-specific fixed effects models, N=2,498 and for the child-specific fixed effects models, N=7,546. Measures: Behaviour Problems Index The Behaviour Problems Index (BPI) is based on the Achenbach Behaviour Problems Checklist and other child behaviour scales and measures the frequency, range and type of childhood behaviour problems for children using responses from mothers. The BPI consists of 28 items pertaining to antisocial behaviour, anxiousness/depression, headstrongness, hyperactivity, immaturity, dependency and peer conflict/social withdrawal. Maternal Substance Use measures and Other covariates The four main substance use measures used in this analysis are: 1) number of days alcohol was consumed in the past month; 2) a dichotomous indicator for any binge drinking in the past month; 3) a dichotomous indicator for any marijuana use in the past year; and 4) a dichotomous indicator for any cocaine use in the past year. Models also include variables	Analysis: Regression analysis was used to predict behavioural problem scores. Results: The OLS results strongly suggest that maternal substance use is positively associated with children's behaviour problems after controlling for a range of other factors. The magnitude of this impact is fairly modest for alcohol. An incremental increase in the number of days the mother drank in the past month is associated with less than 1% increase in the mean BPI score. Maternal binge drinking is associated with a 4% increase in the mean BPI score. However, maternal marijuana and cocaine use are associated with 12% and 10% increase in mean BPI scores. Here only marijuana is statistically significant when alcohol and cocaine use are both in the model. In the child-specific fixed effects model the magnitude of impacts is less than 1% for maternal drinking and 7% for maternal marijuana use. Cocaine use and binge drinking are statistically insignificant. The family-specific fixed effects model the number of drinks consumed in the past month has a small but positive statistically significant impact on behaviour problems. Marijuana use and cocaine use are positively associated with BPI and are statistically significant. Marijuana use is associated with an 8% increase in BPI scores, while cocaine use is associated with a 19% increase in BPI scores.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
		that control for the child's endowment of mental health at birth (low birth weight) and a number of other exogenous, child-specific (sex, race, age) and mother-specific characteristics that have been linked to behaviour problems.			

Study	Research quest	Participants & methods	Results	Other findings	Comment
52. Puttler, L.I., Zucker, R.A., Fitzgerald, H., & Bingham, C.R. (1998) 'Behavioral outcomes among children of alcoholics during the early and middle childhood years: Familial subtype variations' *Alcoholism: Clinical and Experimental Research*, 22(9):1962-1972 Design: Longitudinal study Rating: Moderate	The present study is one of a series that explores the theory that as risk at the parental and familial level aggregates, a variety of pathways produce aggregation of child risk. This in turn leads to the eventual emergence of the adult outcome of alcohol-related difficulties. The goal of this research is to detail early developmental pattern variations that might lead to future behavioural difficulty.	Participants: A subset of N=212 families drawn from the larger Michigan State University-University of Michigan (MSU-UM) longitudinal study (a prospective, high-risk study of the development of alcohol abuse/dependence, other drug problems, and related life difficulties). The MSU-UM consists of a population-based sample of alcoholic men, their partners and their sons (initially aged 3–5 years) and their daughters (initially aged 3–11 years). The sample also includes a contrast group of non-substance-abusing families and their like-aged male and female children. Of the 212 participants, 138 families were alcoholic (N=44 antisocial alcoholics (AALs) and N=94 non-antisocial alcoholics (NAALs)) and 74 families were non-alcohol controls. Data were collected by trained project staff who were blinded to family diagnostic status. The measures used in the present study are a subset of these instruments pertaining to issues of child problem behaviour, cognitive functioning and academic achievement. Measures: Parent measures: 1) Family demographic information came from a questionnaire assessing education, occupation, family income, parent's occupation, and marital history. SES was calculated using the Duncan TSEI2 Socioeconomic Index. 2) Parent alcoholism: All parents completed the Short Michigan Alcohol Screening Test (MAST), the Diagnostic Interviews Schedule Version III (DIS), and the Drinking and Drug History Questionnaire. 3) Antisocial behaviour: The Antisocial Behaviour Checklist (ABS) was used to assess antisocial behaviour. 4) Alcoholic subtype: For children from alcoholic families to be identified as offspring of AALs or NAALs based on their father's classification. AALs' fathers scored 10 or higher on both childhood and adulthood domains of the ASB. 5) Lifetime alcohol problem score: To determine a parent's degree of alcohol-related difficulty over the life course, the Lifetime Alcohol Problem Score (LAPS) was used. Child measures: 1) Child's current behaviour: Each parent completed the Achenbach Child Behaviour Checklist-Parent Version	Children from AAL families had greater problems than children from NAAL and control families. Children from NAAL families also had greater problems than children from control families. Boys had greater problems than girls. Children from AAL families had more externalising behaviour problems (EBPs) than did children from NAAL and control families. Children from AAL families had greater internalising behaviour problems (IBPs) than children from control families. Older children showed greater IBPs than younger children. Boys had greater IBPs and EBPs than girls. Younger children from AAL and control families had higher externalising behaviour scores than older children in these families. Older children from NAAL families had higher externalising behaviour scores than younger children from NAAL families. Children from AAL and NAAL families had lower intellectual functioning than children from control families. COAs had lower scores than children from control families in reading, spelling and arithmetic. LAPS, adult ASB and child ASB made unique contributions to the variance for CBCL total behaviour problems and externalising behaviour, only (mother's). Child ASB made unique contributions to the variance for CBCL internalising behaviour.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
		(CBCL). 2) Intellectual functioning: Current general intellectual functioning for children aged 6 or older was measured with the Wechsler Intelligence Test for Children-Revised (WISC-R). For children below the age of 6, general intellectual functioning was assessed with the third of the Stanford-Binet Intelligence Scale. 3) Academic achievement was assessed in only children aged 6 years or older using the Wide Range Achievement Test-Revised (WRAT-R) to assess reading, spelling and arithmetic. Analysis: Multivariate analysis of variance was used to compare groups.			

Study	Research quest	Participants & methods	Results	Other findings	Comment
53. Obot, I.S., & Anthony, J.C. (2004) 'Mental health problems in adolescent children of alcohol dependent parents: Epidemiologic research with a nationally representative sample' *Journal of Child & Adolescent Substance Abuse*, 13(4):83-96 Design: Cross-sectional study Rating: Moderate	Examines a suspected causal association between parental alcohol problems and the mental health of their adolescent children.	Participants: A sub-sample of N=1,729 parent-child pairs from the National Household Survey on Drug Abuse (NHSDA) collected in 1995 and 1996 from a nationally representative population aged 12 and over. The NHSDA had response rates of 80.6% and 78.6%, in 1995 and 1996, respectively. Inclusion: Minimum age of parents 27 years. Child aged 12–17. Measures. Parental alcohol problems: Using NHSDA items adapted from the diagnostic interview schedule for DSM alcohol dependence. Mental health problems: Behavioural and mental health problems were assessed by means of the NHSDA version of Achenbach's Youth Self-Report (YSR) for assessing psychological and social functioning of adolescents. Socio-demographic characteristics: Age of child, sex of child, sex of parent, race/ethnicity and biological relationship to the parent. Analysis: ANOVA and MANCOVA were used.	Children of parents with active alcoholic problems had higher scores than other children on aggressive problems, anxious-depressed, attention problems, delinquent behaviour and social problems. Independent excesses of delinquency among children of alcohol-dependent parents. Multiple logistic regression confirmed the association between parental alcohol problems and excess delinquency scores among adolescent children. Adolescents with higher delinquency scores were more likely to have had parents with alcohol problems than those with lower scores.	Levels of consumption commonly called social drinking are significantly related to decreased birth weight in the offspring as well as to a variety of behavioural deficits of unknown predictability. We believe the primary time for prevention is before the fact. We feel that any woman who is alcoholic and of child-rearing age should stop drinking prior to conception and refrain from drinking during pregnancy and during the nursing period.	

Study	Research quest	Participants & methods	Results	Other findings	Comment
54. Young, N.K. (1997) 'Effects of alcohol and other drugs on children' *Journal of Psychoactive Drugs*, 29(1):23-42 Design: Literature review This is a review article, not appropriate to rate.	The impacts of psychoactive substances – legal and illegal – on children can be assessed along three primary paths: in utero, environmental (both family and community influences), and their own personal consumption.				

Study	Research quest	Participants & methods	Results	Other findings	Comment
55. Hayes, L., Smart, D., Toumbourou, J. & Sanson, A. (2004) *Parenting influences on adolescent alcohol use* Australian Institute of Family Studies; Research report no.10, 2004 Design: Literature review This is a review article, not appropriate to rate.	Undertake a multidisciplinary review of parenting influences on adolescent alcohol use in Australia.	Method: Relevant research concerning parenting influences on adolescent alcohol use was identified by searching the biomedical and social sciences databases for primary research material. A total of 18 research databases for publications from 1990 through to 2004, with key articles obtained primarily from PsychINFO, MEDLINE, ERIC, and The Cochrane Library. The search items were 'parenting or family', plus 'adolescent or youth', plus 'alcohol' anywhere in the title or abstract. No language restrictions were employed. Studies were eligible for consideration if: a) the focus of the study was adolescent alcohol use or substance use (provided alcohol use was measured separately); and b) there was at least one parenting variable measured. Studies were excluded if the parenting or adolescent measures were insufficiently described, or alcohol use was only a minor variable in the study. Unpublished literature and internet resources were included if they met the above criteria. Overall, 26 cross-sectional and 30 longitudinal studies were included in the review. A small number of qualitative Australian studies were found and these	The evidence suggests that delaying the onset of drinking reduces long-term consumption levels in adulthood. Parental monitoring: Adolescents who are poorly monitored begin alcohol consumption at an earlier age, tend to drink more, and are more likely to develop problematic drinking problems. For many parents, knowing the 'right age' to permit their adolescent to consume alcohol, or indeed if they should permit alcohol consumption at all, is a critical question that they feel ill equipped to answer. Parental behaviour management: Family standards and rules, rewards for good behaviour, and well-developed negotiation skills were associated with lower initiation of alcohol use in early adolescence, and lower rates of alcohol abuse and dependence in early adulthood. Harsh discipline and high conflict were associated with a higher rate of alcohol use. When parents were openly permissive towards adolescent alcohol use, adolescents tended to drink more. Relationship quality: Warm and supportive parent-adolescent relationships were associated with lower levels of adolescent alcohol use, as well as lower rates of problematic use and misuse. Parental norms: Parental norms, attitudes, and beliefs with regard to adolescent alcohol use have an important influence on adolescent alcohol consumption. When parents show disapproval, their adolescents are less likely to drink, and conversely, when parents are tolerant or permissive their adolescents are likely to drink more. Many parents believe 17 years is the appropriate age for adolescents to begin consuming alcohol in the home while many adolescents believe this should occur earlier at approximately 16. Parental, family and broader environmental influences: Biological links between parental alcohol dependence and adolescent alcohol use were evident. Adolescents from intact families were found to less often engage in heavy alcohol use, while adolescents from sole-parent families were more often involved in heavy drinking. In addition, social laws and norms were shown to exert a considerable influence on adolescent alcohol consumption, and parental attitudes toward adolescent alcohol use. Parenting and peer influences compared: The effect of peers was shown to mediate the influence of parenting on adolescents' alcohol use. Peer effects became particularly powerful when parent-adolescent relationships are of poorer		

Study	Research quest	Participants & methods	Results	Other findings	Comment
			quality. The influence of peers is thought to occur through peer modelling, peer pressure, or association with alcohol-using peers. However, direct connections between parental monitoring and adolescent alcohol use remained after peer influences were taken into account. Summary: Parental monitoring, parental norms for adolescent use and parental behaviour management skills all have direct links to adolescent alcohol use. Parent-adolescent relationship quality has an overall effect on these parenting behaviours as well as a direct connection to alcohol use. The parental characteristics depicted as having an indirect effect include parental alcohol use or abuse, as well as family factors, and broader cultural norms regarding alcohol use.		

Study	**Research quest**	**Participants & methods**	**Results**	**Other findings**	**Comment**
56. Graham, K., Leonard, K., Room, R., Wild, T., Pihl, R.O., Bois, C., & Single, E. (1998) 'Current directions in research on understanding and preventing intoxicated aggression' *Addiction*, 93(5):659-676 Design: Literature review This is a review article, not appropriate to rate.					

Study	**Research quest**	**Participants & methods**	**Results**	**Other findings**	**Comment**
57. Rossow, I., & Hauge, R. (2004) 'Who pays for the drinking? Characteristics of the extent and distribution of social harms from others' drinking' *Addiction*, 99:1094-1102 This is a methodological paper so was not appropriate to rate.					

Study	**Research quest**	**Participants & methods**	**Results**	**Other findings**	**Comment**
58. Moos, R., & Moos, B. (1981) 'A typology of family social environments' *Family Process*, 15:357-371 This is a manual so is not appropriate to be rated.					

Study	Research quest	Participants & methods	Results	Other findings	Comment
59. Saggers, S., & Gray, D. (1998) *Dealing with alcohol: Indigenous usage in Australia, New Zealand, and Canada* Cambridge University Press, Cambridge. This is a book so is not appropriate to rate.					

Study	Research quest	Participants & methods	Results	Other findings	Comment
60. McLoyd, V. (1990) 'The impact of economic hardship on black families and children: Psychological distress, parenting, and socioemotional development' *Child Development*, 61:311-346 This study is not appropriate to be rated.					

Study	Research quest	Participants & methods	Results	Other findings	Comment
61. Dodge, K., Pettit, G., & Bates, J.E. (1994) 'Socialization mediators of the relation between socioeconomic status and child conduct problems' *Child Development*, 65:649-665 This study is not appropriate to be rated.					

Study	Research quest	Participants & methods	Results	Other findings	Comment
62. de Marsh, J., & Kumpfer, K. (1986) 'Family-oriented interventions for the prevention of chemical dependency in children and adolescents' *In Childhood and chemical abuse: Prevention and intervention.* Edited by S. Griswold-Ezekoye, K. Kumpfer, & W. Bukoski, The Haworth Press, New York Design: Review article This is a review article, not appropriate to rate.	This article will: a) briefly trace the historical development of family-oriented interventions in the prevention field; b) present general evidence demonstrating the value of including families in prevention activities; c) describe several of the various family-oriented prevention programmes currently available (see Table 1); d) present outcome effectiveness data when available; and e) present several suggestions regarding the development and implementation of family-oriented prevention interventions.		Theoretically-based models and clinically-based reports argue for the inclusion of family units in prevention activities designed to assist young, high-risk populations from developing substance-abusing behaviours. There are, however, few outcome evaluation studies to support these arguments. Those that do exist typically have small numbers, lack the rigours of experimentally designed and controlled studies, and have yet to provide longitudinal data documenting the lasting effectiveness of family-oriented prevention programmes. Family-oriented prevention programmes appear to hold great potential in decreasing the high rates of adolescent substance abuse. When targeting early childhood for prevention efforts, the importance of enlisting family's help in decreasing risk factors	The authors, however, believe the present lack of supporting data is indicative of the current 'state' of prevention research and not a 'trait' of family-oriented prevention programmes, given a) the growing consensus that chemical dependency is a 'family affair', b) the positive outcome effectiveness of family-oriented treatment for psychotherapy in general and substance abuse in particular, c) disappointing outcomes of education and affective or alternative	

Study	Research quest	Participants & methods	Results	Other findings	Comment
			becomes even more apparent since the family is the major socialisation agent for children.	education prevention programmes, and d) the large number of identified substance abuse precursors addressed by these family programmes.	

Study	**Research quest**	**Participants & methods**	**Results**	**Other findings**	**Comment**
63. Kochanska, G., Murray, K., Jacques, T. Koenig, A. & Vandegeest, K. (1996) 'Inhibitory control in young children and its role in emerging internalisation' *Child Development*, 67(2):490-507 Design: Longitudinal study This paper is not appropriate to be rated.	To examine inhibitory control as both a contemporaneous correlate of internalisation and its predictor in a longitudinal sense.	Participants: At time 1, 103 normally developing toddlers (51 girls, 52 boys), aged 26 to 41 months, and their mothers volunteered in response to ads in the community. At time 2, 99 mothers and children (49 girls, 50 boys) returned when children were 43–56 months old. Method: At time 1 data were collected during two 2–3-hour sessions, one at home and one in the university laboratory, both conducted by the same experimenter. At time 2 there was one 3–3.5-hour laboratory session conducted by a new experimenter. She administered all inhibitory control tasks. All sessions were videotaped. Except for a few tasks that were coded live, all behavioural data were coded from videotapes by separate teams of coders. Measures: Inhibitory control measures: 1) Behavioural observations: The Multi-Task Batteries: At time 1, the battery consisted of seven tasks, five administered at home and two in the laboratory. The tasks assessed were: i)–iv) Delaying (snack delay, tongue, home gift, lab gift), v) Slowing down motor activity (turtle-and-rabbit), vi) Suppressing/initiating activity to signal (tower), vii) Lowering voice (whisper). At time 2 the battery included 12 tasks. Five tasks were (snack delay, whisper, tongue, tower, and lab gift) analogous to those at time 1. Additional tasks were delaying (Dinky toys), slowing down motor activity (walk-a-line, telephone poles, circles), suppressing/ initiating activity to signal (bear and dragon, pinball), cognitive reflectivity (KRISP). 2) Maternal ratings: At time 1 and time 2 mothers filled out Rothbart's Children's Behaviour Questionnaire assessing dimensions of child temperament. Internalisation measures: Internalisation of maternal prohibition without surveillance (alone with prohibited toys: time 1 and time 2); internalisation of maternal prohibition without surveillance (alone with a mundane task (internalised cleanup): time 2; internalisation of the experimenter's prohibition (alone with the cheating games (animal game, bird game, dart game): time 2; the reluctance to violate standards of conduct (mischief, scribble, tear, ball, spill, photo): time 2; maternal rating: at both time 1 and time 2, mothers rated their children on a 20-item internalisation scale.			

Study	Research quest	Participants & methods	Results	Other findings	Comment
64. Lindgaard, H. (2005) 'Adult children of alcoholics: Are they different?' *Nordisk Psykologi*, 57(1):107-129 Design: Case-control study Rating: Weak	To identify the general characteristics of adults who have grown up in families with alcohol problems compared to adults from families without alcohol problems.	Participants: N=316 adults were recruited from a number of sources (clients and employees from alcohol treatment centres, participants from 12-step AA recovery groups and university students and employees and students from nursing schools); N=127 adults who had grown up in families where at least one parent had an alcohol problem (ACOA); N=189 came from families where neither parent had an alcohol problem (non-ACOA). Measures: Demographic and background information: Age, gender, educational levels, family size, mental and physical illness among parents and siblings, suicidal behaviours, physical and sexual abuse, stressful events and alcohol and other abusive behaviours in the families. Self-report family Inventory (SFI) – an index of family members' perception of their family's functioning. Crisis Support Scale (CSS) – used to measure the extent to which respondents were receiving informational and emotional support from a variety of sources in their environment. Rosenberg Self-Esteem Scale (RSE) – to measure self-esteem. Brief Symptom Inventory (BSI) – to measure current level of functioning or distress. Analysis: One-way analysis of variance was used to compare groups.	Results: ACOAs reported a greater degree of impairment in their families of origin than did non-ACOAs. Levels of social support were lower or absent in families with an alcoholic parent. ACOAs are characterised by an increased risk of developing psychological and social distress, with symptoms including anxiety, depression, eating disorders, suicidal behaviour, low self-esteem and difficulties with intimacy and dependence on others. There is a higher incidence among ACOAs of neuroticism and introversion. ACOAs are much more prone to develop alcohol problems of their own, and to be involved in a relationship with an alcoholic. ACOAs are more prone to use maladaptive coping strategies and to have unstable defence mechanisms.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
65. Johnson, J.L., & Leff, M. (1999) 'Children of substance abusers: Overview of research findings' *Paediatrics*, 103(5):1085-1099, Supplement, May Design: Literature review This is a review article, not appropriate to rate.	In this review we examine some of the research both on COAs and on children of other substance abusers.	Research on COAs was separated into studies of: 1) the foetal alcohol syndrome (FAS); 2) the transmission of alcoholism (including studies of twins, adoption studies, and gender differences); 3) psychobiologic marker of vulnerability (including temperament variables, neurophysiologic studies, biologic marker studies), psychobiologic marker of vulnerability; and 4) psychosocial characteristics (including studies involving family studies (including family violence), cognition, affect and behaviour, medical problems, and physical health). Research on children of other drug-abusing parents was categorised into family studies/heritability, foetal exposure, and psychosocial risk factors.	A relationship between parental substance abuse and subsequent alcohol problems in their children has been documented extensively. COAs and children of other drug-abusing parents are especially vulnerable to risk for maladaptive behaviour because they have combinations of many risk factors present in their lives. The single most potent risk factor is their parents' substance-abusing behaviour. This single risk factor can place children of substance-abusers at biologic, psychologic and environmental risk. Research supports the belief that COAs are at risk for a variety of problems that may include behavioural, psychologic, cognitive, or neuropsychologic deficits. The vast literature on COAs far outweighs the literature on children of other drug abusers. Nonetheless, research suggests that the children of addicted parents are at greater risk for later dysfunctional behaviours. The overview of the research on children of other drug abusers points towards the need for better longitudinal research in this area.		

Study	Research quest	Participants & methods	Results	Other findings	Comment
66. Streissguth, A. (1977) 'Maternal drinking and the outcome of pregnancy: Implications for child mental health' *American Journal of Orthopsychiatry*, 47(3):422-431, Design: Review article This is a review article, not appropriate to rate	Review of literature and studies on Foetal Alcohol Syndrome (FAS).	FAS was first identified in 1973 in a paper by a team of Seattle investigators who described eight children (whose mothers had been chronic alcoholics and had been drinking heavily during pregnancy) with a similar pattern of growth deficiency, altered morphogenesis, and mental deficiency. It was suggested the exposure to alcohol in utero was the primary cause of their growth deficiency, malformation, and retardation. A second paper described two more cases identified at birth, and labelled the disorder FAS. The identification of a specific pattern of malformation and the labelling of the syndrome was an important step in bringing attention to this tragic and preventable form of mental deficiency. History: Early warnings (of ancient Carthage and later in the 18th century) were not followed up by empirical studies and even in the 1940s and 1950s government reports and books on pregnancy claimed that there were no known ill effects of alcohol to the foetus with the exception of work in 1968 by a French investigator, Lemoine, who examined 100 children of alcoholic mothers who reported the children had retarded development and a characteristic appearing similar to that described later as FAS.	FAS characteristics: Children with FAS are not grossly malformed or grotesque but are very small both in height and weight, and have head circumferences below the third percentile. Children with FAS have a characteristic facies with short palpebral fissures as the most differentiating feature, and often have a flattened nasal bridge and epicanthic folds. A flattening of mid-face, mild abnormalities of the external ear, and a narrow upper lip are other less frequent anomalies. Cardiac malformations occur in 40% of cases. Mental deficiency, ranging from borderline to severe, has been found in most such children and in some children without the physical characteristics of FAS. The primary damage to the child clearly occurs in utero. The type of malformation that occurs suggests that structural damage began very early in pregnancy, clearly during the first trimester. Alcohol alone if ingested in large enough amounts during pregnancy appears to produce the type of damage to the foetus that has been termed FAS. Mental handicaps: A retrospective study utilising data from the Perinatal Collaborative Project (a sample of 60,000 pregnancies from 12 hospitals across the USA, collected 10–15 years ago that followed up the child at age 7) was able to label 23 women as chronic alcoholics and to find two carefully matched controls for each alcoholic mother (matching on race, age, education, parity, SES of household and geographical region of delivery). The sample was predominantly poorly educated, lower SES of whom 50% were non-white. The finding comparing the offspring of alcoholic mothers (AMs) to controls found: i) AMs rate higher perinatal mortality rates. ii) One-third of surviving off-spring of AMs had FAS. iii) At age 7, 44% of children of AMs had an IQ below 79 compared to 11% of controls. iv) Mean IQ of offspring of AMs was 81 vs. 95 for controls. v) Offspring of AMs were significantly behind their matched controls on tests of academic achievement, reading, arithmetic and spelling. Another study has shown a relationship between degree of dysmorphogenesis and the level of intellectual functioning. Lower, moderate and high physical symptoms corresponded to high, moderate and low levels of intellectual functioning respectively. However, severity of diagnosis and degree of mental deficiency are not fully predictable from each other.	Levels of consumption commonly called social drinking are significantly related to decreased birth weight in the offspring as well as to a variety of behavioural deficits of unknown predictability. We believe the primary time for prevention is before the fact. We feel that any woman who is alcoholic and of child-rearing age should stop drinking prior to conception and refrain from drinking during pregnancy and during the nursing period.	

Study	Research quest	Participants & methods	Results	Other findings	Comment
67. Rydelius, P. (1997) 'Annotation: Children of alcoholics a clinical concern for child and adolescent psychiatrists today?' *Journal of Child Psychology and Psychiatry*, 38:615-624 Design: Review article This is a review article, not appropriate to rate.	This review provides an overview of the difficulties in treating children of alcoholics (COA) and of the social and practical issues facing this population.	Topics covered in this review include: • Children of alcoholic mothers. • Clinical relevance of COA in daily child psychiatric practice. • The alcoholic family as a model for studying childhood psychopathology. • Child abuse and neglect. • Vulnerability and resilience. • And a hypothesis on protective versus risk mechanisms.			

Study	Research quest	Participants & methods	Results	Other findings	Comment
68. World Health Organization. 2006 *Mental health and substance abuse* (www.who.it)					

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