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Danya Braunstein, Elizabeth Maloney, Judy Wilson**

**The Impact of Alcohol Use Disorders
on Family Life: A Review of the Empirical Literature**

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THE IMPACT OF ALCOHOL USE DISORDERS ON FAMILY LIFE: A REVIEW OF THE EMPIRICAL LITERATURE

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Danya Braunstein, Elizabeth Maloney, Judy Wilson**

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EXECUTIVE SUMMARY

This report aimed to review the empirical literature on the impact of parental alcohol use disorders on family life. The report focused specifically on harms inflicted by the problematic consumption of alcohol on members of the family, particularly spouses and children, and on the functioning of the family unit as a whole. The key objectives of this report were to (a) improve understanding of the nature and extent of the impacts, (b) provide specific directions for future research, and (c) identify salient factors to be incorporated in national health policies, and prevention and treatment initiatives that aim to reduce the burden of alcohol use disorders in Australia.

It is important to note that the review is not all-inclusive. The impacts that were considered most important and the ones for which there was considerable empirical support were selected for review. The review relied on cross-sectional studies when more rigorous longitudinal studies were not available. Much of the research has been conducted internationally; however, where available, findings from large-scale cohort studies in Australia and New Zealand have been included to improve understanding of the links between parental alcohol use problems and family functioning within the local context. The report also overviewed the available research on the impact of alcohol within Indigenous communities in Australia.

The review demonstrated that there is a large body of research showing significant associations between parental alcohol use disorders and a range of problems in family life and functioning. These problems include, but are not limited to, parent and family conflict and violence, parental separation and divorce, parent mental health and other substance use problems, economic problems, disrupted parenting, parent-child relationship problems and a range of mental health and cognitive disturbances in offspring. This review has shown that these problems often co-occur in families affected by parental drinking problems, particularly in families where both parents abuse or depend on alcohol. As most studies in the literature reviewed have been cross-sectional, problems in family life cannot be attributed solely to alcohol use. Rather, it is likely that these factors interact in complex and dynamic ways, as well as with other macro- and local environmental factors, to determine the specific impacts for each family.

The literature used in this review highlighted a number of conclusions:

1. The extent of harmful drinking patterns and alcohol use disorders among Australian parents is significant.
2. Alcohol abuse is common among Aboriginal and Torres Strait Islanders and has frequently been linked to family violence.
3. Parental alcohol use disorders are associated with a range of problems in family life.
4. Consideration of a developmental perspective is important in planning future policy and practice.
5. Treatment and intervention efforts should address the multiple risks experienced by families affected by parental drinking problems.
6. Prenatal exposure to alcohol increases the risk for a range of physical, cognitive and mental health problems in children, including Fetal Alcohol Syndrome Disorders. The question of whether there is a safe level of drinking during pregnancy remains to be established.

7. The early introduction of alcohol to children and young people by parents may increase the risk for future drinking problems.
8. The protective factors within families that minimise the negative impact of parental alcohol use problems should be promoted.
9. More Australian research, especially longitudinal research, is needed to promote understanding of the processes and developmental pathways via which parental alcohol use impacts on family life.

CHAPTER 1. INTRODUCTION

1.1 Overview, aims and objectives

This report aims to review the empirical literature on the impact of parental alcohol use disorders on family life. The report will focus specifically on harms inflicted by the problematic consumption of alcohol on members of the family, particularly spouses and children, and on the functioning of the family unit as a whole. The key objectives of this report are to (a) improve understanding of the nature and extent of the impacts, (b) provide specific directions for future research, and (c) identify salient factors to be incorporated in national health policies, and prevention and treatment initiatives that aim to reduce the burden of alcohol use disorders in Australia.

Although research evidence is consistent with regard to the adverse impact of parental alcohol use disorders on family life, the relationship between alcohol and family outcomes is complex. There are various issues that need to be considered if an understanding of this relationship is to be gained. First, it is clear that difficulties in family life are not the result of alcohol alone. Rather, alcohol use disorders are one of numerous social, familial and individual risk factors that have been linked to problems in family life. Research indicates that such factors often co-occur and interact in complex ways, increasing the overall risk of problems in family life (The National Center on Addiction and Substance Abuse at Columbia University [CASA], 2005; Eurocare and The Confederation of Family Organisations in the European Union [COFACE], 1998). For example, it is not uncommon for families in which one or more parents have a drinking problem to reside in communities with low average socio-economic status (SES) and poor resources, or to suffer from comorbid psychological and physical health problems, which compound the risk for problems in family life. This review therefore aims to clarify understanding of the impact of alcohol use disorders on family life, whilst acknowledging the context of a broader spectrum of factors that have been shown to influence the risk of problematic family-related outcomes.

1.2 Description of studies included in the review

A large body of research has examined the impact of alcohol on family life. However, given the space limitations for this paper, the review is not all-inclusive. The impacts that were considered most important and for which there was considerable empirical support were selected for review. Emphasis has been placed on the inclusion of longitudinal studies that examine change in a given sample over an extended time, permitting the identification of predictors of outcomes. We have relied on cross-sectional studies when more rigorous longitudinal studies were not available. Cross-sectional studies are important in identifying connections between predictors and outcomes that are both assessed at the same point in time. Much of the research has been conducted internationally; however, where available, findings from large-scale cohort studies in Australia and New Zealand have been included to improve understanding of the links between parental alcohol use problems and family functioning within the local context. The report also overviews the available research on the impact of alcohol within Indigenous communities in Australia.

Emphasis has also been placed on including research that identifies both the direct and indirect ways in which alcohol impacts upon family life. Indirect influence refers to the ability for proximal sources of influences to mediate or buffer more distal sources of influence. For example, parental heavy drinking when children are young (distal influence) can impact negatively on the quality of the parent-child relationship in adolescence (proximal influence), which in turn may influence a young person's choice of deviant peer friendships. Knowledge of both direct and indirect relationships is important if we are to tease apart the complex pathways of influence between parental alcohol use problems and family functioning.

1.3 The spectrum of alcohol use: Key definitions

It is important to distinguish between terms used for alcohol use. 'Alcohol use' broadly refers to any use of alcohol, from single occasion use at one end of the spectrum, through to alcohol dependence on the other. 'Alcohol misuse' refers to use that is risky (e.g. drink driving) and/or harmful (e.g. binge drinking). 'Alcohol use disorder' meets the criteria under the class of substance-related and addictive disorders in the fifth edition of the American Psychiatric Association (APA) *Diagnostic and Statistical Manual of Mental Disorders: DSM-5* (2013). These criteria define the disorder as a problematic pattern of alcohol use that results in clinically significant impairment or distress, often referred to in the literature as 'alcohol abuse'. In DSM-5, the categories of 'alcohol abuse' and 'alcohol dependence' were combined to define a single disorder on a continuum from mild to severe. Many studies included in this review use diagnostic criteria from the earlier editions of the manual (e.g. DSM-III, APA, 1980; DSM-IV, APA, 1994) and refer to the separate categories of alcohol abuse, and alcohol dependence which includes features of tolerance. Clear definitions of the alcohol use terminology are important because the effects of alcohol vary depending on level and frequency of use.

This review will focus on the impact of parental alcohol abuse and dependence, referred to as 'alcohol use disorders'. However, it is important to acknowledge that not all alcohol-related problems that affect families necessarily arise from clinical disorders. Indeed, the majority of empirical studies have used broader definitions of alcohol-related difficulties such as 'problem drinking' or 'heavy drinking'. Current Australian Alcohol Guidelines are consistent for men and women, and recommend drinking no more than two standard drinks per day to avoid risk of long-term harm from alcohol-related disease or injury, and drinking no more than four standard drinks on a single occasion to avoid alcohol-related injury (National Health and Medical Research Council [NHMRC], 2009). Drinking more than 14 standard drinks per week is often defined in the literature as 'heavy drinking' while greater than four drinks in a single occasion can be defined as 'binge' drinking (Maloney et al., 2010). Many Australian studies prior to 2009 used less conservative definitions of short- and long-term harm based on the 2001 Australian Alcohol Guidelines (NHMRC, 2001). This prevents accurate comparisons of the different datasets using these varied terms and definitions. Despite variation between studies in how drinking problems have been operationalised, these terms generally refer to elevated levels or harmful patterns of alcohol consumption (e.g. regular excessive consumption and drinking to intoxication), that do not necessarily meet criteria for an alcohol use disorder. As these kinds of drinking patterns can also have adverse impacts on family life, studies that have used broader definitions of alcohol use problems have been included in the review and the distinction in terminology has been clearly noted.

CHAPTER 2. THE PREVALENCE OF ALCOHOL USE AND ALCOHOL USE PROBLEMS IN FAMILIES

2.1 Introduction

There is little published Australian data available on the prevalence of parental alcohol use problems that meet criteria for a clinical disorder. The 2007 Australian National Survey of Mental Health and Wellbeing (NSMHWB) used a national stratified randomised sample (N = 8,841) to establish the prevalence of psychiatric diagnoses in the general Australian population. The study found that 22.7 per cent of Australians had experienced an alcohol use disorder at some point in their lifetime, and 4.3 per cent had an alcohol use disorder in the preceding 12 months. Specifically, in the 12-month period prior to 2007, 2.9 per cent of the Australian population (adults aged 16 to 85) met DSM-IV criteria for alcohol abuse and a further 1.4 per cent met criteria for alcohol dependence (Teesson et al., 2010). Correlates of alcohol use disorders within the previous 12 months were gender (male), age (young), marital status (un-married), country of birth (Australia or another English-speaking country), and having an anxiety or other drug use disorder.

Twelve-month prevalence rates for substance use disorders according to household composition were also reported in the 2007 NSMHWB. These figures showed that 4.5 per cent of individuals from couple families with children and 9.1 per cent of those from one parent families with children met criteria for substance use disorders, compared to 5.1 per cent of the general Australian population aged 16 to 85 years (Teesson et al., 2010). It is important to note that although the majority of substance use disorders comprise those relating to alcohol use, these figures do include other drug use disorders, and thus limited conclusions can be drawn specifically about alcohol use disorders among parents.

Despite the limited evidence concerning parental alcohol use disorders, there is emerging information on parental drinking that may be defined as 'excessive' according to current NHMRC guidelines. The remainder of this chapter will summarise current data regarding drinking in families that is available from Australia, following which it will provide a brief overview of the international research in the area.

2.2 Prevalence of alcohol use and alcohol use problems in Australian families

The most recent data regarding parental alcohol use was derived from the National Drug Strategy Household Survey (NDSHS), which has been conducted in Australia approximately every three years since 1985, using a multi-stage, stratified area random sample design. The latest survey was carried out in 2010 using a sample of 26,648 adults across Australia (Australian Institute of Health and Welfare [AIHW], 2011a). Results of the survey found 18.6 per cent of single parents of dependent children and 19.5 per cent of parents in a couple relationship with dependent children consumed alcohol at a level that placed them at lifetime risk of alcohol-related harm according to current NHMRC alcohol guidelines (more than two standard drinks per day). These figures for parents were slightly lower than the corresponding figure of 20.1 per cent for the general Australian population aged 14 years or over. Data from the same survey showed that 16.9 per cent and 14.3 per cent of single and coupled parents of dependent children,

respectively, engaged in binge drinking (consuming more than four standard drinks on a single occasion) on at least a weekly basis, compared to 15.9 per cent of all individuals aged 14 years or over (AIHW, 2011a). A report based on data from the 2007 NDSHS survey suggests that overall, parents are less likely to consume alcohol at risky levels compared to individuals without dependent children (Maloney et al., 2010). Nevertheless, estimates based on this same data, and using the 2008 population figures from the Australian Bureau of Statistics (ABS) to extrapolate prevalence in the general population, suggest that 17-34 per cent of dependent Australian children aged 0 to 14 years are raised in an environment where heavy or binge drinking is occurring (Maloney et al., 2010).

It is important when considering the data from surveys such as the NDSHS to acknowledge the limitations inherent in such national datasets, as highlighted by a number of authors (e.g. Dawe et al., 2007; Maloney et al., 2010). These limitations include the potential for respondents to underestimate their alcohol use in such self-report surveys due to a social desirability bias, as well as lack of awareness about the quantity of a standard drink as the unit of measurement. Indeed, less than 50 per cent of known alcohol sales were accounted for by responses to the 1998 NDSHS (Stockwell et al., 2004). Response rates for the 2007 and 2010 NDSHS were 51.6 per cent and 50.6 per cent respectively, leaving open the possibility that respondents may differ from those who did not complete the survey in their alcohol use patterns. Furthermore, such surveys tend to under-sample minority and marginalised groups in society, which may further influence the prevalence estimates reported.

Bearing in mind such limitations, there is information available with regard to the characteristics that predict risky drinking among Australian parents, although it should be noted that the cross-sectional design of the surveys on which these findings are based prevents conclusions being drawn about the causal direction of these relationships. Consistent with gender differences noted in the general population (Teesson et al., 2010; AIHW, 2011a), reports based on data from a number of surveys have indicated that fathers are more likely to engage in risky alcohol use than mothers (Dawe et al., 2007; Maloney et al., 2010). Additional factors that have been found to predict risky drinking patterns among parents based on the 2007 NDSHS data are: being a current tobacco-smoker, higher levels of psychological distress, and lower educational levels (Maloney et al., 2010). Monthly and weekly binge drinking among parents has also been found to be associated with younger age; as well as household composition, with single mothers being more likely to report binge drinking than mothers from couple families (Dawe et al., 2007; Maloney et al., 2010). Furthermore, Maloney et al. (2010) found that parents who were currently employed and had a higher level of household income were more likely to engage in monthly binge drinking as well as heavy alcohol consumption that put them at risk of long-term harm.

Analysis of Australian survey datasets by Dawe et al. (2007) also suggest that the age of one's children may be related to alcohol use patterns. Specifically, their analyses of data from The Australian Longitudinal Study on Women's Health (ALSWH) indicated that among women in the 25 to 30 year age group, rates of binge drinking once or more per week were higher among those with children aged six to 12 years (11.4 per cent) or 13 to 16 years (11.8 per cent), compared to those with children under 12 months (3.6 per cent) or aged one to five (6.3 per cent). Their analyses of data from the 2001 National Health Survey however, showed that in households with children, there was no difference in alcohol risk status according to the number of children living in the household (Dawe et al., 2007).

Other Australian data suggest that there are specific sub-groups in the community in which parents and caregivers appear to be at elevated risk for alcohol problems. For example, statistics show that alcohol use disorders are particularly common among parents of children who enter the child protection and out-of-home care system (Ainsworth, 2004); however, these data are often conflated with illicit drug use disorders. Alcohol was a risk factor in an estimated 19,443 cases of substantiated child abuse during 2006 and 2007, and between 24,581 and 31,656 cases of domestic violence reported to police in 2005 (Laslett et al., 2012). A report from the Department of Children and Family Services in Western Australia found that drug and alcohol use was a concern in 50 per cent of cases where family reunification was under consideration (Ainsworth & Summers, 2001). It has also been estimated that up to 80 per cent of all child abuse reports investigated by the New South Wales Department of Community Services (2002) involve concerns about drug and alcohol-affected parenting. Recent figures estimate 33 per cent of the substantiated cases examined by the Victorian Child Protection Services between 2001 and 2005 involved alcohol use. The variability of these rates may be attributable to differences in the practice of recording and coding between states (Laslett, Dietze & Room, 2012).

In the Victorian sample the prevalence of alcohol use was greater in those cases that were heard in court (41.7 per cent). These cases required more serious interventions and resulted in poorer outcomes for the children when there were numerous risk factors also present, including significant socio-economic disadvantage, unemployment, unstable family structure, psychiatric comorbidities and the parent's own history of abuse (Laslett, Dietze et al., 2012). A 2008 population estimate based on a sample of 1,142 parents and primary carers suggests that 22 per cent of Australian families have one or more children who have experienced general alcohol-related harm as a result of someone else's drinking, and 12 per cent of families identified a specific alcohol-related harm such as verbal abuse, physical injury, neglect and lack of supervision, and witnessing domestic violence. These harms were most commonly perpetrated by an immediate family member (61 per cent) or a relative (12 per cent), and were more common in single-carer households and households with low income or socio-economic disadvantage (Laslett, Ferris et al., 2012).

Data on the prevalence of parental alcohol use and problematic drinking in Australian Indigenous populations are limited, but indicate that this group consume alcohol in a more risky manner than the general population. For example, 38 per cent of Indigenous women and 60 per cent of Indigenous men reported typically drinking nine or more standard drinks when they drank, compared to one per cent of women and five per cent of men in the general population (Saggers & Gray, 1998). More recent data from the 2010 NDSHS support these trends, indicating that Indigenous Australians are more likely to abstain from drinking than non-Indigenous people (24.5 per cent and 19 per cent respectively); however, when they drink they are 1.5 times likely to do so at high-risk levels for both single occasion (52 per cent) and lifetime harm (31 per cent) (AIHW, 2011a). It is likely, however, that these figures underestimate Indigenous substance use in comparison to other groups because they are less likely to dwell in the standard private households sampled in most surveys or are living in remote areas (Chikritzhs & Brady, 2006; Fitzpatrick et al., 2012).

In summary, the available evidence from Australia suggests that while alcohol use disorders are not widespread among families in the general community, binge drinking

appears relatively common, especially among fathers and single mothers. The data also show that there are specific sub-groups of parents and caregivers who are at particularly high-risk of suffering alcohol use disorders. This includes disadvantaged socio-economic groups such as parents of children who enter the child protection system, and Indigenous Australian parents. As with all of these studies, prevalence rates have been estimated from samples within communities, states, or national surveys, and are subject to limitations such as underreporting of consumption. Further epidemiological research is needed to provide more accurate estimates of the prevalence of parental alcohol use problems in Australian families and within specific sub-groups in Australia.

2.3 International research on the prevalence of alcohol use problems in families

A number of international studies have examined the prevalence of alcohol use disorders among people who are parents or who have significant responsibility for the care of children. Using responses from the annual National Survey on Drug Use and Health (NSDUH), data were collected between 2002 and 2007 from 87,656 respondents on the number of children in the United States (US) living with substance abusing or substance dependent parents (Substance Abuse and Mental Health Services Administration [SAMHSA], 2009). The survey focused on biological, step, adoptive, and foster children younger than 18 years of age who were living with one or both parents at the time of the study interview. Estimates indicated that between 2002 and 2007 almost 7.3 million children (approximately 10.3 per cent) lived with at least one parent who abused or was dependent on alcohol. This is substantially lower than earlier figures suggested by Grant (2000) who estimated that more than 19 million (28.6 per cent) US children had been exposed to parental alcohol abuse or dependence within the family before the age of 18, based on data from the National Longitudinal Alcohol Epidemiologic Survey in 1992 (N = 42,862). Canadian prevalence estimates are slightly lower, based on 2002 Canadian Community Health Survey data (N=36,984), suggesting that 8.3 per cent of Canadian children under 12 were exposed to parental alcohol abuse or dependence in the prior 12 months (Bassani et al., 2009).

Epidemiological research indicates that parental alcohol use problems are also common throughout Europe. Based on extrapolated survey data from Denmark and Finland in the late 1990s, it was estimated that between 4.5 and 7.9 million children (approximately 12 to 21 per cent) under 15 years of age in European Union countries were living in households affected by parental alcohol misuse (Eurocare & COFACE, 1998). There have been some criticisms of the methodology used to calculate these rates, since many European countries did not directly assess prevalence and based the estimates on extrapolations using data from only two countries (Harwin et al., 2010). Of the countries which collected first-hand survey data on national child prevalence rates, there was considerable variability with estimates of the number of children under 18 years who are exposed to parental alcohol misuse ranging from 2.7 per cent in Lithuania to 19.3 per cent in Poland (Harwin et al., 2010). Unfortunately, the ENCARE report (Harwin et al., 2010) did not elucidate whether these statistics are lifetime prevalence rates or based on the previous 12 months from the time of the survey, preventing comparison with other international prevalence data.

International figures for risky or binge drinking show less variability between countries of similar socio-economic status. Recent estimates from the US indicate that 23.8 per cent of children under the age of 18 (17 million) currently live in a household where a parent

or other adult [authors' italics] is a binge or heavy drinker (where binge drinking is defined as five or more drinks in one occasion, and heavy drinking is defined as five or more drinks on one occasion on five or more days in the past month) (CASA, 2005). Data from Australia and the United Kingdom (UK) also show similar rates for binge drinking. A meta-analysis in 2009 of five UK National Household Surveys conducted between 2000 and 2004 indicated that between 3.3 and 3.5 million children under 16 years of age (roughly 30 per cent) in the UK live with at least one binge drinking parent (defined as six or more drinks for women in a single occasion, and eight or more drinks for men) (Manning et al., 2009). This is comparable to the estimate for Australia as reported above, suggesting that 17 to 34 per cent of those under 14 years are exposed to binge or heavy parental drinking (four or more drinks in a single occasion or 14 or more drinks per week respectively) (Maloney et al., 2010). However, these data should be interpreted with caution because they use different definitions of binge and heavy drinking, different age ranges for children, and some of these surveys include adults within the household who are not the parent or primary caregiver, making comparisons difficult.

Despite similarities between several countries in rates of binge and heavy drinking, it is interesting to note that the prevalence of alcohol dependence is significantly lower in Asian countries (between 0.2 and 7.3 per cent of each country's population) than in the Americas, Europe and Australia (Chen & Yin, 2008). Socio-economic, cultural and biological factors are believed to account for the lower rates of problem drinking in these Asian populations, such as Iran, South Korea, Japan and Indonesia. Although there is a paucity of studies looking at the prevalence of alcohol misuse among parents in Asian countries, it is expected that these data would reveal lower rates of children being exposed to parental problem drinking in Asian countries, but similar associations between parental drinking and negative impacts on families and children (Hung, Yen & Wu, 2009).

There are several limitations to consider when comparing international statistics. First, studies generally do not measure alcohol use in the same way; second, they define children by differing age ranges. Third, few surveys directly assess the prevalence of problem drinking in the family and the numbers of children affected, and some surveys include adults within the household who are not the parent or primary caregiver, so that most statistics are estimates based on many different assumptions. Fourth, surveys that provide information on such prevalence statistics acknowledge the limitations of self-report and the likelihood that rates of risky drinking are underreported in such samples. While cross-cultural studies assessing the prevalence of children's exposure to parental drinking are currently not available, data from these international sources make it clear that there are a significant number of families and children in the US, Canada, Europe, and Australia adversely affected by parental alcohol use problems.

CHAPTER 3. FRAMEWORK FOR REVIEWING LITERATURE

Two theoretical frameworks have been used as a basis for conceptualising the relationship between parental alcohol use disorders and problems in family life. The first is an adapted version of a model of the *structural determinants of youth drug use*, proposed by Spooner, Hall, and Lynskey (2001). The model was designed to understand the various levels of influence involved in the development of youth drug use. Within the context of this review, this model also serves as a useful framework for conceptualising the range of factors likely to influence the relationship between parental alcohol use and family functioning, including the related development of substance use in young family members.

Figure 1 illustrates the model, which proposes that there are different levels of influence that span a continuum, ranging from macro-environmental factors at one end, through to individual micro-level factors at the other end. Within the context of the current review, macro- and local environmental factors refer to societal, cultural and economic factors known to influence average alcohol consumption (Edwards et al., 1994; Babor et al., 2003). Examples of these types of factors include cultural drinking norms, religious sanctions, the availability and pricing of alcohol, and media advertising. In addition to macro- and local environmental influences, there are a range of micro-level factors in society that influence alcohol consumption in both parents and in children. These include family and individual factors such as employment and income, marital quality, parenting skills and mental health problems (e.g. Mitchell et al., 2001; Hayes et al., 2004).

Each level of influence in the model is thought to have both direct and indirect influence on the other levels of influence (Spooner et al., 2001). Influences can also be bi-directional, in that individuals can influence their family, peers and work or school life, as well as the macro-environment. This review deals predominantly with micro-level influences, focusing specifically on parental drinking, the family unit, and on individual factors that are related to family life and alcohol use. This review does not focus on macro- and local environmental factors specifically, but acknowledges that such environmental factors do impact on parental alcohol use and related harms.

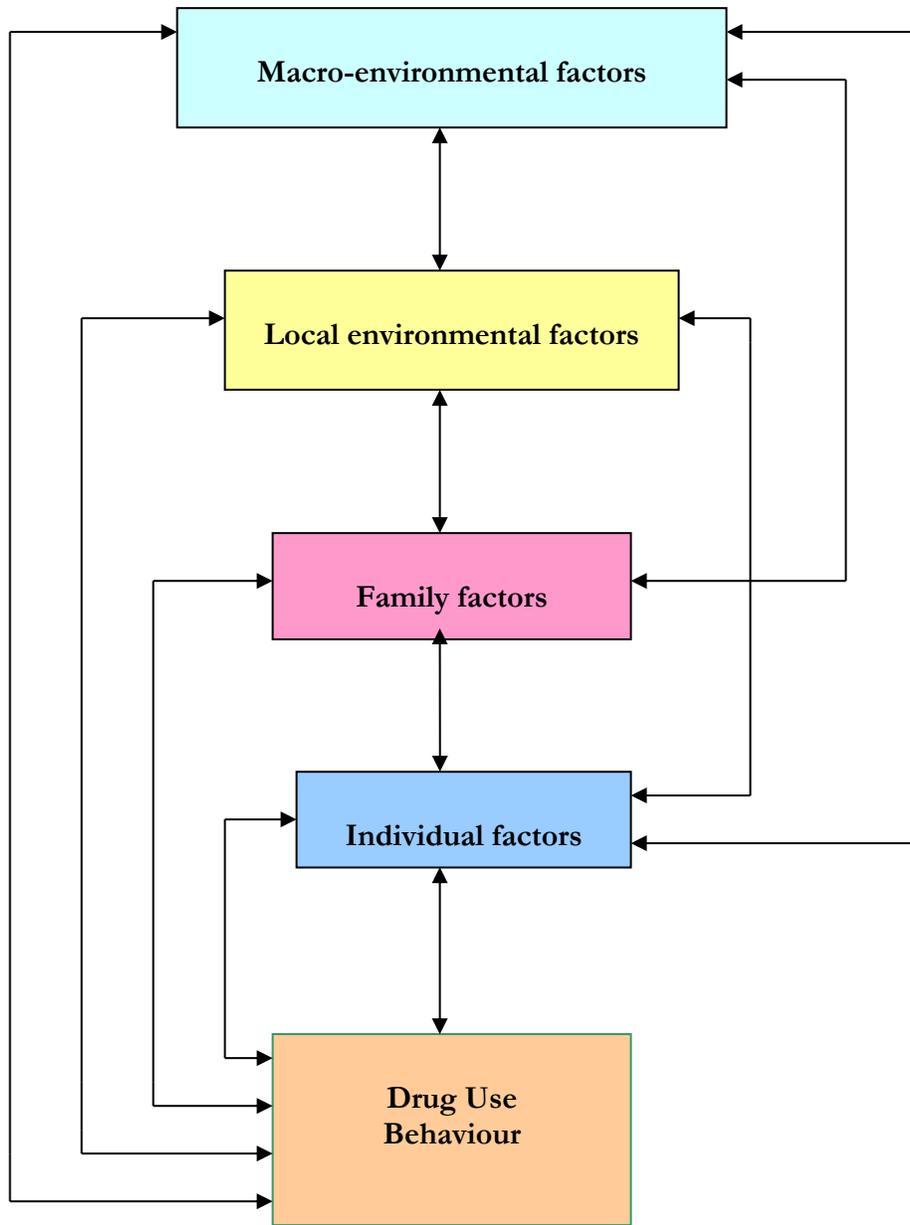
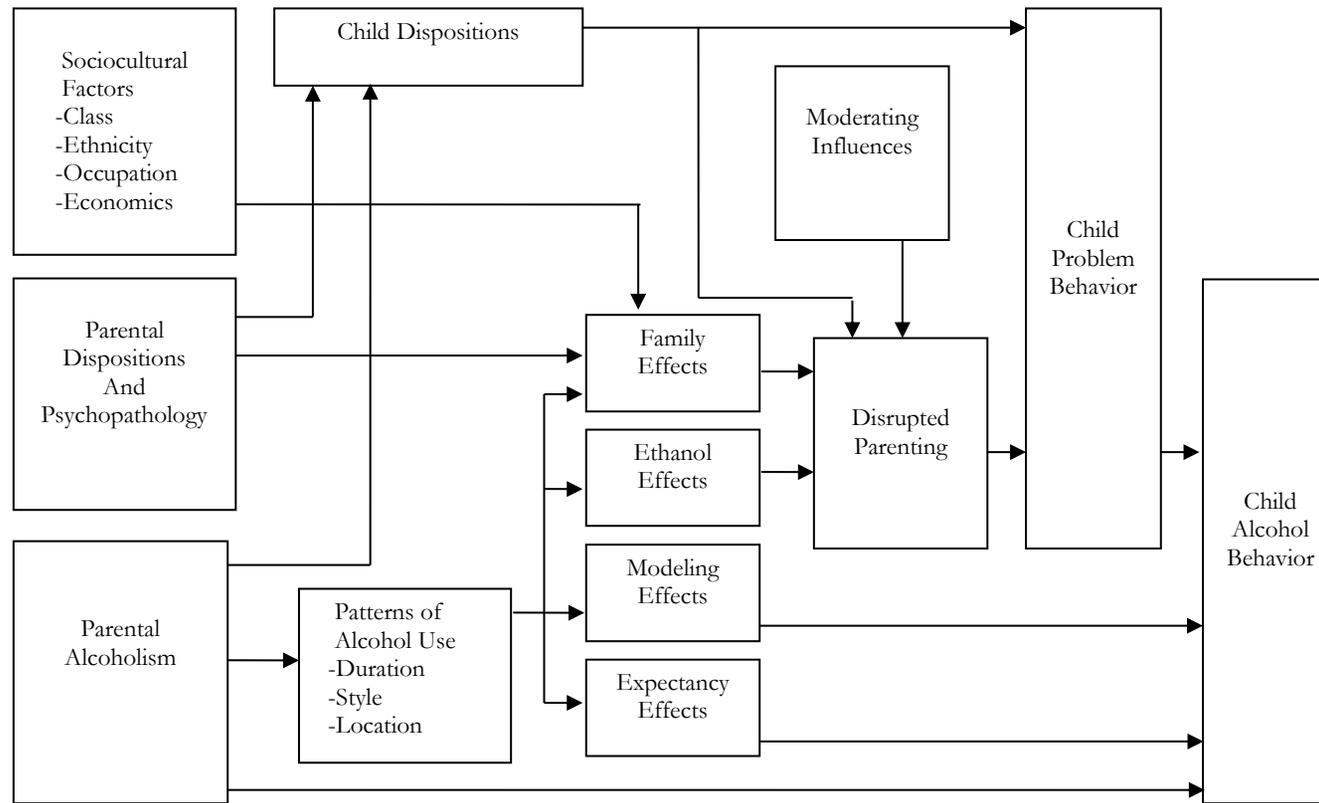


Figure 1: Influences model

Source: Adapted from: Spooner C., Hall W., & Lynskey M. (2001). *Structural determinants of youth drug use*. ANCD Research Paper No. 2. Australian National Council on Drugs, Canberra: 2001. Reproduced with permission from ANCD.

Figure 2 shows the second model, which focuses specifically on parental alcohol use disorders and family effects (Jacob & Leonard, 1994). The model depicts the pathways via which parental alcohol problems are theorised to impact on family functioning, and in turn, how these family effects contribute to the development of child problem behaviour and alcohol use. Specifically, the model proposes that there are several pathways via which family variables can influence child problem behaviour and alcohol use. These pathways include alcohol-specific family effects that are either genetically or environmentally mediated, as well as non-alcohol-specific effects that are primarily related to disruptions in child socialisation and development. The unique quality of this multivariate model is that it conceptualises the relationship between parental alcohol use disorders and family life whilst accounting for the influence of a range of other individual and familial risks.



Family Effects -Marital conflict -Sibling interaction -Financial strain -Social isolation -Ritual disruption -Family system disturbance	Ethanol Effects -Mood and behaviour alteration -Medical problems Moderating Influences -Social support from school, friends, community, extended family, undisturbed parent	Modelling Effects -General modeling of drinking behavior -Drinking as a coping response	Disrupted Parenting -Inconsistent/unstable environment -Poor monitoring and socialization -Lack of nurturance	Child Problem Behavior -Conduct disorder -Internalizing disorder
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Figure 2: Family influences on the development of child problem behaviour and alcohol abuse

Source: From: Jacob, T., & Leonard, K. E. (1994). Family and peer influences in the development of adolescent alcohol abuse. In R. Zucker, G. Boyd & J. Howard (Eds.), *Development of alcohol problems: Exploring the biopsychosocial matrix of risk*. NIAAA Monograph No. 26, pp. 123-156. National Institute on Alcohol Abuse and Alcoholism, Rockville, MD. Reproduced with permission from NIAAA.

CHAPTER 4. REVIEW OF EMPIRICAL LITERATURE ON THE IMPACT OF ALCOHOL USE DISORDERS ON FAMILIES

4.1 Five key areas in the research literature

Research on the impact of alcohol use disorders on family life has been segregated into five sections based on key themes that emerged in the literature. These sections examine, in turn, the relationship between alcohol use disorders in parents and:

- (1) marital and intimate partner relationship quality;
- (2) family functioning;
- (3) co-occurring mental health and other substance use disorders in parents;
- (4) parenting; and,
- (5) physical, cognitive and mental health outcomes in children.

4.2 Impact on marital and intimate partner relationships

4.2.1 Marital/intimate partner dissatisfaction and breakdown

Evidence of association

Alcohol use disorders have consistently been associated with marital dissatisfaction and conflict (Leonard & Eiden, 2007; Jacob & Leonard, 1994; Marshal, 2003; Tubman, 1993). Case-control studies indicate that the home environments of families affected by alcohol use are characterised by elevated levels of marital discord compared to families not affected by alcohol use (Eiden et al., 2004; Leonard & Jacob, 1997; Tubman, 1993). Epidemiologic studies conducted in the US and Canada (Goering et al., 1996) have also demonstrated cross-sectional associations between marital dissatisfaction and alcohol use disorders.

Treatment studies provide support for a relationship between alcohol use disorders and intimate partner or marital problems. Married and cohabiting males entering treatment for alcohol use disorders have been shown to report high levels of marital distress (Stuart et al., 2003), non-violent conflict (Murphy et al., 2005), and poor relationship functioning and adjustment (O'Farrell et al., 2004). Couples seeking marital therapy also frequently report alcohol use problems, particularly in male partners, as a major source of marital conflict (Halford & Osgarby, 1993).

Given the relationship of alcohol use disorders with marital dissatisfaction and conflict, it is not surprising that separation and divorce are more common among marriages in which at least one partner abuses alcohol. General population studies indicate that heavy alcohol consumption and frequent drinking episodes are associated with elevated rates of separation and divorce. Marriages in the UK where one or both parents have an alcohol problem are twice as likely to end in divorce as marriages where alcohol problems are absent (Prime Minister's Strategy Unit, 2004). There is a paucity of Australian research in this area, although a national community survey of 650 divorced men and women found that 11 per

cent of women and three per cent of men reported alcohol or drug abuse as the main reason for their divorce (Wolcott & Hughes, 1999).

Taken together, research has identified significant associations between alcohol use disorders and intimate partner or marital dissatisfaction and separation. However, it is by no means clear that abuse of alcohol is causally related to marital problems. The following section examines the evidence provided by longitudinal studies on this issue.

Evidence relating to causality

There is some evidence from longitudinal studies that alcohol use problems predict subsequent marital dissatisfaction. Zweben (1986) examined a clinical sample of 87 couples 12 months after receiving conjoint therapy or counselling advice. The study found that the likelihood of marital disruption was significantly greater among heavy-drinking couples than non-heavy-drinking couples. The relationship between problem use and marital satisfaction was found to be mediated by stress associated with alcohol problems. Outside the clinical setting, Testa and Leonard (2001) examined a representative sample of newlywed couples (N = 387) at the time of their marriage and at their one-year anniversary. They found that alcohol dependence in men was associated with lower marital satisfaction among wives at follow-up. Interestingly, alcohol consumption and binge drinking were not associated with lower marital satisfaction. The investigators suggested that it is the problems associated with alcohol dependence, rather than alcohol consumption per se, that have an adverse effect on marital functioning.

Other studies have examined the association between relationship breakdown and per capita alcohol consumption (Lester, 1997; Caces et al., 1999). Lester (1997) conducted a time series analysis of data from the US and Europe between 1950 and 1972 and found that among seven of the eight nations studied, the more alcohol consumed per capita, the higher the divorce rate. Caces et al (1999) examined the per capita consumption of alcohol in the US between 1934 and 1987. Results there indicated that a consumption increase of one litre of alcohol per capita brought about a 20 per cent increase in the divorce rate. Reciprocally, an increase of 1/1000 in the divorce rate also led to a 10 per cent increase in alcohol expenditure (Caces et al., 1999). These results provide support for the notion that a bi-directional influence may exist between alcohol consumption and divorce rates.

A number of longitudinal studies conducted internationally have examined the relationship of alcohol use specifically to separation and divorce. Wilsnack et al. (1991) compared 143 problem drinkers and 157 non-problem drinkers in a female sample over a five-year period. Results indicated that the relationship between alcohol use and divorce or separation was moderated by problem drinking status at baseline. Among non-problem drinkers, higher average consumption and frequency of intoxication at baseline were related to separation and divorce across time. Interestingly, divorce or separation was found to predict lower levels of subsequent alcohol dependence among problem drinkers. These results suggest that separation and divorce were more likely to follow, than precede, heavier drinking in women.

Power and Estaugh (1990) examined a large (N = 9,337) representative cohort of young people in Great Britain and found that partnerships among heavy drinkers were relatively unstable. Examination of drinking levels at ages 16 and 23 indicated that relationship

breakdown was common in young men and women who had been heavy drinkers at both time points and among those increasing consumption between adolescence and early adulthood. The direction of effect could not be established because the temporal sequencing of partnership breakdown and heavy drinking was not clear over the seven-year period (i.e. difficult emotional relationships and excessive drinking may occur simultaneously). However, relationship breakdown was confounded by other factors including economic status, housing tenure, and having children. In a later follow-up of the cohort, Power, Rodgers and Hope (1999) examined the relationship between heavy alcohol consumption and marital status at age 23 and 33 (N = 11,405). The study found that 23-year-old heavy drinkers were not significantly more likely to divorce than those who did not drink heavily. However, marital separation was accompanied by short-term increases in heavy drinking, suggesting that alcohol may be used as a temporary means of coping with relationship breakdown and its concomitants.

Locke and Newcomb (2003) conducted a 16-year prospective study of women (N = 305) using a community sample in which alcohol use was identified as a significant predictor of marital dissatisfaction. The study also found that comorbid alcohol involvement and dysphoria during young adulthood was a stronger predictor of relationship maladjustment in adulthood than either alcohol involvement or dysphoria alone.

Other evidence suggests that the predictive relationship between marital dissatisfaction and problem drinking may be bi-directional. In several prospective studies, marital functioning has been shown to predict the likelihood of relapse and time to relapse among people in treatment for alcohol dependence (Maisto, McKay & O'Farrell, 1998; O'Farrell et al., 1998). Moreover, in a community study of 1,675 married couples in the US, baseline marital dissatisfaction was prospectively associated with a diagnosis of alcohol abuse or dependence at the 12-month follow-up (Whisman, Uebelacker & Bruce, 2006). Both male and female spouses who were dissatisfied with their marriage at baseline were 3.4 times more likely to have a diagnosis of alcohol use disorder at follow-up than satisfied spouses, after controlling for demographic variables and history of alcohol use disorders. However, the generalisability of the findings is limited because only 14 people met criteria for current alcohol use disorder at follow-up.

Homish and Leonard (2007) followed up a sample of 634 couples at their first- and second-year anniversaries using prospective time-lagged analyses and found that decreased marital satisfaction was associated with discrepant heavy drinking. This refers to reported differences between marital partners in their frequency of drinking to intoxication and in the frequency of heavy drinking (six or more drinks). These authors reported in an earlier study that greater levels of marital satisfaction usually occurred when partners drank together at similar quantities and frequencies (Homish & Leonard, 2005). A later follow-up of this cohort revealed that among those with high marital satisfaction, marriage is associated with a decline in drinking behaviours and reduced risk for alcohol problems (Leonard & Homish, 2008). For those who continued to display heavy drinking and alcohol use problems up to four years after marriage, the identified predictive factors were pre-existing alcohol problems and heavy drinking prior to marriage, antisocial characteristics, family history of alcohol abuse, negative effect, and alcohol expectancies.

Data also suggest that congruence between partners in drinking behaviours may positively influence marital satisfaction. Floyd et al (2006) studied individually rated positive and

negative marital behaviours in 132 couples, comparing alcohol-dependent and non-dependent combinations of husbands and wives. They also examined the influence of antisocial behaviour in the husband, noting that the comorbid prevalence of alcohol use disorders in those with antisocial personality disorder was 74 per cent (Floyd et al., 2006). They found that irrespective of the alcohol dependence status of the wife, more hostile behaviours occurred in relationships where the husband had antisocial behaviours and was alcohol dependent. However, there were a greater proportion of positive behaviours when alcohol dependence was congruent, i.e. where either both of the spouses or neither of the spouses had a diagnosis related to alcohol use.

Also supporting the notion of the relevance of matched drinking behaviours, a large and representative longitudinal study (N = 4,589) conducted in the US between 1992 and 2000 found that discrepant drinking levels (rather than actual drinking levels) in partners were predictive of marital dissolution (Ostermann, Sloan & Taylor, 2005). This study also found that history of problem drinking by either spouse was not associated with an increased risk of divorce.

Conclusion

In summary, evidence from epidemiology and treatment settings suggests that elevated alcohol misuse in families leads to increased marital discord. In terms of the predictive relationship between alcohol misuse and marital outcomes, the evidence suggests that influences can be in either direction over time. Thus it is likely that marital dissatisfaction can be a cause as well as a consequence of alcohol misuse. In studies where comorbid psychiatric variables are controlled, results support the notion that incongruent drinking, rather than heavy drinking per se, is most strongly associated with marital discord. This is usually where the male is the heavy drinker but can occur where the female is the heavy drinker as well.

These findings highlight the need for routine assessment and treatment of problematic drinking in couples seeking relationship therapy, and reciprocally, assessment and treatment of relationship problems among individuals seeking treatment for alcohol use disorders.

4.2.2 Marital/intimate partner violence

Evidence of association

Australian survey data reveals that in the 12 months preceding the 2007 NDSHS, six per cent of men and three per cent of women had experienced physical abuse by someone affected by alcohol. For 43 per cent of those females, the perpetrator of the physical abuse was a current or former spouse or partner, compared to only nine per cent of the male respondents (Laslett et al., 2010). For women who had a current or previous partner, 31 per cent experienced physical partner violence during their lifetime and three per cent of women had experienced physical violence from a partner within the last 12 months. Approximately one in three incidents of partner violence experienced in the last year (35 per cent) were alcohol-related, measured by women reporting that their partner was drinking alcohol at the time of the violent act (Laslett et al., 2010). AIHW data from 2002/03 also found that a significant proportion of the burden of disease for domestic violence (9.3 per cent),

measured by Disability Adjusted Life Years was attributable to alcohol use (Access Economics, 2004).

The impact of men's drinking on domestic violence

A large body of research has been dedicated to understanding the relationship between alcohol use disorders and intimate partner or marital violence. A strong relationship has consistently been identified between male-perpetrated intimate partner violence and alcohol problems (Finney, 2004; Heyman, O'Leary & Jouriles, 1995; Holtzworth-Munroe et al., 1997; Leonard & Jacob, 1988; Leonard & Senchak, 1993; Quigley & Leonard, 2000). Maritally violent men are significantly more likely than a wide variety of comparison groups to abuse alcohol (Holtzworth-Munroe et al., 1997). Physically aggressive episodes have been shown to be four times as likely as verbally aggressive episodes to involve the husband's drinking (Quigley & Leonard, 2000; Testa, Quigley & Eiden, 2003). These episodes are also more likely to result in injury to the victim and consequent reporting to the police if the partner was drinking at the time of the incident (Thompson & Kingree, 2006). In Australia, alcohol is involved in around 50 per cent of domestic and sexual violence cases (English et al., 1995). The Australian component of the International Violence Against Women Survey (Mouzos & Makkai, 2004) found that some 35 per cent of women recalled their partners being under the influence of alcohol on the last occasion of partner violence. The survey also found that women whose husbands got "drunk a couple of times a month or more" were three times more likely to experience domestic violence than women whose partners drank less (pp 58-59).

Treatment studies provide further evidence of a link between alcohol abuse and intimate partner violence. These studies indicate that marital violence is overrepresented among individuals seeking treatment for alcohol use disorders, and reciprocally, that alcohol abuse is overrepresented among individuals seeking treatment for domestic violence. Among men entering treatment for alcohol dependence in the United States, the annual prevalence of partner violence is 50 to 70 per cent, and the prevalence of severe, potentially injurious violence is 20 to 30 per cent. These rates are four to eight times higher than the prevalence statistics for demographically similar non-alcohol-dependent men (O'Farrell & Murphy, 1995; O'Farrell et al., 2003). Fals-Stewart (2003) found that around 40 per cent of men in treatment for partner violence report a current diagnosis of alcohol use disorder. According to the study, the odds of any male-to-female aggression were more than eight times higher on days when men drank than on days of no alcohol consumption. Similarly, the odds of *severe* male-to-female physical aggression were more than 11 times higher on days of men's drinking than on days of no drinking.

Murphy et al. (2005) examined the relationship between proximal alcohol consumption and intimate partner violence in a clinical sample of alcohol-dependent men. Results indicated that alcohol consumption was present prior to both psychological and physical aggression, yet the quantity of alcohol consumed by the husband was significantly higher prior to violent conflicts. Not only was alcohol present during the vast majority of conflicts for this sample, but alcohol was also a very common topic of conflicts, reported by over half of the respondents for both violent and non-violent conflict events.

The impact of women's drinking on domestic violence

There is some evidence that female victims of male-perpetrated violence are more likely to be dependent on alcohol than non-victims (Miller, Wilsnack & Cunradi, 2000). Women who report regular alcohol use or abuse have been shown to be between 2.2 and 3.4 times more likely to be physically abused by their intimate partners than non-drinkers (Grisso et al., 1999; El-Bassel et al., 2000). An Australian study of 267 substance-dependent women found that 59 per cent (138 women) had experienced any physical or sexual assault as an adult, and 81 of these women had been sexually or physically assaulted by their partners. Of those women who were assaulted by a partner, 24 per cent reported they were intoxicated at the time of the assault and 59 per cent reported their partner was under the influence of alcohol or other drugs (Swift, Copeland & Hall, 1996). Leonard (1993) identified associations between wives' excessive alcohol consumption and their husbands' violence; however, after controlling for husbands' alcohol consumption, the relationship was no longer significant. In another study of newlywed couples, wives' heavy drinking did not emerge as a significant predictor of husband aggression (Leonard, 1993). Taken together, there is mixed evidence for a relationship between female heavy drinking and male-perpetrated physical violence.

Other research has examined whether women's drinking is related to their own use of physical aggression toward their partners. One US study found that couples who reported any female alcohol-related problems were at significantly greater risk for female-to-male violence than couples who reported no alcohol-related problems (Cunradi et al., 1999). A secondary analysis of a national survey of youths aged 17 to 21 years (N = 808) found that there was a stronger relationship between heavy drinking and fights after drinking in females than in males (Wells et al., 2007). Another study conducted in the US found that among perpetrators of domestic violence and irrespective of racial background, 15 to 22 per cent of women who perpetrate violence against their partners reported drinking at the time of the event (Caetano, Schafer & Cunradi, 2001). These findings suggest that alcohol may also increase the risk for female-to-male physical aggression in women who drink heavily.

Taken together, there is evidence of an association between alcohol use and domestic violence, and that the level of alcohol use relates to the level of violence; however, the evidence regarding causation is certainly less clear cut.

Evidence relating to causality

In order to isolate factors predicting male-to-female marital violence, Leonard and Senchak, (1996) followed for one year a sample of 541 newlywed couples. They measured several plausible predictors of marital violence: alcohol problems and drinking levels; hostile disposition; masculinity-femininity; perceived power imbalance; history of family violence; and marital conflict style (problem-solving, verbal aggression and withdrawal). They took into account premarital aggression of the husband as well as controlling for socio-demographic and background factors of both partners (age, education, occupation, race-ethnicity, religion, employment and parental status). They carried out a series of regression analyses and concluded that higher levels of male-to-female marital violence could be predicted in the first year of marriage by the verbal aggressiveness of both partners; low withdrawal and high problem-solving conflict style of the husband; and where the husband was a heavy drinker. As pointed out by the authors, the findings from this study with regard

to 'low withdrawal' and 'high problem-solving conflict style' are counterintuitive because it may be expected that they would tend to improve family relationships.

From this research Leonard and Senchak (1996) suggest a number of plausible explanations for the association between intimate partner or marital violence and heavy alcohol consumption. They postulate that alcohol could lead to violence either because of (proximal) cognitive disruption induced by alcohol, or because intoxication is being used as an excuse for aggression. They suggest that violence could also result distally from the impact of the behavioural or neuropharmacological consequences of heavy alcohol consumption, e.g. hangovers, sleep deprivation, hypoglycaemia. Such explanations apply where alcohol is considered a cause of domestic violence. However, other explanations can be made for the association between marital violence and alcohol misuse. For example, intimate partner or marital violence may itself lead to increased levels of alcohol consumption and the persistence of alcohol dependence as a form of coping with relationship problems. Another explanation is that intimate partner violence and alcohol use disorders are both caused by a third factor, such as childhood learning/cultural factors, depression or biological factors.

Treatment studies provide some evidence of a causal relationship between alcohol use disorders and intimate partner violence. Stuart et al. (2002) conducted an individual-based treatment for alcohol-dependent women and their partners. At six and 12 months post-treatment, decreases were found not only in alcohol use, but also in wife victimisation, wife-to-husband marital violence, and wife-to-husband psychological abuse. In another treatment study, O'Farrell et al. (2004) examined partner violence before and after behavioural couples therapy (N = 303) for alcohol disorders in married or cohabiting alcohol-dependent males. The study showed significant decreases in the prevalence and frequency of male-to-female violence following treatment. These studies provide support for the notion that a causal relationship may exist between alcohol use disorders and intimate partner violence, but they do not exclude the possibility that other factors not assessed in these studies may account for the changes identified at post-treatment.

In contrast to the aforementioned treatment studies, a systematic review and meta-analysis by Gil-Gonzalez et al. (2006) found that the evidence regarding the association of alcohol use with domestic violence was weak and may be biased due to preferential publishing of studies with positive findings. They concluded that preventive policies for domestic violence that address alcohol disorders alone may not be justified. Further, a follow-up study of a randomly selected sample of nearly 1,400 married couples in the US could not demonstrate evidence of an interaction between alcohol abuse and inter-partner violence as a cause of marital separation after five years (Ramisetty-Mikler & Caetano, 2005).

In presenting the various arguments for and against the case that alcohol is a cause of domestic violence, Nicholas (2005) argued that alcohol can be shown to be a factor but not a major causal factor. Arguments for the notion of alcohol being a major causal factor often refer to a loss of control by the perpetrator due to the disinhibition, blurred judgement, and cognitive damage caused by alcohol abuse. However, such assertions can be contradicted by several arguments made by Nicholas (2005). In particular there is little evidence of perpetrators 'losing control' in any other aspect of their behaviour whilst drinking; e.g. they do not tend to be particularly drunk when battering their wives and they also aim for parts of the body where damage will not be visible to outsiders. Further, he argues that there is good

evidence that family violence does not require the presence of alcohol and, conversely, the presence of alcohol does not necessarily involve any violence. Thus alcohol is not a necessary or sufficient cause of domestic violence.

On the other hand, an Australian opinion piece by a clinical expert (McGregor, 1990) argues that the basic cause of family violence is the personality and belief systems of the perpetrator, and these better predict such violent behaviour. Thus internalised cultural norms and beliefs about male behaviour whilst drinking play an important role in actual behaviours. Research by Johnson (2001) provides support for this assertion. Her analysis of a large Canadian survey found that when acting out of negative attitudes towards women was entered into the equation, any association of alcohol abuse with domestic violence was nullified. Other factors found to predict domestic violence included a belief that it is sometimes acceptable to hit women, coming from a violent and substance abusing family, low income and education, a belief that alcohol causes violence, and a desire for personal power.

Conclusion

In an editorial on the impacts of alcohol use on inter-partner violence in the journal *Addiction* (Leonard, 2005), Kenneth Leonard concluded that violent episodes are no more likely to occur in the presence of alcohol, but when they do occur, they are associated with greater severity. Thus treating the alcohol problem may not reduce the incidence of violence, but it may reduce the harm associated with violent episodes.

Empirical evidence generally does not support the notion that alcohol abuse is a significant cause of domestic violence. In fact it can be argued that use of alcohol as a reason for violence encourages perpetrators and gives their victims a rationale for explaining and forgiving violent behaviour. Nonetheless, the finding that treatment targeting alcohol abuse is associated with reductions in domestic violence indicates that such treatment has utility. Overall, changes in the prevalence of violent behaviour will only come about once cultural and individual attitudes towards such behaviour are directly addressed. Thus it is recommended that treatment providers assess and treat both alcohol use and co-occurring aggression.

With regard to women, females who drink heavily appear more likely to engage in psychological abuse and physical aggression toward their male partners. However, the relationship is weaker than for male-to-female violence. There is some evidence that women who abuse alcohol may be at greater risk of victimisation by their male partner or husband; however, inconsistent findings mean that further research is needed to better understand this relationship.

4.3 Impact on family life and functioning

4.3.1 Communication problems and family cohesion

Families with an alcohol-dependent or abusing parent are often more troubled and dysfunctional than families not affected by parental alcohol problems. The home

environments of such families are characterised by communication problems such as deficits in problem-solving capabilities, low familial congeniality (Haber & Jacob, 1997; Jacob, Krahn & Leonard, 1991; Jacob, Leonard & Haber, 2001; Moser & Jacob, 1997) and poor family cohesion (Bijttebier, Goethals & Ansoms, 2006; Jester et al., 2000).

The communication problems of families affected by parental problem drinking have been documented in a number of studies using the Marital Interaction Coding System (MICS) (Jacob et al., 2001). Investigators videotaped discussions amongst family members, and then coded these discussions using the MICS. The MICS allows trained observers to classify verbal and non-verbal communication into four summary categories: positive, negative, problem-solving, and congeniality. The positive category consists of positive evaluations of the speaker in regard to other family members (e.g. agreement and approval). The negative category includes instances of negative evaluation (e.g. disagreement and criticism). The problem-solving category consists of efforts made towards discussing and resolving problems. Finally, the congeniality category reflects smiles, laughter and unrelated talking.

Results from studies that have used the MICS show that families affected by parental problem drinking exhibit more negative communication, less positive communication, less congeniality, and impaired problem-solving capabilities when compared with unaffected controls (Haber & Jacob, 1997; Jacob et al., 1991; Jacob et al., 2001; Moser & Jacob, 1997). These patterns have been documented in parent-child interactions, as well as in interactions between spouses (Jacob et al., 1991; Moser & Jacob, 1997).

Problems in communication also appear to differ as a function of parental characteristics other than drinking per se. For example, two studies examining the differential effects of parent gender found that families affected by maternal alcohol misuse exhibited higher levels of negative communication and lower levels of positive communication compared to both: (a) families affected by paternal problem drinking alone; and (b) controls (Haber & Jacob, 1997; Moser & Jacob, 1997). In another study, families affected by marital distress in conjunction with maternal alcohol misuse were shown to exhibit higher levels of negative communication compared to families independently managing maternal problem drinking or marital distress but not both (Kelly, Halford & Young, 2000). Studies have also found that in families where paternal drinking (with no concomitant maternal alcohol misuse) is accompanied by antisocial personality (Jacob et al., 2001) or aggression (Leonard & Roberts, 1998), communication is particularly impaired. Taken together, these results suggest that factors such as parent gender, marital distress, and both paternal antisocial personality and aggression might interact with parental alcohol misuse to compound impairments in family communication. However, no causal associations between these constructs have been established since none of the reported studies used longitudinal data, and there was insufficient control for a range of possible confounding variables.

It remains possible that other factors associated with both alcohol and communication problems (such as comorbid psychopathology, socioeconomic status, or education level) explain these findings. Jacob et al. (1991) attempted to identify impaired communication practices specific to families characterised by alcohol misuse by comparing families with an alcohol misusing father (without any concomitant disorder such as depression), families with a depressed father (without any concomitant alcohol use disorder), and families in which the father exhibited no psychiatric or alcohol related disorder (control). Lower rates of

congeniality and problem-solving in father-child discussions were identified in both the alcohol misusing and depressed groups relative to the control group. Jacob et al. (1991) therefore suggested that a general distress factor (that would account for both alcohol disorder and depression) may best explain impairment in parent-child communication, rather than something unique to alcohol use disorders per se.

There are, however, some important methodological limitations that hinder the interpretation of the findings described above. Sample sizes were often too small to achieve adequate power (range of experimental group $N = 15-50$) and response rates were low. Furthermore, very strict inclusion criteria were often necessary, such as the need for families to be intact, and the screening of problem drinkers with any evidence of comorbid psychological problems. These limitations preclude the generalisation of these findings to the total population of alcohol misusing parents.

Several other studies have examined the cohesion of families affected by parental alcohol misuse using the Family Environment Scale (FES). The FES is a self-report measure that consists of 10 scales, including the Family Cohesion Scale, which measures the feeling of support and togetherness within a family. Studies have administered the FES to caregivers and children in examining the impact of parental alcohol problems on family cohesion and organisation (Jester et al., 2000; Bijttebier et al., 2006). Both studies reported lower levels of family cohesion and organisation among families characterised by parental alcohol use problems (Jester et al., 2000; Bijttebier et al., 2006). These cross-sectional studies are unable to determine causality, providing two possible explanations: (a) that low cohesion families experience less support and vulnerable parents may be more likely to use alcohol as a maladaptive coping mechanism; or (b) that alcohol misuse creates additional stressors which interfere with maintaining trust, forgiveness and family cohesion (Scherer et al., 2012).

Another small study using the FES with Indigenous Australians ($N = 99$) found that despite alcohol predicting high family conflict and aggression, there was no association between family cohesion and alcohol misuse (Kelly & Kowalyszyn, 2003). Inconsistent findings between these studies may be the result of methodological limitations, including low sample sizes in the alcohol-affected groups, disparate cultural subgroups (i.e. Dutch families, African American women and Indigenous Australians), and the low reported internal consistency of the FES sub-scales in some studies (Bijttebier et al., 2006).

In summary, whilst parental alcohol use problems have been cross-sectionally associated with poor family communication and cohesion in a number of studies, no evidence of causality can at this stage be inferred based on the available literature. It would seem plausible that there may be a general distress factor among alcohol-affected families that contributes to poor communication and cohesion, but that this is not specific to alcohol-affected families alone. Prospective research on parental alcohol use disorders and family functioning is needed to untangle these complex pathways of influence.

4.3.2 Family violence

Families where one or both parents abuse alcohol are more likely than others to include yelling, insults and serious arguments between family members, making the home an

unstable environment for children (Kumpfer & DeMarsh, 1985; Sher, 1991). As part of the 2002 NSDUH, data were collected from 68,126 respondents on the number of children in the US living with substance-abusing or substance-dependent parents. Results indicated that parents dependent on or abusing alcohol in the past year were significantly more likely to report household turbulence than parents who did not have an alcohol use disorder (SAMHSA, 2004). This household turbulence was defined as frequent insults, yelling, serious arguments and threats of physical violence. In Scotland, 2.5 per cent of children (N = 24,302) are estimated to live in households where violence had occurred after the perpetrator had been drinking, and 1.2 per cent of children (N = 11,665) witnessed these acts of violence (Manning et al., 2009). Studies have also shown that children as young as six expect more verbal and physical aggression by an adult towards his/her spouse when the adult is thought to be intoxicated versus sober (El-Sheikh & Elmore-Staton, 2007). Exposure to family violence has been shown to have a range of effects on children's development, with both age and gender of the child being important; outcomes may include poor sleep and health, externalising and aggressive behaviours, and internalising behaviours and depression (Dawe et al., 2007).

Whilst these studies suggest that family violence may be a common feature of family life for individuals affected by alcohol use disorders, much of the current Australian research on problem drinking and family violence has focused on Indigenous and Torres Strait Islander Australians and their experiences. Non-Indigenous studies on family violence have tended to focus on intimate partner violence and child abuse, and are covered elsewhere in this review. The term 'family violence' is often used by Indigenous people to refer to a broader experience of violence than implied by the term 'intimate partner violence' (Stanley, Tomison & Pocock, 2003). This broader experience includes physical forms of violence, complemented by non-physical forms such as social, verbal, economic and psychological violence. This also includes a broader range of potential perpetrators and victims, including, for example, aunts, uncles, cousins, extended family members and the community more generally (Blagg, 2000). This definition reflects the fact that within Indigenous culture the victims and perpetrators of family violence may be an individual or a group, and that the term 'family' means 'extended family' which covers a network of interconnected and trans-generational kinship relationships (Memmott et al., 2001).

Reviews of family violence in Indigenous communities have shown that the incidence of violence is disproportionately high when compared with non-Indigenous communities, and that rates of violence are both escalating in frequency and becoming more serious in nature (Memmott et al., 2001). In 2002, the National Aboriginal and Torres Strait Islander Social Survey (NATSISS, N = 9,359) found that 21 per cent of Indigenous Australians aged 15 years and over reported that they felt family violence was a particular problem in their community; family violence was seen as more of a problem in remote areas and in overcrowded dwellings (ABS, 2004). Snowball and Weatherburn (2008) used this same dataset to reveal that within the Indigenous population, high-risk alcohol consumption doubles the rate of victimisation more than any other single factor, from 10.1 per cent to 20 per cent. Additional risk factors increased the likelihood of alcohol-related violence, such as being a member of the stolen generation or exposure to financial stress, unemployment, family breakdown and geographic or housing mobility (Snowball & Weatherburn, 2008). Family violence in Indigenous communities is also often disproportionately directed towards women, with Indigenous women 34 times more likely to be hospitalised for assault-related

injuries than non-Indigenous women (Bryant, 2009). Although some communities appear to be less violent than others, Aboriginal and Torres Strait Islander women from all communities identify violence as one of their greatest worries, and for many of these women this violence was associated with alcohol consumption by the offender (Bolger, 1991).

The 2004 NDSHS (N = 463) found that approximately 38 per cent of urban Indigenous Australians reported being victims of alcohol-related verbal abuse and 13 per cent were victims of physical abuse (Al-Yaman, Van Doeland & Wallis, 2006). Moreover, approximately 41 per cent of substance-related verbal abuse and nearly 20 per cent of substance-related physical abuse experienced by Indigenous people was reported as being perpetrated by relatives of the victims (Al-Yaman et al., 2006). Rates of Indigenous spouse or partner homicides are 13 times more likely to be alcohol-related than non-Indigenous intimate partner homicides (Dearden & Payne, 2009). Research indicates that within these communities alcohol is a common factor which exacerbates the seriousness of the conflict, rather than being the cause of violence (Memmott et al., 2001).

In their meta-analyses of the literature on family violence in Indigenous communities, Blagg (1999) and Memmott (2001) both identified multi-causal models in which alcohol was one of numerous situational factors underlying family violence. It has been suggested that the link between alcohol misuse and violence in Indigenous communities is related to the concepts of disinhibition, behavioural expectancies and 'allowing' violence to occur by providing a socially accepted excuse for it, rather than being a direct causal mechanism (Hennessy & Williams, 2001). For example, an individual may try to explain away antisocial behaviour by using phrases such as: "I was drunk, I couldn't help it", "I didn't know what I was doing", or "I don't remember" (Bolger, 1991; Memmott et al., 2001). In support, Australian research indicates that Indigenous offenders are significantly more likely to attribute their offending to alcohol than non-Indigenous peers (Putt, Payne & Milner, 2005).

Whilst family violence and problem alcohol use appear to be particular problems in Australian Indigenous communities, one is not a sufficient or necessary cause of the other. This is evident by the fact that not all Indigenous people who use alcohol become violent; while violence continues to occur in many alcohol-free Indigenous communities (Memmott et al., 2001).

4.3.3 Organisation and routine

Families with an alcohol abusing parent have poorer organisation compared to families unaffected by alcohol abuse (Tubman, 1993). This may be due to the fact that with increasing patterns of abuse, substance dependence becomes the central organising principle of the family at the expense of regular rituals and routines (Dawe et al., 2007). Family systems theories identify organisation and regular activities, such as routines and rituals, as the cornerstone of structure, predictability and stability for healthy families (Haugland, 2005). As a result, it is likely that the maintenance of organisation, rituals and routine may serve as a protective factor for families affected by parental problem drinking.

Empirical studies have indicated that problem drinking is commonly associated with disruptions to everyday family routines. In one Australian longitudinal study (N = 260 male

adolescents and their parents), fathers' heavy drinking was associated with rarely or never eating dinner at home together (Cumes-Rayner et al., 1992). Furthermore, 89 per cent of these sons reported that their families rarely or never spent evenings together, and 66 per cent reported that their families never or rarely spent weekends together. Cumes-Rayner and colleagues (1992) also found that families with heavy drinking fathers were more likely to have heavy drinking sons and more difficulty settling disagreements at home, and surmised that it was the sons who absented themselves from home activities rather than the fathers. In a Norwegian study of 23 families, Haugland (2005) found that paternal problem drinking was associated with disruptions to the structure of many every day events. These events included family routines and rituals associated with mornings, meal times, bedtimes, discipline, leisure activities and children's social contact with their peers. However, this effect was found to be largely displaced by the compensatory role of the non-problem-drinking mother, who usually worked hard to maintain the structure of usual routines and rituals.

Empirical studies of parental problem drinking and family rituals and routines have been limited by their exploratory nature, small sample sizes, lack of a control comparison group and their focus on paternal drinking. Considering the central role of the mother in family organisation, it is plausible that studies of maternal problem drinking, or families in which both parents abuse alcohol, may find stronger associations between parental problem drinking and disruptions to family organisation and routine. The extent to which these disruptions impact on both family life and children is also likely to vary depending on the presence of other risk factors such as marital conflict, family violence, separation or divorce, and ambivalent and unpredictable parenting.

Research suggests that unpredictability and instability associated with a lack of routines and rituals may contribute to maladjustment in children of problem drinkers, specifically, it may contribute to children's problem drinking in adult life, and an increase in anxiety-related health disorders. A cross-sectional study (N = 68 couples) showed that family ritual disruption is significantly associated with an increased risk of alcohol problems in adult offspring of problem drinkers (Bennett et al., 1987). Bennett and colleagues found that maintaining family rituals during periods of parental problem drinking appeared to protect children from developing problems with alcohol later in life (Bennett et al., 1987). However, in another study, Fiese (1993) found little evidence for an association between family rituals and alcohol problems in adult offspring of problem drinkers. Rather, a strong association was found between disruption of family rituals and an increased prevalence of anxiety-related health disorders in these children later in life. It is important to note that families dealing with problem drinking who are able to maintain routines and rituals may also be distinguishable from those who are not by other characteristics, such as lower levels of conflict, divorce or family violence (Fiese, 1993). These protective characteristics are also likely to contribute to child adjustment, and to mediate or moderate the relationship between child adjustment and a lack of routines and rituals associated with parental problem drinking. Protective factors for children of problem drinking parents will be discussed in more detail later in the chapter.

4.3.4 Financial strain

Anecdotal evidence suggests that money spent on alcohol is often not available for other purposes like housing, rent or school fees (Tunnard, 2002). Children dealing with parental problem drinking have spoken of the shortage of finances for clothes, food and bills, and of their own money being borrowed in times of financial need (Tunnard, 2002). Living conditions can also be poor, with large amounts of household financial resources directed towards the procurement of drugs and alcohol (Tunnard, 2002). Health complications commonly associated with alcohol abuse and dependence can also lead to medical costs which have the potential to further increase the financial strains on families dealing with such problems (Butterworth, 2003). To further compound these difficulties, alcohol problems are more common in low-income single parent families, meaning that additional financial pressures are commonly placed on families that have fewer economic resources to draw on (CASA, 2005).

Australian data from the 1997 NSMHWB suggest that lone mothers who receive financial assistance from the government are almost four times more likely than other mothers to report alcohol and other substance use disorders (Butterworth, 2003). Women on welfare who are dependent on alcohol or other drugs also report more barriers to employment than women on welfare who do not have a substance use disorder. Barriers to employability include domestic violence, mental health problems, legal problems, child welfare investigations and fewer job skills (Morgenstern et al., 2003). These barriers decrease the chances of alcohol- and substance-dependent women achieving the financial security often associated with stable employment. However, financial strains can also impact on the involvement of families in treatment because reduced or limited income often means that these families cannot afford to receive treatment in private or specialised facilities. Families where one or both parents have an alcohol-related problem may have reduced access to treatment, or access to treatment that is inadequate to deal with the cluster of problems that such individuals and their families typically experience (Mitchell et al., 2001).

Alcohol-related problems can also impede job performance, leading to reduced earnings or loss of employment (Booth & Feng, 2002). In one Australian study of children of parents who were engaged in a drug or alcohol treatment program in Victoria, it was found that 97.9 per cent of substance misusing parents were unemployed. Only 17 per cent of those unemployed were actively seeking work, and the 2.1 per cent who were employed were all employed on a part-time basis (Gruenert, Ratnam & Tsantefski, 2004). Of those families in the study, 92.8 per cent also reported an annual household income of less than \$20,000 (\$384 weekly) which primarily came from government social benefits payments (Gruenert et al., 2004). This is low compared to the median Australian household income of \$40,664 (\$782 per week) from the 2001 Census data (ABS, 2006). It is important to note, however, that the numbers in this clinical sample were small (N = 118, comprising 48 children and 70 members of their extended families) and only 27.1 per cent were seeking treatment primarily for alcohol. Another 48.9 per cent sought primary illicit drug treatment and had a secondary problem with alcohol. The sample also most likely represented the more severe range of drug and alcohol problems, with most of the adult participants having long histories of substance dependency. A high proportion of the sample reported poly-substance use (79.2 per cent), multiple rehabilitation attempts (70.3 per cent had accessed a detoxification service at least once), previous criminal offences (70 per cent), and low educational attainment (82.2 per cent had not completed Year 12) (Gruenert et al., 2004).

Large representative studies drawn from samples in the US have been more equivocal in their findings regarding the association between problem drinking and employment. Mullahy and Sindelar (1991; 1993), for example, found that problem drinking had a negative impact on employment for both men and women in a large representative sample (N = 23,805). A similar trend was identified in a later study (Mullahy & Sindelar, 1996); however, these results were not found to be statistically significant. Another study of problem drinkers found that there was no relationship between being an at-risk drinker and employment for women, and only a small positive relationship was detected for men (Feng et al., 2001). As these studies utilised cross-sectional designs it is possible that a range of other unmeasured characteristics may account for the relationship between employment and problem drinking. Such characteristics may include poor health status, low educational attainment or co-morbid psychiatric problems (Booth & Feng, 2002).

Results from a longitudinal study conducted in six southern states of the US (N = 658) found that individuals who indicated at initial interview that they drank seven or more drinks on an average drinking day were six times more likely to be unemployed than those who did not meet this criterion at the six month follow-up (Booth & Feng, 2002). Of those who were working at follow-up, individuals who drank seven or more drinks per day were less likely to be employed for as many weeks over a six month time period than participants who drank less. The effect of heavy drinking on employment was found to be as important as the influence of educational attainment, a major predictor of labour force status in most studies (Booth & Feng, 2002). This association between employment and heavy drinking was found after controlling for recent health status, negative life events and other drug use. Australian data from the 2007 NSMHWB survey support this finding, showing that participants who met criteria for alcohol abuse in the past 12 months were unable to perform, or had to cut down on, normal activities for an average of 2.4 days out of the past 30, while those with alcohol dependence reported 3.7 days out of role, compared to only 1.5 days for those with no alcohol use disorder (Teesson et al., 2010).

Epidemiological studies have also explored the relationship between income and problem drinking. Some studies have found positive relationships between alcohol consumption and earnings (Berger & Leigh, 1988), whilst others have identified negative relationships (Feng et al., 2001). It appears that the relationship between income and drinking depends on the pattern of alcohol consumption under examination. When the focus is on moderate drinking, it has been found that income increases are positively associated with alcohol consumption (Berger & Leigh, 1988). Moderate drinkers also appear to earn more than their non-drinking counterparts (Bryant, Sarnaranayake & Whilhite, 1993). However, when the focus is on problem drinking, as defined by DSM-III alcohol use disorders, increased alcohol consumption is associated with a significant reduction in earnings (Mullahy & Sindelar, 1993). However, as previously discussed, problem drinking is also related to employment. As such, problem drinking may affect income indirectly by reducing employment, rather than directly influencing the wages of workers (Feng et al., 2001).

Conversely, employment status may also have an influence on problem drinking. Life transitions such as getting married and becoming pregnant are shown to reduce problem drinking (as discussed elsewhere in this chapter). Becoming employed is also associated with a decrease in alcohol dependence, specifically for older males, which Verges et al. (2012) attribute to increased responsibility and structure. United States longitudinal data from the

National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) (N = 34,653) also revealed increased work stress and increased financial resources can lead to the onset and recurrence of alcohol dependence (Verges et al., 2012). This research suggests that the effects of alcohol on employment, and vice versa, are likely to vary as a function of age, sex and other life transitions/factors.

Clearly, the relationship between alcohol use and financial strain is multi-factorial. Financial strain has, for example, been associated with a range of other factors likely to affect family functioning including parental depression and negative parenting practices (Lyons, Henly & Schuerman, 2005), child abuse and neglect (Leventhal & Brooks-Gunn, 2000), and poor parent-child interactions (Schiffman, Omar & McKelvey, 2003). It is likely that the link between problematic alcohol use and financial strain is mediated by these kinds of factors. In support, a cross-sectional study by Peirce et al. (1994) using structural equation modelling (N = 1,424) found that depression mediated the relationship between financial strain and drinking to cope, and similarly, drinking to cope mediated the relationship between depression and alcohol consumption and problems (Peirce et al., 1994) In this study, financial problems were independently associated with both depression and alcohol use, with gender and race variables moderating the effect of these relationships. The direction of these relationships are not clear; for example, financial problems and alcohol use may be reciprocally related, where financial problems may increase depression and problem drinking in the short term, or where problem drinking increases financial difficulties and depression in the long term.

In summary, several lines of evidence suggest that families dealing with parental problem drinking face significant financial strains. Anecdotal evidence suggests that financial strains faced by families dealing with parental alcohol problems may be pervasive and severe. Financial strain may limit access to treatment facilities, and may also be compounded by alcohol-related medical costs. A variety of research evidence supports the relationship between problem drinking and lower income, on the one hand, and reduced employability, on the other; however, additional factors may be related to these associations rather than a direct causal link between drinking and financial status. Therefore, further multivariate research is needed to clarify the complex relationships between financial strain, alcohol use and other factors.

4.3.5 Social isolation

Problem drinking has been shown to have a major impact on the social life of families. Where a parent suffers alcohol dependence or problem drinking, spouses and children may be isolated and less able to obtain support from social and health care support systems. The value of community connectedness and social support for children is now recognised as a protective factor against the development of future problems (Gruenert et al., 2004). Community connectedness and social support can assist in the development of children's pro-social skills, enhance supervision, and promote positive self-esteem (Gilligan, 2000; Fuller, 2001). Social isolation may therefore act as a risk factor for the maladjustment of children dealing with parental alcohol misuse.

Tunnard (2002) suggests that children of problem drinkers have little time for social activities because of the increased caregiving responsibilities and household duties they often take on. Children of problem drinkers may also experience a feeling of shame about their

home circumstances (Boyd & Mackey, 2000), causing them to distance themselves from other children and from adults such as teachers, who otherwise may be able to offer social support (Tunnard, 2002). Children of problem drinkers also report more difficulties with peer relationships including fewer friends to socialise with, lower confidence in making friends, and avoidance by both their peers, and the parents of peers who discourage friendships with such children (Tunnard, 2002). Additionally, house, school and neighbourhood moves are often common for families of problem drinkers, making it difficult for children to establish and maintain social connections and to engage with their communities. In one study it was found that children of parents with severe drug and alcohol problems had attended approximately two different schools, and moved house over five times by the average age of 7.4 years (Gruenert et al., 2004). Extracurricular sporting and recreation activities can be a good source of social support for children; however, due to the financial strains often experienced by families dealing with parental problem drinking there may not be enough money to afford participation in these kinds of activities (Gruenert et al., 2004).

Psychosocial wellbeing is an important area of functioning that can be affected (both positively and negatively) by alcohol use. With regard to social/leisure functioning, there is fairly consistent evidence that older or elderly problem drinkers (both in and out of treatment) tend to have social/leisure problems in the form of loneliness and low social support (Schonfeld & Dupree, 1991), fewer social resources (Brennan & Moos, 1990), lower social integration (Hanson, 1994), lower satisfaction with social relationships (Meyers et al., 1982), social isolation, and fewer satisfying leisure activities (Graham, Carver & Brett, 1995). A recent longitudinal study of 8,271 adolescents provided supporting evidence that drinking predicted lower socio-emotional and academic functioning (Crosnoe, Benner & Schneider, 2012). However, the authors emphasised that the social context of drinking is significant in the socio-emotional functioning of adolescents, whereby teen drinkers felt marginalised within schools with dense networks of low-rate drinking. However, the inverse relationship has also been found, where high socialisation has found to be associated with increased drinking for male adolescents (Cumes-Rayner et al., 1992). This finding is also relevant for adults, where expectations of social effects of alcohol and peer-network heavy drinking were significant predictors of both husbands' and wives' own heavy drinking (Leonard & Homish, 2008). Thus, it appears that the social context and expectancies of drinking rather than alcohol use per se are associated with negative impacts on individuals and families.

The low population density in rural Australia means that many of these Australians are faced with social isolation. Whilst the potential for social isolation is likely to vary between rural areas, individuals in these areas are at greater risk of social isolation due to the barriers involved in getting together with others. NDSHS data from 2010 indicate that people living in remote or very remote areas were more likely to drink at high levels for lifetime risk (30.5 per cent compared to 18.6 per cent in major cities) and also for single occasion risk (25.8 per cent compared to 14.9 per cent in major cities) (AIHW, 2011a).

Australia's Indigenous population is also over-represented in remote areas. The Indigenous population comprises one per cent of the major cities population, eight per cent of regional areas population and 58 per cent of remote areas population (AIHW, 2006). Alcohol abuse in remote Indigenous communities has been associated with family problems as discussed

earlier in this chapter (Kowalyszyn & Kelly, 2003), and the effects of problem drinking are also likely to be compounded by a lack of access to health and welfare services (Lester, 1994). Surprisingly, data from the 2004/05 National Aboriginal and Torres Strait Islander Health Survey (AIHW, 2011b) revealed that Indigenous adults in remote areas were more likely to have abstained from alcohol consumption in the previous 12 months than those in non-remote areas (38 versus 19 percent). The dates of this survey mean this finding cannot be attributed to the restrictions on alcohol supply in some Indigenous communities which occurred after 2008 (Elliott et al., 2008; Fitzpatrick et al., 2012).

The difficulties of sampling and research in remote areas and the lack of representation in epidemiological studies, as previously discussed, warrants further investigation to understand the association between alcohol consumption and family problems in remote and rural communities.

4.4 Comorbid mental health and substance use disorders

4.4.1 Prevalence and research on comorbid disorders

The co-occurrence of alcohol use disorders with other substance use disorders and with psychological illnesses, including depression, anxiety, psychosis and antisocial personality disorder, is frequently reported in epidemiological studies (e.g. Burns & Teesson, 2005; Jablensky et al., 2000; Kessler et al., 1997; Teesson et al., 2000; Teesson et al., 2010). Those with comorbid disorders often have poorer treatment outcome and worse course of illness over time. This increases the risk of family problems and negative consequences on both parents and children through increased impairment, social disability and burden of disease (Hall, Degenhardt & Teesson, 2009). Many of the effects of parental alcohol use may also be explained by mental health problems, which pose a significant challenge for identifying causal relationships. It is important to understand the implications of comorbidity to explicate alternative factors that may account for associations between alcohol use and family functioning.

The 2007 NSMHWB (Teesson et al., 2010) provides national Australian data on the prevalence of comorbid alcohol use disorders (using DSM IV criteria) with mental disorders among Australian men and women, aged 16 to 85 years (N = 8,841). Results of the survey indicated that in the previous 12 months, those with alcohol use disorders were over four times more likely to have a comorbid mental disorder than those without an alcohol use disorder. Of these, 20 per cent of all respondents with an alcohol use disorder met criteria for one comorbid mental health disorder in the previous 12 months and 22.3 per cent met criteria for two or more other disorders. Most commonly the secondary diagnosis was an anxiety disorder (30.3 per cent) or other drug use disorder (16 per cent). Almost half (42.3 per cent) of those in Australia with an alcohol use disorder experienced mental health issues during the 12 months prior, compared with only 14 per cent of the sample who had any mental disorder but did not meet criteria for an alcohol use disorder (Teesson et al., 2010). Furthermore, those with alcohol dependence were three times more likely to have comorbid disorders than those with alcohol abuse.

The available international evidence also suggests that comorbidity is equally common among people who are parents or who have significant responsibility for the care of children.

Clinical studies of alcohol-dependent or abusing parents have consistently demonstrated elevated levels of depression, anti-social personality characteristics and general psychopathology compared with non-alcohol-dependent or abusing parents (e.g. Eiden, Chavez & Leonard, 1999; Giunta & Compas, 1994; Neff, 1994; Zucker et al., 1996). Few general population studies on comorbidity have specifically examined comorbid substance use in parents. However, statistics from the 2002 NSDUH show that in the US, parents who reported alcohol dependence or abuse in 2001/02 were significantly more likely to have smoked cigarettes or used illicit drugs than parents who were not dependent on or had not abused alcohol (SAMHSA, 2004).

In Australia there has been increasing awareness of the issue of dual diagnosis in parents (Hegarty, 2004). Data show that comorbidity is common among parents of children in the child protection system (Ainsworth, 2004; Hegarty, 2004). Statistics from the Department of Human Services (DHS), Victoria show that among parents who reported alcohol abuse problems in 2000/01, 51 per cent also reported other substance abuse problems, and 18 per cent also had a psychiatric disability (DHS, 2002). Similarly, a parenting report from the DHS (2003) found that in 2001/02, 62 per cent of parents with children in the welfare out-of-home care system who reported a psychiatric disability also reported a substance abuse problem, an increase from 50 per cent in 1997/98. To date, however, there are no community data available on the prevalence of comorbid alcohol and mental health or substance use disorders in Australian *parents*.

There are several possible reasons why comorbidity occurs. First, it has been postulated that there is a direct causal relationship between these disorders, with the presence of one disorder making the other more likely. For instance, a lack of effective or available treatments for alcohol use disorders may contribute to the finding that only one in five Australians seeks treatment (Teesson et al., 2010). Left untreated, alcohol abuse may lead to higher levels of mental illness and other substance abuse by contributing to the inception, recurrence or persistence of these mental disorders. Mental health disorders could also lead to increased levels of alcohol consumption and the persistence of alcohol dependence as a form of self-medication, or to relieve anxiety and stress (Hall et al., 2009). Alternatively, it is possible that an indirect causal relationship exists, with one disorder affecting a third variable in a way that increases the likelihood of the second disorder. For example, the presence of early alcohol use problems may reduce the likelihood of successfully completing secondary and tertiary education. Difficulties encountered due to poor educational attainment might then increase the risk for other problems such as depression. Alternatively, it has been postulated that there might be common determinants, environmental or genetic, that increase the risk for both alcohol use disorders and other mental health disorders (Hall et al., 2009). Recent reviews provide increasing evidence that the simple causal hypotheses may not wholly explain the association. There is growing evidence from both longitudinal cohort and twin studies that alcohol use disorders share many common risk factors and life pathways with other substance use and mental health problems, and that these common risk factors may explain the association (e.g. see Degenhardt, Hall & Lynskey, 2003; Teesson et al., 2005a; Teesson et al., 2005b).

4.4.2 Poly-substance use

Poly-substance use is highly prevalent amongst those with alcohol use disorders and

compounds the potential negative effects of parental drinking on family functioning. As examples, an Australian population study has shown that those diagnosed with an alcohol use disorder are 10.5 times as likely to have a cannabis use disorder (Burns & Teesson, 2002) and US data indicate that those with an alcohol use disorder are 36.3 times as likely to have a cocaine use disorder (Regier et al., 1990). Longitudinal research in the US supports the notion that these disorders may be causally related. The NESARC study (N = 34,653) followed up participants after three years and determined that the presence of alcohol abuse and drug abuse at baseline predicts alcohol dependence and drug dependence respectively (Grant et al., 2009). However, this study did not look at the relationship between alcohol and illicit drug use. The research on these associations has been limited by lack of reporting of illicit drug use in the population and the tendency to exclude participants with comorbid substance use from clinical treatment studies (Teesson et al., 2012).

As a result of the paucity of prospective studies the potential direction of any causal relationship is not known. Some theories suggesting that licit drug use, i.e., alcohol and tobacco, may begin a progression of drug use ending in illicit drug use, or alternatively that illicit drug use may increase the likelihood of alcohol and tobacco use and dependence. A third possibility is that comorbidity between substance use disorders may be attributable to shared genetic predispositions and family environment which increases the chances of alcohol and drug use disorders (Hall et al., 2009). These genetic and environmental factors could also account for the high rate of alcohol use in children of parents who experienced problem drinking.

4.4.3 Affective and anxiety disorders

Teesson et al. (2010) examined the prevalence of comorbidity between alcohol use disorders and anxiety disorders using the 2007 NSMHWB data. Australians with an alcohol use disorder were found to be almost three times more likely to be diagnosed with an anxiety disorder than those without an alcohol use disorder and 3.5 per cent of the sample met criteria for combined affective, anxiety and substance use disorder (Teesson, Slade & Mills, 2009). The odds of agoraphobia and obsessive-compulsive disorder were both significantly increased in respondents with an alcohol use disorder. Burns and Teesson (2005) reported that the co-occurrence of alcohol dependence and anxiety-related disorders (such as post-traumatic stress disorder, panic disorder and social phobia) was related to both increased severity of alcohol dependence symptoms and increased treatment seeking.

An Australian private hospital drug and alcohol treatment sample (N = 104) revealed that comorbid disorders were not significantly related to treatment attendance or self-report measures of substance use (Dingle & King, 2009), where 92 per cent of the sample met diagnoses for at least one other mental disorder, including major depression, generalised anxiety, and borderline personality disorder (BPD). Further evidence indicates that it was the severity of depression symptoms at the nine-month follow-up which significantly predicted fewer days abstinent from substance use in the past 30 days (Dingle & King, 2009). Conversely, substance use has also been shown to increase the risk of affective disorders. Ross and Dennis (2009) conducted a meta-analysis of 17 published studies, which revealed that substance-using women reported significantly higher rates of postpartum depression than control subjects, indicating that prenatal substance use predicted postpartum depression

symptoms. However, the authors acknowledge that this relationship may be mediated by other socio-demographic risk factors.

While there has been consistent support for the relationship between anxiety disorders and alcohol use disorders, these datasets offer conflicting evidence for the relationship between alcohol use and affective disorders. The 2007 NSMHWB study found that those diagnosed with an alcohol use disorder were no more likely than the rest of the sample to meet criteria for a comorbid affective disorder such as depression or bipolar disorder (Teesson et al. 2010). In contrast, the previous survey in 1997 found that those with an alcohol use disorder were four times more likely to have an affective disorder (Burns & Teesson, 2002). The cross-sectional nature of these epidemiological studies means it is difficult to determine why these results differ. These conflicting results may be attributed to changes in the comorbidities of these disorders over time, or they may also suggest increased efficacy of treatment for those with affective disorders, but not for those with anxiety disorders.

4.4.4 Psychotic disorders

The 1997 NSMHWB provided data on the Australian prevalence of psychotic disorders such as schizophrenia, schizoaffective disorder and bipolar disorder. Although the one-month prevalence of these psychotic disorders is low at 4.7 per 1,000 in an urban population, this sample shows significantly increased rates of lifetime alcohol abuse or dependence, with 38.7 per cent of men and 17 per cent of women diagnosed with a psychotic disorder also meeting criteria for lifetime alcohol use disorder (Jablensky et al., 2000). These figures are high when compared to 9.4 per cent of men and 3.4 per cent of women abusing alcohol in the general population, as reported in the 1997 NSMHWB (Hall et al., 1998). People with a psychotic illness are four times more likely to abuse alcohol than the general population and 30 per cent of respondents had a lifetime diagnosis of alcohol use disorder (Jablensky et al., 2000). The odds of alcohol dependence increase 1.5 times with each psychotic symptom reported (Degenhardt, 2003).

International studies also provide evidence for significant comorbidity between alcohol use disorders and schizophrenia. The Epidemiological Catchment Area Study (ECA) (Robins & Regier, 1991), a large population based epidemiological study conducted in the US (N = 20,291), reported a life time prevalence for alcohol dependence of 34 per cent in people suffering schizophrenia (Regier et al., 1990). Studies have shown that alcohol use disorders in this group are usually, but not always, secondary to the onset of schizophrenia (Soyka, 2000).

4.4.5 Personality disorders

Epidemiological data from the US such as the ECA, NESARC, and the National Comorbidity Survey (NCS) a nationally representative household survey conducted in the US (N = 8,098), show that personality disorders also commonly co-occur with alcohol use disorders (Grant et al., 2008; Helzer & Pryzbeck, 1988; Kessler et al., 1997). NESARC data indicate that for those who met lifetime criteria for BPD, 58.3 per cent also met a lifetime diagnosis of an alcohol use disorder (Gianoli et al., 2012). While the causal links or factors associated with these comorbid disorders is not well known, BPD traits are predictive of future problems with alcohol use, and poor prognosis is observed for those with comorbid

BPD and alcohol use disorder compared to those with only one disorder (Gianoli et al., 2012). Past 12-month alcohol dependence was reported in 18 per cent of cases and 50.7 per cent reported substance use in the past 12 months, with greater prevalence amongst men with BPD compared to women (Grant et al., 2008). When comorbidity was controlled for, alcohol dependence remained significant but any association with alcohol abuse disappeared, suggesting that these associations may be accounted for by factors common to both disorders.

Similarly, parental antisocial personality disorder (ASPD) and trait characteristics also appear to be important in the relationship between parental alcohol dependence and family functioning. Zucker et al. (1996) conducted a study in which alcohol-dependent fathers (N = 311) were subtyped according to whether they had a high-level history of antisocial behaviour during both childhood and adolescence or no sustained history of antisocial behaviour. The researchers hypothesised that family risk would be greatest when the parents' psychopathological risk structure had been in place across the lifespan. Results revealed that antisocial alcohol-dependent fathers have denser family histories of alcohol use disorders, lower intellectual functioning, and significantly higher levels of non-alcohol-related psychopathology compared to non-antisocial alcohol-dependent fathers (Zucker et al., 1996). Antisocial alcohol-dependent parents were also shown to display more aggressive behaviour and conflict, and were lower in socioeconomic status than were the non-antisocial alcohol-dependent parents and the control group.

Moss et al. (2001) compared mother-reported psychiatric disorders and problem behaviour scores in pre-adolescent children with antisocial alcohol-dependent fathers, non-antisocial alcohol-dependent fathers, and children whose fathers were without either disorder (N = 639). Children from the antisocial alcohol-dependent group showed elevated rates of major depression, conduct disorder, attention deficit hyperactivity disorder (ADHD), oppositional defiant disorder and separation anxiety disorder when compared to both other groups of children. These children also had higher internalising and externalising problem behaviour scores than the other two groups of children; there were no significant differences between children with non-antisocial alcohol-dependent parents and controls. Hussong and colleagues (2007) integrated the analyses of two independent longitudinal studies (N = 1,050 adolescents and at least one or both of their parents), which used a high risk design to assess children with subtypes of alcohol-dependent parents (alcoholism only, alcoholism and depression, and alcoholism and ASPD) and compared them with depressed parent-only controls on their externalising behaviours, measured by the aggressive and delinquent behaviour sub-scales on the Child Behaviour Checklist and Youth Self Report. Consistent with the aforementioned findings, children whose parents were both diagnosed with alcohol disorders and those whose parents had comorbid alcohol use disorder and depression were found to exhibit greater externalising symptoms than children whose parents were only diagnosed with depression. Hussong et al. (2007) discuss this as evidence for an inter-generational susceptibility for developing antisocial characteristics with a risk of later development of adult alcoholism.

4.4.6 Impacts of comorbidity on families

While the nature of the temporal and causal relations between alcohol abuse and other

mental illnesses are complex, there is overwhelming evidence for the negative effects of comorbidity. Comorbidity is associated with more severe symptoms of alcohol dependence and significantly increased disability in everyday functioning (Burns & Teesson, 2002; Burns & Teesson, 2005). Comorbidity is also associated with severe illness course, greater service utilisation, non-compliance with treatment regimes and high rates of re-hospitalisation. Alcohol use disorders complicated by other drug and mental health disorders, and vice versa, have been recognised as having poorer prognosis than those without such comorbidity (Burns & Teesson, 2002; Drake & Mueser, 2002; Teesson & Proudfoot, 2003; Hall et al., 2009).

To date, most studies on the effects of parental alcohol and mental health problems on children and family life have proceeded in isolation from one another; however, a small body of research has examined the impact of both alcohol and other comorbid mental health disorders. For example, Ohannessian and colleagues (2004) examined the relationship between parental alcohol dependence with and without comorbid psychopathology, and adolescent psychopathology, using a sample of 13 to 17-year-old adolescents and their parents ($N = 665$). Results indicated that parent comorbid psychopathology had a considerable impact on adolescent adjustment. Adolescents who had parents diagnosed with alcohol dependence and either comorbid drug dependence or depression were significantly more likely to exhibit higher levels of psychological symptomatology than adolescents whose parents reported alcohol dependence only, or depression only. Moreover, adolescents whose parents were diagnosed with alcohol dependence and depression as well as drug dependence were most likely to exhibit psychological problems. The results suggest that much of the existing literature on children of parents with alcohol use disorders may be a result of comorbidity rather than parental alcohol use alone; however, in many of these studies comorbidity is not controlled for (Ohannessian et al., 2004).

Eiden et al. (1999) examined the role of parental comorbid psychopathology in a study on the links between father's alcohol dependence and parent-infant interaction quality ($N = 204$). The study found that paternal alcohol dependence was associated with other risk factors for the father, including depression, antisocial behaviour and family aggression. Fathers' depression was found to mediate the relationship between paternal alcohol dependence and lower paternal sensitivity during parent-infant interactions. Similarly, maternal depression mediated the relationship between maternal alcohol problems and lower sensitivity resulting in more negative parent-infant interactions. Although only a small number of problem-drinking mothers were included in the sample, these results suggest that the co-occurrence of alcohol use disorders and other mental health problems are likely to negatively impact on children early in life.

In summary, the specific ways in which comorbidity impacts on family life are likely to vary as a function of the type and severity of comorbid mental health problem experienced by a parent. What is clear, however, is that families where one or both parents suffer comorbid mental health and alcohol use disorders are at high-risk for a range of negative outcomes. It is likely that many of the harms discussed in this review, such as family conflict and violence, economic difficulties, disruptions to parenting, and mental health problems in children, are worse within the context of comorbid mental health problems. Given that the majority of people dependent on or abusing alcohol typically report at least one additional lifetime psychiatric disorder, further research is needed in Australia to ascertain the prevalence of

parents suffering comorbid mental health and alcohol use problems, and the specific impacts of parental comorbidity on family life.

4.5 Impact on parenting

4.5.1 Disrupted parenting

Research indicates that parenting is often disrupted in families where one or both parents are problem drinkers. Theory suggests that alcohol interferes with a parent's ability to be consistently warm, supportive and available during parent-child interactions (Jacob & Leonard, 1994). It has also been posited that stressful environments and other factors such as parental psychopathology, socioeconomic disadvantage and social isolation, may contribute to the risks for both alcohol use and disrupted parenting (Dawe et al., 2007). Disrupted parenting subsequently impacts negatively on the quality of the parent-child relationship, which is thought to be the foundation of effective parenting. In this way, specific parenting practices and the quality of the parent-child relationship have been proposed to be closely interrelated (Dishion & McMahon, 1998).

Cross-sectional studies show that family environments where one or both parents abuse alcohol may be characterised by lack of stability and consistency in parenting (Windle, 1996; Johnson & Leff, 1999), lack of parental warmth and nurturance (Hayes et al., 2004; Jacob & Leonard, 1994), attachment problems between parents and children (Eiden et al., 1999; Eiden, Edwards & Leonard, 2002), and poor monitoring and socialisation (Guo et al., 2001). Increasing evidence from prospective studies also suggests that parental alcohol abuse and dependence have a negative impact on a range of parenting practices (Eiden et al., 2002; Guo et al., 2001; Hayes et al., 2004). The recent empirical literature on the relationship between alcohol use disorders and disruptions in parenting is reviewed below.

Lack of parental nurturance

Parental nurturance, or support, has been identified as a salient influence on childhood and adolescent outcomes, especially with regard to adolescent alcohol use and mental health outcomes (Jacob & Leonard, 1994; Hayes et al., 2004). Parental nurturance is characterised by parenting behaviours that demonstrate caring and acceptance of the child and may include such things as being actively involved in the child's life and encouragement of the child's activities. Deficits in parental support are common in parents who drink heavily, and have been linked both cross-sectionally and longitudinally to a number of negative outcomes in children, including adolescent substance abuse (Chassin et al., 1999; Johnson & Leff, 1999; Lynskey, Fergusson & Horwood, 1994).

Parent-infant attachment stability and the quality of interactions between parent and child overlap to some extent with the construct of parental nurturance. This literature is discussed in the following two sections focusing on infant attachment and parent-infant relationships to examine parental nurturance in families where one or both parents abuse alcohol.

Parent-child interaction problems and infant attachment insecurity

A small body of research has explored the nature of parent-child interactions and infant attachment security in alcohol-abusing or alcohol-dependent fathers and their families. Both cross-sectional and longitudinal studies show that parent-child interactions and infant attachment security are frequently disrupted in families affected by paternal alcohol problems, particularly when multiple risk factors are present, including parental depression, antisocial behaviour and family conflict, and aggression (Eiden et al., 1999; Eiden et al., 2002). Infants in families with two parents with an alcohol problem have been demonstrated to have significantly higher rates of insecure attachment with both parents (Eiden et al., 2002). Changes in parenting style during active substance use have also been shown to result in many parents becoming irritable, intolerant, inattentive and demonstrating unpredictable behaviour and mood swings. The children experiencing these parental behaviours often became socially withdrawn and hypersensitive to their parents' moods (Dawe et al., 2007).

Using a prospective design, Eiden et al. (2004) examined the nature of parent-infant interactions in families (N = 222) affected by alcohol abuse across time. The study compared parent-child interactions among high-risk families characterised by paternal alcohol dependence, with a demographically matched non-alcohol-dependent control group. Assessments were conducted at 12, 18 and 24 months of child age. The quality of parent-infant interactions was assessed by the level of positive paternal and maternal involvement, sensitive responding and positive/negative effect. The level of infant responsiveness was determined by the level of child positive/negative effect and responsiveness to parental behaviour. Results indicated that higher paternal alcohol consumption at 12 months prospectively predicted both negative paternal and maternal behaviour at 24 months. The direction of influence for both mother-infant and father-infant interactions was from parent to child; infant behaviour was not shown to predict parental behaviour across time. These findings suggest that one important pathway to risk in children of alcohol-dependent fathers is through negative parent-infant interactions.

In another study on this sample (N = 217), Edwards, Eiden and Leonard (2004) examined the relationship between paternal alcohol use disorders and consistency of infant attachment security from 12 to 18 months infant age. The study found that higher paternal and maternal alcohol symptoms, maternal depression and maternal antisocial behaviour were characteristic of families with insecure mother-infant attachment from 12 to 18 months. The study also examined the quality of parent-infant play interactions relative to consistency in insecure attachment classification. Results indicated that mother-infant insecurity was associated with higher levels of maternal negative affect during play interactions. Similarly, father-infant stable insecurity was associated with lower levels of paternal positive affect and decreased sensitivity during play interactions. The study indicated that infants who were classified insecure at both time points had the highest constellation of family risk characteristics, including parental alcohol use.

Taken together, these studies indicate that the origins of risk for later maladjustment among children of alcohol-dependent fathers may be detectable in infancy. These findings suggest that an important pathway to risk in children of alcohol-dependent fathers is through negative parent-infant interactions. Negative parent-infant interactions were also shown to be associated with persistent patterns of insecure mother and father-infant attachment across

time, providing further support for the theoretical link between parent-infant interactions and attachment security (De Wolff & van Ijzendoorn, 1997). These studies highlight that children at greatest risk are those from families in which there is a constellation of family risks, and that many of these factors exert their influences in indirect ways. Further longitudinal research is needed to understand the complex links between parental alcohol problems, parent-infant interactions, infant attachment style, and other early risks.

Parent-child relationship problems

Given that parent-infant attachment insecurity, parent-child interaction problems, and low nurturance are linked to parental alcohol use, it is perhaps not surprising that parent-child relationship problems are also common. A number of parent-child relationship difficulties have been noted in the literature as occurring more frequently among families with an alcohol abusing parent including increased conflict, increased family stress, emotional or physical violence, decreased family cohesion and lack of organisation (Johnson & Leff, 1999; Timko, Kaplowitz & Moos, 2000). Additionally, studies have found that families characterised by parental alcohol misuse interact in a more negative way (defined by the use of criticism and disagreement), when compared to families with no parental alcohol misuse (Moser & Jacob, 1997).

Timko and colleagues (2000) conducted an eight-year follow-up study (N = 466), which examined child-parent relationships among families where either the mother or father had entered a detoxification program for problem drinking at baseline. The results of this study identified an important gender difference. Specifically, greater relationship satisfaction for mothers with their child at baseline, one year and three years, was related to lower alcohol consumption and an improved psychological state at the subsequent follow-ups (Timko et al., 2000). Fewer and less consistent associations were identified in child-father relationships, despite comparable levels of drinking problem severity at baseline. These gender differences indicate that different intervention strategies may be needed; where family-oriented interventions may work best for problem-drinking mothers, fathers may do better if interventions are designed directly at alleviating the problem drinking (Timko et al., 2000).

The quality of parent-child relationships has been shown in longitudinal studies to be associated with poorer adolescent outcomes, including adolescent drinking, both directly (Bray et al., 2001) and indirectly, through the impact on parental monitoring and the development of deviant peer associations (Ary et al., 1999a; Ary et al., 1999b; Barnes et al., 2000; Essau & Hutchinson, 2008). Positive parent-child relationships have been shown to have a protective effect on children's drinking behaviour, with delayed alcohol initiation and reduced levels of later drinking observed (Ryan, Jorm & Lubman, 2010). The literature on poor parental monitoring will be discussed in the following section.

Poor monitoring and socialisation

Parental monitoring encompasses a number of behaviours, including parental awareness and supervision of adolescent activities, which may involve friendship groups, school or their behaviour at home (Essau & Hutchinson, 2008), as well as establishing firm but supportive

behavioural limits and boundaries (Dawe et al., 2007). Parental monitoring also refers to the ability of the parent to communicate their concern for, or their awareness of, the above activities to the adolescent (Essau & Hutchinson, 2008). Poor parental monitoring is characteristic of families affected by parental alcohol misuse because they often lack parenting and family communication skills (Johnson & Leff, 1999). Findings from the Seattle Social Development Project indicated that permissive parental monitoring at child age 10 years was an important predictor of alcohol abuse and dependence at age 21 years (Guo et al., 2001). This longitudinal study of 808 students found that even after both externalising and internalising behaviours (at 10 years of age) were controlled for, close parental monitoring predicted lower risk for alcohol abuse and dependence at 21 years of age (Guo et al., 2001). Other longitudinal studies have demonstrated similar results, indicating the importance of establishing and maintaining close parental monitoring during childhood and adolescence (Ary et al., 1999a; Ary et al., 1999b; Barnes & Farrell, 1992; Barnes et al., 2000; Guo et al., 2001; Simons-Morton & Chen, 2005; Thomas et al., 2000).

Alcohol abusing and alcohol-dependent parents also tend to engage in fewer family activities with their children (Johnson & Leff, 1999). A longitudinal twin study (N = 4,731) found that parent socialisation (i.e., the degree to which parents and children engage in shared activities) influenced adolescent alcohol use indirectly through the development of negative parenting practices (Latendresse et al., 2008). Frequencies of parental alcohol use and intoxication were negatively associated with adolescents' perceptions of shared activities and monitoring, and positively associated with perceived relational tension and discipline. Poor monitoring was linked to increased adolescence drinking at age 14 years, while increased discipline was associated with adolescent drinking at age 17.5 (Latendresse et al., 2008). Additionally, a study of families in which parental alcohol abuse was a problem, found that parental drinking produced repeated disruptions to family routines in a range of settings, including dinner, bedtime, discipline practices and leisure activities (Haugland, 2005). Disruptions were typically found in respect to the fathers' participation in routines, and were seen to create an unpredictable environment for the children involved, which weaken family cohesion (Haugland, 2005).

Parentification

The literature on alcohol use disorders and family functioning has highlighted the accommodating roles that family members may take on to protect and compensate for the alcohol-dependent parent. Evidence suggests that parents who abuse alcohol sometimes abdicate their parenting roles, leaving children to take on roles and responsibilities that are inappropriate for their age (Chase, Deming & Wells, 1998; Dawe et al., 2007; Godsall et al., 2004; Kelley et al., 2007). The behaviours of family members close to an alcohol-dependent parent have often been described as 'co-dependent' because the family organises around the needs or demands of the dependent parent. In taking care of an alcohol-dependent parent, children may demonstrate a range of parentified behaviours, from overt physical care of the parent, to covert methods of caretaking demonstrated by emotionally comforting or protecting the parent, in addition to taking care of younger siblings.

Chase, Deming and Wells (1998) examined 360 young adult children of alcohol-dependent parents in terms of their perceptions of having assumed a parentified role in their family.

Respondents who had an alcohol-dependent parent scored higher on the Parentification Questionnaire, a measure of caretaking responsibility, than peers who were either children of problem drinkers or children of non-alcohol-dependent parents. Retrospective studies have also identified an association between parentification and parental alcohol misuse (Kelley et al., 2007), with gender differences revealing that daughters of alcohol-misusing mothers reported greater parentification than daughters of alcohol-misusing fathers.

Despite these findings, it has not been established whether these parentified behaviours develop as a consequence of parental drinking, or whether they result from other problems in parenting and family functioning that co-occur with parental alcohol abuse and dependence. Parentification has been observed in studies of both parental drinking and also marital aggression and conflict, suggesting that there could be common determinants of these behaviours (Keller et al., 2011). Additionally, although the negative consequences of parentification have been documented, there are suggestions in the literature that parentification can have positive effects in terms of developing a sense of competence and self-concept, conditional upon the parent offering support and positive feedback (Barnett & Parker, 1998; Godsall et al., 2004). Parentification is a complex phenomenon, however, and the effects, whether positive or negative, are dependent on a range of individual, situational and family factors (Barnett & Parker, 1998; Chase et al., 1998).

Child abuse

The empirical literatures on parental alcohol use disorders and child abuse have generally proceeded in isolation from each other. However, there is an increasing body of research indicating that parental drinking problems are associated with child emotional, physical and sexual abuse. Studies of clinical, substance abuse, support group and convention samples have identified elevated rates of childhood sexual and physical abuse in adults who also reported parental alcohol abuse or dependence in childhood (Ackerman & Gondolf, 1991; Kerr & Hill, 1992; Kotch et al., 1999; Windle et al., 1995).

Alcohol use disorders have been shown to occur at particularly high rates among parents of children who enter child protection services in Australia (Ainsworth, 2004; Ainsworth & Summers, 2001; Laslett et al., 2010; Laslett, Dietze et al., 2012a; Tomison, 1996). Estimates based on Victorian child protection cases indicate that up to a third of all parents involved in substantiated child abuse or neglect cases in Australia in 2000/01 experienced alcohol abuse (Dawe et al., 2007). Tomison (1996) reported on a large-scale tracking study of suspected child abuse and neglect cases (N = 295) involving a number of agencies in a Victorian regional child protection network. A valid case of child abuse or neglect was defined as any suspected case of child abuse or neglect where there was sufficient concern to investigate, refer and/or treat or counsel the child. Results indicated that in 25.8 per cent of suspected cases of child maltreatment, workers identified at least one caregiver in the family as having an alcohol problem. Further analyses indicated that an alcohol problem was identified in 40 per cent of physical abuse cases, 31.3 per cent of emotional abuse cases, 28 per cent of neglect cases, and in 16.9 per cent of sexual abuse cases. Additionally, a report by the Department of Community Services estimated that during the 2004/05 reporting period up to 80 per cent of child protection reports involved drug or alcohol abuse (Burke, Schmied & Montrose, 2006).

National statistics on child maltreatment also show that Aboriginal and Torres Strait Islander children are significantly overrepresented in most statutory child protection reports of abuse or neglect (Stanley et al., 2003). Based on notifications to child protection departments around Australia in 2001/02 (AIHW, 2003), 3,254 Indigenous children under 17 years had some form of abuse substantiated. This rate of substantiation was on average 4.3 times higher for all types of abuse in the Indigenous population than in the non-Indigenous population. These departmental child protection figures are likely to be an underestimate of the actual levels of child maltreatment because they are based on reported child abuse and neglect only.

Alcohol abuse is considered to be an important situational factor in determining child abuse and neglect (Memmott et al., 2001). This is supported by evidence of a strong, repeatedly demonstrated relationship between alcohol and drug abuse and violence in Indigenous communities (Atkinson, 1991; Bolger, 1991; Fitzgerald, 2001; Robertson, 2000). In fact, a government inquiry examining Indigenous communities throughout the Northern Territory, found a strong relationship between alcohol abuse and child sexual abuse (Wild & Anderson, 2007). As described earlier in this review, it has been suggested that alcohol may facilitate or incite family violence by providing a socially acceptable excuse for the negative behaviour (Robertson, 2000). It has also been argued that alcohol abuse is correlated with numerous other risks for child abuse in Indigenous communities, including historical circumstances (e.g. trauma, loss of culture and community), violence, unemployment and welfare dependency (Memmott et al., 2001; Stanley et al., 2003). To date, the lack of prospective data means that causal links between alcohol and child abuse cannot be determined.

Despite the documented association identified between parental alcohol use problems and child abuse within high-risk and Indigenous samples, international studies that have retrospectively examined this relationship in community samples have produced inconsistent findings. For example, Harter and Taylor (2000) examined the long-term adjustment of college students ($N = 333$) with and without childhood histories of both parental alcohol dependence and sexual, physical or emotional abuse. The study found no significant differences in the incidences of child abuse among adults with or without childhood histories of parental alcohol disorders. However, further analyses indicated that adults exposed to both parental alcohol use disorders and emotional abuse in childhood had the poorest adult functioning in school and work roles. In comparison, individuals who were exposed to parental alcohol dependence but with no history of child abuse had the highest functioning in these areas. Harter and Taylor (2000) suggest that these findings show the heterogeneity in outcomes commonly found among adults exposed to parental alcohol problems and childhood abuses, including clinical observations that some adults exposed to parental alcohol abuse may develop high adaptive skills (Brown, 1998). These results are also consistent with a growing body of research indicating that family dysfunction plays a key role in the relationship between parental alcohol use disorders and adult outcomes (Jacob & Leonard, 1994).

Dube et al. (2001) also used a retrospective community-based design of 8,629 adult participants to examine the association between parental alcohol abuse and multiple forms of childhood abuse, neglect and other household dysfunction, including domestic violence towards the mother. Compared to persons who grew up with no parental alcohol abuse, the

likelihood of adverse childhood experiences was between two and 13 times higher if the mother, or father, or both parents abused alcohol. In families where both parents abused alcohol, the likelihood of emotional abuse increased four-fold, the likelihood of physical abuse increased three-fold, and the likelihood of sexual abuse in women increased three-fold. For almost every adverse childhood experience examined in the study, those who grew up with both an alcohol-abusing mother and father had the highest likelihood of multiple adverse childhood experiences. The study concluded that although the retrospective reporting of these experiences cannot establish a causal association, exposure to parental alcohol abuse was highly associated with experiencing childhood maltreatment or household dysfunction.

Smith and colleagues (2007) explored prenatal and postnatal substance use in a sample of 117 foster children recruited from a local child welfare system to explore the influence of maternal and paternal substance use on child maltreatment and foster care placements. Prenatal maternal alcohol use was a predictor of postnatal maternal substance use, as well as a risk for mothers to become involved with a substance-using partner. They also found that postnatal paternal alcohol and drug use was related to a higher likelihood of child maltreatment and a key risk factor for children to experience multiple foster care placement transitions, compared to children of non-substance using parents. However, this study found no relationship between postnatal maternal substance use and child physical abuse, acknowledging the retrospective nature of the study and the lack of information on parental substance use from the child welfare case files. A number of studies have provided some support for the hypothesis that postnatal alcohol use contributes to child maltreatment; however, there are no conclusive findings that implicate alcohol use in negative child outcomes (Widom & Hiller-Sturmhofel, 2001).

Locke and Newcomb (2003) examined how different types of child maltreatment relate to parental drug and alcohol problems in a community sample of adults (N = 477). The childhood maltreatment measure included assessment of emotional, physical and sexual abuse, as well as emotional and physical neglect. Findings suggested that childhood maltreatment and parental drug and alcohol problems are two distinct but interrelated conditions that co-occur about 30 per cent of the time for males, and about 20 per cent of the time for females. Confirmatory factor analyses indicated that these problems are not completely independent, nor are they always related to each other. When these problems co-occurred, increased global levels of parental dysfunction were identified. However, the inclusion of participants exposed to both parental drug and alcohol problems meant that the relative influence of parental alcohol and drug problems could not be determined.

Taken together, evidence suggests that the relationship between parental alcohol use disorders and child abuse is not straightforward. Although there is an association between these problems in high-risk and Indigenous groups in Australia, findings have been less consistent in community samples. It may be the case that there are other shared risks that account for the co-occurrence of these problems. For example, there is some evidence that parental alcohol problems and childhood abuse are more likely to co-occur in families characterised by poor functioning, low socio-economic status and other psychosocial risks (Memmott et al., 2001; Widom & Hiller-Sturmhofel, 2001). This makes it difficult to determine whether parental alcohol abuse actually increases the risk of child abuse, or whether other factors better explain the association.

Inconsistent findings in the literature may also be due to limited control for sampling biases, particularly in treatment-seeking and convention samples (Harter, 2000). It has been argued that adults with a childhood history of parental alcohol use disorders who seek help may have more frequently experienced abuse in childhood (Harter & Taylor, 2000). This is consistent with the finding that help-seeking individuals are more distressed and socially maladjusted than college students or non-treatment-seeking community samples (Ackerman & Gondolf, 1991; Kashubeck & Christensen, 1992; Mintz, Kashubeck & Tracy, 1995; Wright & Heppner, 1993). Similarly, studies on children within the welfare system focus on those with the most severe impairments, meaning that the influence of parental alcohol use is likely to be confounded by other factors affecting poor functioning families. Conversely, the use of community and college samples is likely to result in the exclusion of poorer functioning families with the most severe impairments, providing an underestimate of the incidence of co-occurring child abuse and parental alcohol abuse.

Based on present findings, it is concluded that parental alcohol use disorders are associated with a small to moderate increase in risk for child abuse. The extent and pervasiveness of parental alcohol exposure, and the presence of a range of other risks, both appear to influence the risk for child abuse. However, there is insufficient evidence to suggest that alcohol problems directly lead to child abuse. More research is needed to understand the shared and specific dimensions of parental alcohol use disorders and abusive experiences to assist in the development of integrative models that guide prevention and treatment efforts.

4.5.2 Parental attitudes towards drinking and modelling of alcohol use

Parental attitudes toward drinking

Parental attitudes toward drinking represent an indirect means of social modelling (Williams & Hine, 2002) and may be communicated either overtly or tacitly through the setting of limits or communication of values regarding alcohol use by parents. Research has found that parents who drink alcohol are more likely to exhibit permissiveness toward alcohol use in their adolescent children (Hayes et al., 2004; Wood et al., 2004). Parents' permissiveness regarding alcohol use may therefore be influential in determining adolescent alcohol initiation and the later transition to heavier drinking. It is important to also note that parental attitudes are dynamic and are likely to change with adolescent development (Hayes et al., 2004). Smith and Rosenthal (1995) found that adolescent perception of parental approval of drinking decreased as age increased. The literature examining the relationship between parental attitudes and age is, however, limited (Hayes et al., 2004).

Wood et al. (2004) examined the role of parental permissiveness in the prediction of alcohol use in a sample of late adolescents. The study found that the more permissive parents were in regard to adolescent alcohol use, the more likely their adolescents were to engage in heavy binge drinking. Parental permissiveness also appeared to influence peer associations, with a significant relationship between peer influence and alcohol use demonstrated when parents were permissive.

Williams and Hine (2002) assessed the role of parental attitudes towards adolescent alcohol use in mediating the role of more global parental permissiveness in the prediction of alcohol misuse among adolescents living in rural Queensland (N = 320). The study found that parental permissiveness and both mothers' and fathers' level of alcohol use were indirectly related to adolescent misuse, as they were mediated by parental and significant others' level of approval of the adolescent's alcohol use. The findings of this study suggest that parental permissiveness towards alcohol use has a more influential role in determining adolescent alcohol misuse than more general parental permissiveness. Parental permissiveness towards alcohol use was also shown to be more likely in families where parents drink alcohol, and was also associated with more positive attitudes in adolescents toward alcohol consumption and higher levels of anticipated social reinforcement from significant others (Williams & Hine, 2002).

While current research indicates that Australian parents continue to show a lack of knowledge about the NHMRC guidelines for reducing the health risks of drinking and the parenting guidelines for adolescent alcohol use, many parents report adopting harm minimisation strategies with their children (Gilligan & Kypri, 2012). Some research has shown that adolescent drinking is influenced by parents providing clear alcohol-specific rules (Wood et al., 2004; van der Vorst et al., 2005; van der Vorst et al., 2007; Van Zundert et al., 2006). For instance, van der Vorst and colleagues (2007) assessed parental alcohol-specific socialisation and adolescent alcohol use among 428 families (both parents and two adolescents were interviewed in each family). This study found that the likelihood of drinking initiation was reduced if clear alcohol-specific rules were provided, and this was demonstrated regardless of the age of the adolescent. This study did observe, however, that the impact of alcohol-specific rules declines once the adolescent has an established drinking pattern. These findings suggest early involvement by parents is needed to influence later patterns of adolescent drinking.

Other longitudinal research (N = 537) found that adolescent initiation to alcohol was not influenced by parenting behaviours or communication; however, alcohol-specific rules and reprisals by parents predicted an escalation of alcohol use at a one-year follow-up, suggesting a rebellion effect (Ennett et al., 2001). Conversely, Ryan et al. (2010) reviewed 77 longitudinal studies and reported limited evidence to support any relationship between parental rules and adolescent drinking behaviours, but found that general communication was associated with delayed initiation and lower levels of later drinking, and parental disapproval of alcohol resulted in lower levels of later alcohol use.

Parent-child communication styles have also been found to be influential. For example, Beck, Boyle and Boekeloo (2003) found that an adolescent's willingness to talk to his/her mother, and placing importance on one's father's opinion of alcohol, were both associated with a reduced likelihood of adolescent drinking. Research also supports the association between a lack of communication or parental concern and drinking behaviours. For example a survey of English school students (N = 4,369) found that an indifferent parental attitude was a significant factor in adolescent drinking, regardless of whether the parents were regular drinkers or non-drinkers (Foxcroft & Lowe, 1997). The authors reported that additional variables such as low parental control, low family support and regular parental drinking were significant factors for higher drinking levels in adolescents.

Parent modelling of alcohol use

One of the key risk factors for adolescent alcohol use problems is the presence of alcohol use problems in family members, especially parents. Studies have consistently found that parents' own use of alcohol increases the likelihood that their adolescent children will engage in alcohol use (Chassin, Rogosch & Barrera, 1991; Ellis, Zucker & Fitzgerald, 1997). It is likely that many inappropriate and harmful patterns of drinking are learned in the family. Research has indicated that children of alcohol-dependent parents are at approximately four times greater risk to use alcohol or develop alcohol-related problems than children of non-alcohol-dependent parents (Chassin et al., 1999; Jacob et al., 1999; Weinberg, 1997). As noted above, these children also tend to initiate alcohol use earlier and engage in problem drinking at a younger age than non-exposed children (Bonomo et al., 2001). The importance of parental modelling of alcohol use is highlighted when we consider the findings of Brown and colleagues (1999). This study found that adolescents exposed to parental alcohol abuse did not develop more negative attitudes towards alcohol use. Rather, these adolescents tended to have positive attitudes to alcohol in general, and toward the positive effects of alcohol in terms of dealing with stress and socialising (Brown et al., 1999).

Research has also demonstrated that less problematic, but frequent parental drinking is associated with negative adolescent outcomes. For example, research on data from the Australian Mater University cohort study (N = 2,551) found that maternal drinking (more than one glass of alcohol a day) at the 14-year follow-up was a strong predictor of alcohol use disorder in children at age 21 (Alati et al., 2005). Furthermore, Bonomo et al. (2001) found that 16- to 17-year-old adolescents who reported that their parents drank daily were at significantly greater risk of alcohol-related risk-taking. Alcohol-related problems in succeeding generations of the one family are not uncommon, with younger family members acquiring particular patterns of consumption from older family members. While a genetic component may contribute to such problems, social learning is also likely to be an important determining factor (Brown et al., 1999; White & Hayman, 2006; Essau & Hutchinson, 2008).

A qualitative study of Australian parental attitudes and adolescent drinking (N = 32) indicates that many parents acknowledge the influence of their family backgrounds on their own drinking behaviours, citing parents' or grandparents' alcoholism as having deterred them from drinking (Gilligan & Kypri, 2012). Many of the parents in the study endorsed communicating with their children about alcohol or using harm minimisation strategies, and yet most parents discussed their own alcohol use as a personal preference rather than a conscious plan to model behaviour to their child. Gilligan and Kypri (2012) conclude that the influence of parental modelling of alcohol consumption is likely to be mediated by a range of factors including parenting style and behaviour management, peer influence, and expectations associated with alcohol consumption.

Alcohol initiation and parental supply of alcohol

The current legal age of purchase for alcohol in Australia is 18; however, most young Australians have consumed alcohol before this age. The Australian School Students' Alcohol and Drug Survey (ASSAD) is a population-based survey measuring the alcohol consumption patterns of Australian secondary students aged 12- to 17 years. The most recent survey in 2011 of 24,854 students shows that 74 per cent of Australian students have tried alcohol (at

least a sip) by the age of 14 years, and 90.9 per cent of Australian adolescents have tried alcohol by the age of 17 years (White & Bariola, 2012).

Data from the 2010 NDSHS indicate that the average age when participants aged 14 to 24 years reported consuming their first full serve of alcohol was 14.8 years, and this average has remained fairly stable since 2001 (AIHW, 2011a). Statistics on repeated consumption suggest that once their first glass is consumed, a considerable number of adolescents progress to regular drinking. For example, NDSHS data show that 5.3 per cent of males and 4.9 per cent of females aged 12 to 17 were classified as regular weekly drinkers (an average of 5.1 per cent of combined males and females) while 33 per cent of 12 to 17-year-olds drank less than weekly and 59.3 per cent had never had a full serve of alcohol (AIHW, 2011a). Higher rates were reported in the ASSAD survey, with 18.4 per cent of males and 16.4 per cent of females aged 12 to 17 years reporting alcohol consumption in the past week (White & Bariola, 2012). These considerable differences are most likely due to variations in survey content and methodology, including differences between the two studies in the place of data collection (e.g. at school versus at home) and the phrasing of the questions. The ASSAD survey reveals that the proportion of current drinkers (consumed alcohol in the past seven days) increases with age and peaks at age 17 for 39 per cent of males and 34.5 per cent of females, as shown in Table 1. This prevalence of adolescent current drinking has been shown to be decreasing over time in both the ASSAD and NDSHS datasets and their respective previous surveys, with an increase in the number of young people reporting they have never drunk a full serve of alcohol (AIHW, 2011a; White & Bariola, 2012; White & Smith, 2010).

Table 1: Percentage of students who drank alcohol in the past seven days (current drinker) by age and gender from ASSAD (2011) survey

	Age						Total (%)
	12 (%)	13 (%)	14 (%)	15 (%)	16 (%)	17 (%)	
Male	6.1	7.8	13.1	22.0	30.2	39.0	18.4
Female	4.2	8.0	10.7	18.0	28.3	34.5	16.4
Total	5.1	7.9	11.9	20.1	29.2	36.7	17.4

Source: from White & Bariola (2012), used with permission of the Australian Government.

Parents are a major source of alcohol supply for many young Australians, and children are often first introduced to alcohol in the family home (King, Taylor & Carroll, 2005). According to ASSAD data, parents were reported to be the most common source for obtaining alcohol by adolescents who were current (weekly) drinkers. As shown in Table 2, 32.9 per cent of both males and females indicated that their parents gave them their last drink (White & Bariola, 2012). A small proportion (eight per cent) of respondents indicated

that they obtained their last drink from siblings, with 4.9 per cent of students taking alcohol from home. Interestingly, the proportion of students indicating parents as their source of alcohol was significantly greater among the younger students (34.9 per cent) than the older students (31.3 per cent) who also commonly had friends or someone else buy for them, or bought it themselves (White & Bariola, 2012). Given that parents are a major source of alcohol supply for many young Australians, their influence during the early stages of adolescence may be especially important.

Table 2: Most common sources of alcohol for those who drank in the past seven days (current drinker) from the ASSAD (2011) survey

	Age								
	12-15			16-17			Total		
	Male(%)	Female (%)	Total (%)	Male (%)	Female (%)	Total (%)	Male (%)	Female (%)	Total (%)
Parents	37.3	32.0	34.9	29.4	33.2	31.3	33.2	32.7	32.9
Siblings	9.6	8.9	9.3	7.6	6.3	7.0	8.6	7.5	8.0
Took from home	8.6	7.3	8.0	2.6	1.9	2.3	5.5	4.2	4.9
Friends	19.8	28.4	23.7	20.7	23.7	22.2	20.3	25.7	22.8
Someone else bought	14.4	16.4	15.3	25.6	27.1	26.3	20.2	22.5	21.3
Bought by self	1.5	2.2	1.9	9.9	4.6	7.3	6.0	3.6	4.8

Source: from White & Bariola (2012), used with permission of the Australian Government.

Students were also asked to indicate where they consumed their last alcoholic drink. The most common responses to this question are shown in Table 3, for males, females and all students in each age group between 12 and 17 years old. The proportion of students drinking at home decreased with age among both males and females; the most common place for younger students to drink alcohol was in the family home (38.6 per cent) compared to older students who were more likely to drink at a party (39.9 per cent). The majority of current drinkers reported they consumed their last alcoholic drink under adult supervision (64 per cent of both males and females, all ages). Among females, this adult supervision decreased with age from 88.4 per cent of 12-year-olds to 64.6 per cent of 17-year-olds; however, for males there was no significant change in adult supervision (White & Bariola, 2012). Both younger and older students drank less alcohol per week if they obtained their alcohol from parents than if they obtained it by having someone else buy it for them. Among younger students, weekly consumption of alcohol was also significantly lower if obtained from parents as opposed to friends. Both younger and older students drank significantly fewer alcoholic drinks per week if they drank at home than if they drank at a friend's house or at a party (White & Bariola, 2012).

Table 3: Most usual places for drinking by students who drank alcohol in the past seven days (current drinkers) from the ASSAD (2011) survey

	Age								
	12-15			16-17			Total		
	Male (%)	Female (%)	Total (%)	Male (%)	Female (%)	Total (%)	Male (%)	Female (%)	Total (%)
Party	25.9	30.0	27.7	38.7	41.1	39.9	32.7	36.3	34.4
At home	40.2	36.7	38.6	23.8	22.4	23.1	31.6	28.5	30.1
Friends house	11.2	15.5	13.2	18.5	20.6	19.6	15.1	18.4	16.7

Source: from White & Bariola (2012), used with permission of the Australian Government.

Evidence suggests that introducing adolescents to alcohol at a young age can have negative outcomes. There is increasing empirical evidence to suggest that the younger the age at which a child or adolescent commences drinking, the greater the risk of alcohol-related problems in later life. For example, longitudinal data from New Zealand show that the commencement of alcohol use in early adolescence increases the likelihood of the later development of high-risk use, independent of other influences (Fergusson, Lynskey & Horwood, 1994). The 2007 NDSHS revealed that nine per cent of Australian students aged 14 to 19 years drank alcohol at least weekly at levels which put them at risk or high risk of short- or long-term harm, based on the 2001 NHMRC alcohol guidelines (AIHW, 2008). A Victorian sample of the 2008 ASSAD study revealed that 16-year-old current drinkers who drank at levels for short-term risk of harm were significantly more likely to have had their first full serve of alcohol at a younger age than non-risky drinkers (White & Smith, 2010). In another study on early exposure to alcohol, children who had been introduced to alcohol before the age of six were shown to be 1.9 to 2.4 times more likely to report frequent, heavy or problem drinking at age 15 years than children who did not drink alcohol before the age of 13 (Toumbourou et al., 2004). Longitudinal research in Australia has also shown that regular drinking in adolescence is a risk factor for the development of risky patterns of use in young adulthood (Grant & Dawson, 1997).

Other studies suggest that the longer adolescents delay having their first alcoholic drink, the less likely they are to become regular or problem drinkers. For example, results from the 2005 ASSAD survey show that adolescents who start drinking later are more likely to report that they are light or occasional drinkers, and they are less likely to binge drink (Premier's Drug Prevention Council, 2003). Data from the National Longitudinal Epidemiologic Survey of 27,616 people in the US show that the lifetime alcohol dependence rates for individuals who initiate alcohol use by age 14 are four times higher than those who start drinking at 20 years of age or older (Grant & Dawson, 1997). After adjusting for potentially confounding variables, the odds of lifetime dependence decreased by 14 per cent with each additional year

of delayed initiation, and the odds of abuse decreased by eight per cent (Grant & Dawson, 1997).

Although it is difficult to prove a direct causal relationship, research suggests that lowering the legal alcohol purchasing age in New Zealand in 1999 from 20 to 18 years old was associated with increases in the number of alcohol-related hospital admissions and motor vehicle accidents (Cagney & Palmer, 2007; Casswell & Maxwell, 2005; Everitt & Jones, 2002; Kypri et al., 2006; Lash, 2005). There is also evidence to suggest that the younger the age at which young people begin regular social drinking, the poorer the outcomes will be (Bonnie & O'Connell, 2004). Numerous studies have demonstrated an association between underage drinking (particularly binge drinking) and an increase in negative outcomes including violence, motor vehicle accidents, memory loss, high-risk sexual behaviour, physical injury, and suicide (Birckmayer, 1999; Adolescent Health Research Group, 2004; Hingson et al., 2000; Palmer, Fryer & Kalafatis, 2006). However, research shows that this relationship disappears once other factors are taken into account such as whether the adolescent becomes intoxicated at first use, family history of alcohol abuse and delinquency (Warner & White, 2003). There is also evidence from Mediterranean countries where alcohol is integrated into everyday life and served at the dinner table that young people become intoxicated less frequently than in countries where alcohol is consumed less frequently but at higher levels (e.g. Nordic countries) (Kuendig et al., 2008).

Evidence indicates that early onset drinking increases the risk for future drinking problems; however, other factors may also play a role in this relationship. It may be the case, for example, that adolescents who commence drinking at a young age and who subsequently go on to misuse alcohol in late adolescence or adulthood have been exposed to other familial and social risks that, together with early exposure to drinking, increase the risk for adverse outcomes (Foxcroft & Lowe, 1991). In support of this notion, Fergusson et al. (1994) identified consistent correlations between the age of reported first use of alcohol and measures indicative of positive parental attitudes to alcohol use and approval of alcohol use by young people. The authors suggested that early reported alcohol use was, to some extent, an indicator measure of home environments in which alcohol was used frequently and viewed positively (see above discussion on parental attitudes towards drinking).

Although the early onset of alcohol use places individuals at greater risk of alcohol-related problems, this research suggests the risk is greatest among young people who live in home environments that adopt generally permissive and encouraging attitudes to alcohol use in their children (Foxcroft & Lowe, 1997; Williams & Hine, 2002). Further research is needed to determine whether early initiation is itself a key risk factor, or whether the presence of other factors (e.g. parental permissiveness regarding alcohol use, parent-child relationship problems), in combination with early exposure, increase the risk for negative outcomes. A third alternative that needs to be tested is whether early initiation is actually a proxy risk factor, or marker for the presence of other risks that account for the increased likelihood of developing alcohol use problems.

4.6 Impact on the physical, cognitive and psychological health of children

4.6.1 Prenatal exposure to alcohol, prevalence and impacts

In a survey of approximately 5,000 non-Indigenous Western Australian women between 1995 and 1997, 60 per cent reported drinking in pregnancy and four per cent reported drinking at 'binge' levels (defined as five or more standard drinks per occasion during pregnancy by Colvin et al., 2007). In comparison, a national survey of Indigenous women revealed that approximately 80 per cent abstained from drinking during pregnancy which is significantly higher than reported by pregnant non-Indigenous women (Australian Health Ministers' Advisory Council, 2011). These statistics fail to distinguish between the rates of drinking and the quantity of alcohol consumed during pregnancy. O'Leary and colleagues (2013) believe that maternal alcohol exposure during pregnancy is significantly underreported in Australia, and Indigenous women who drink during pregnancy are more likely to do so at risky levels than non-Indigenous women. Walpole et al., (1991) suggest these mothers may be less honest about self-reported alcohol use during pregnancy due to fears of potential involvement of child services and loss of custody. Indigenous mothers may have continued to drink heavily throughout pregnancy but were not identified or had limited access to treatment services, especially in rural or remote areas.

In another study of women's attitudes, women were found to be more likely to intend to drink during pregnancy if they were unaware of the risk of harm associated with prenatal alcohol consumption (Peadon et al., 2011). More recent statistics from the 2010 NDSHS (AIHW, 2011a) show a significant increase of abstinence during pregnancy between 2007 (40 per cent) to 2010 (48.9 per cent), a finding which may be attributable to increased public awareness, or to the 2009 changes in the Australian Alcohol guidelines which recommend that women abstain from alcohol while pregnant or breastfeeding. However, this message was only being taken up by roughly half of pregnant women surveyed in the 2010 NDSHS, which reported 47.3 per cent of pregnant women consumed alcohol before knowing they were pregnant and 19.5 per cent of women continued to drink even after pregnancy awareness (Callinan & Room, 2012). Further, 65.6 per cent of women reported drinking while breastfeeding, a finding which suggests that a sizable proportion of women resume drinking immediately after giving birth (AIHW, 2011a). The alcohol guidelines were found to be a significant predictor of drinking during pregnancy by an Australian prospective cohort study (Anderson et al., 2013) using data from the ALSWH. This study found that of 1,969 women who were pregnant either in 2000, 2003, 2006 or 2009, the women were 60 per cent more likely to drink when the guidelines condoned light drinking compared to when the guidelines advised abstinence during pregnancy.

A review of 14 international cross-sectional and longitudinal studies examined common predictors of maternal drinking during pregnancy. The review found that higher rates of pre-pregnancy drinking (both in quantity and frequency of alcohol use), and also maternal exposure to abuse or violence were important predictors. Factors less consistently associated with drinking in pregnancy were higher maternal age, lower education, smoking, prior pregnancies, being unmarried, higher income, and psychiatric symptoms (Skagerstrom, Chang & Nilsen, 2011). Australian data corroborate these predictors, indicating that weekly

drinking and binge drinking prior to pregnancy were significant factors influencing the likelihood of antenatal drinking, while fertility problems and low socio-economic status reduced the likelihood of alcohol consumption during pregnancy (Anderson et al., 2013). Among Indigenous communities, the loss of traditional culture has also been identified as an important risk factor for fetal alcohol exposure (O'Leary, 2002).

In addition to the high risk of Fetal Alcohol Spectrum Disorders (FASD), alcohol consumption by women in early pregnancy, and by both men and women at the time of conception, can increase the risk of spontaneous abortion, still-birth, premature birth and low birth weight (Breen & Burns, 2012; Henriksen et al., 2004; Kesmodel et al., 2002; O'Leary et al., 2009). Children exposed to alcohol have an increased risk of prenatally acquired cerebral palsy (CP) at a rate of 73 per 1,000 births, compared to a rate of CP of between 2.4 to 4.7 per 1,000 births for children not exposed to alcohol (O'Leary et al., 2012). A Western Australian study using data from 1983 to 2007 (N = 84,364) revealed that heavy alcohol use by non-Indigenous mothers during pregnancy increased the risk of CP three-fold (OR 3.32), while Indigenous children with CP were 2.5 times more likely to have a mother diagnosed with an alcohol use disorder in the 12 months prior to pregnancy (O'Leary et al., 2012).

Prevalence of FASD in Australia and internationally

Prenatal exposure to alcohol increases the risk for a range of physical, cognitive and mental health problems in children (Clarke et al., 2004; Richter & Richter 2001). The full range of possible outcomes resulting from maternal alcohol use during pregnancy are referred to as FASD (Barr & Streissguth, 2001). The most severe outcome is known as Fetal Alcohol Syndrome (FAS), and the less severe forms as partial FAS (Abel, 1998; Moore et al., 2002); prenatal exposure to alcohol can also result in alcohol related birth defects and alcohol related neurodevelopment disorders (Breen & Burns, 2012).

FAS is now regarded as the leading, preventable cause of non-genetic intellectual handicap in the Western world (O'Leary, 2002). An ongoing system using the Australian Paediatric Surveillance Unit (APSU) is one mechanism for case identification and reporting by child health specialists to obtain national estimates of FAS in Australia (Bower et al., 2002; Burns et al., 2013). The APSU study provided previously unavailable data on the epidemiology of FAS in Australia, which was previously reported by passive surveillance systems within various states and territories. The most recent release of data between 2001 and 2004 suggest a national birth prevalence estimate of 0.06 per 1,000 live births, with an overrepresentation of Indigenous children (Elliott et al., 2008).

Although there is limited national data, other Australian jurisdictions have estimated the prevalence of FAS. In Western Australia (WA), the linking of the Birth Defects Registry and the Rural Paediatric Service database resulted in a comprehensive estimate of the birth prevalence of fetal alcohol syndrome. The estimate from the 1980/97 data sets is 0.18 per 1,000 births for non-Indigenous children in WA, and 2.76/1,000 births for Indigenous children in WA (Bower et al., 2000). The prevalence of fetal alcohol syndrome has also been estimated in the Northern Territory for children born between 1990 and 2000. The estimate is 0.68 per 1,000 live births for non-Indigenous children, and 1.87 per 1,000 live births for

Indigenous children (Harris & Bucens, 2003). Additionally, estimates collected from the Victorian Perinatal Data Collection and the Victorian Birth Defects Register between 1995 and 2002, suggest the prevalence of FAS ranges from 0.01 to 0.03 per 1,000 live births (Allen et al., 2007).

It is notable that outside Australia, similar patterns have been reported, with the incidence or prevalence of FAS being highest for African American groups in the US, Indigenous groups in the US and Canada, and for coloured/mixed races in South Africa (May et al., 2004; O'Leary, 2002; Rutman & Bibber, 2010). It is believed that the increased incidences are not independently related to race, but that poverty and its associated risks were factors contributing to high rates of FAS in these Indigenous populations (Harris & Bucens, 2003). The prevalence of FAS has also been shown to vary between communities of the same racial group, suggesting that there may be high-risk sub-groups within some communities (O'Leary, 2002). The increased awareness of the contribution of FASD to the burden of disease amongst Australia's Indigenous population has prompted significant attention and Parliamentary Inquiry into the prevention, incidence and management of FASD, both from government organisations and those working with Indigenous peoples within the community (Department of Families, Housing, Community Services and Indigenous Affairs, 2010; Australian Human Rights Commission, 2012; Fitzpatrick et al., 2012).

Presentation of FASD for children exposed to alcohol

The literature supports the biological role of alcohol as a teratogen, or substance that causes birth defects. A number of mechanisms of the effects of alcohol as a teratogen have been described, including hypoxia (oxygen deficiency), hormonal imbalances and the direct effects of alcohol on cellular processes during the prenatal period (Abel, 1998; Gabriel et al., 1998; Michaelis & Michaelis, 1994; Overholser, 1990). The expression of full FAS is found in children whose mothers have a history of chronic heavy alcohol use or frequent heavy intermittent alcohol use in pregnancy. The impact of heavy alcohol consumption has been shown to vary depending on the timing of exposure on fetal development. The teratogenic impact of alcohol on the fetus is varied by the timing, dosage, frequency and exposure during gestation (Grant et al., 2013). The primary teratogenic effects occur during the first eight weeks of gestation, while exposure to alcohol later in pregnancy can affect growth and lead to behavioural and cognitive disorders (Abel, 1998; Gabriel et al., 1998; Michaelis & Michaelis, 1994; O'Leary, 2002; Overholser, 1990; Streissguth et al., 1999). Research suggests that binge drinking is particularly harmful because the fetus may be exposed to high blood alcohol concentration and withdrawal episodes during critical periods of development (Maier & West, 2001).

The diagnosis of FAS is based on a set of criteria comprised of abnormalities in three main areas: characteristic physical abnormalities, growth retardation and central nervous system abnormalities with intellectual impairment (Abel, 1998; Moore et al., 2002). FAS is also associated with a complex pattern of cognitive and behavioural dysfunction. Secondary symptoms can include poor impulse control and hyperactivity, deficits in attention, memory or judgment, poor problem-solving and arithmetic skills, language problems (both in understanding and speaking), and deficits in abstract thinking, perception and motor development. These effects place children at greater risk of experiencing difficulties in

schooling, problems in relating to others and increased risk of involvement in criminal justice and incarceration (Breen & Burns, 2012; Moore et al., 2002; O’Leary, 2004; Streissguth et al., 2004). Less common presentations of FAS include skeletal malformations, cardiac problems, visual and auditory deficits, and altered immunological function (Chaudhuri, 2000; Johnson & Leff, 1999; Weinberg, 1997).

There is increasing evidence that alcohol consumption in pregnancy can also have detrimental effects on children later in life. FAS has been associated with language and social communication deficits in school-aged children (Coggins, Timler & Olswang, 2007), as well as attention, memory and information processing deficits in adolescence (Streissguth et al., 1999; Clark et al., 2004). Prenatal exposure to alcohol is also associated with antisocial and delinquent behavioural problems in adolescence and young adulthood, which can include poor impulse control, poor social adaptation, trouble with the law, inappropriate sexual behaviour, difficulties with employment and substance use problems (Jacobson, 1999; Jacobson & Jacobson, 2002; Rutman & Bibber, 2010; Streissguth et al., 1999). Research suggests these individuals are particularly vulnerable and more likely to engage in risky behaviours common in adolescence due to impaired decision-making and deficits in executive functioning associated with FASD (Rasmussen & Wyper, 2007).

Prenatal exposure to alcohol is also strongly associated with the development of alcohol use problems. In a study of adverse outcomes for those prenatally exposed to alcohol (N = 415) substance use problems, predominantly alcohol use, were reported for 46 per cent of adults and 35 per cent of children (Streissguth et al., 2004). Baer and colleagues (2003) conducted a 21-year longitudinal analysis of the effects of prenatal alcohol exposure on young adult drinking. Prenatal alcohol exposure was significantly associated with alcohol problems at 21 years of age, independent of the effects of family history of alcohol problems, nicotine exposure, other prenatal exposures, and postnatal environmental factors including parental use of other drugs. Grant et al. (2013) suggest that many adults with undiagnosed FASD who enter treatment for alcohol use disorders fail to complete treatment due to neurocognitive deficits which impair their ability to engage in the process.

Many children born with prenatal alcohol exposure also suffer mental health problems and psychiatric disabilities throughout their lifetimes. A review of the existing literature, including longitudinal studies, was conducted by O’Connor and Paley (2009) and summarised the lifetime outcomes for children with prenatal exposure to alcohol (which includes FAS and partial FAS diagnoses). They reported that exposure to alcohol was associated with insecure attachment and depressive symptoms in infancy and early childhood. Middle childhood showed associations with mood disorders (including anxiety, depression and mania); attention problems, including ADHD; social problems and antisocial behaviour, delinquency and conduct disorders. Adolescents and young adults experienced mood disorders (including anxiety, depression and panic attacks), suicide behaviours, psychotic disorders, conduct problems, aggression and antisocial personality disorder, and substance use disorders (O’Connor & Paley, 2009). An Australian study conducted by Breen and Burns (2012) of 29 families caring for a child or adult affected by FASD revealed high rates of comorbidity, with the majority reporting more than one diagnosis. ADHD or ADD was most common, followed by learning disorder and intellectual disability (Breen & Burns, 2012). One study of adults in the US who had been born with FAS or milder fetal alcohol effects (N = 25) found that 72 per cent of the participants had received some form of psychiatric treatment, with 24

per cent requiring hospitalisation in a psychiatric institution (Famy, Streissguth & Unis, 1998). In a Canadian study of 62 persons of various ages with FAS or partial FAS diagnoses, 92 per cent of the participants had a history of mental health problems, with depression being the most frequently reported problem among adults (47 per cent) (Clark et al., 2004).

Risk threshold for FASD

Establishing a threshold for risk of prenatal alcohol use has proved difficult and this difficulty supports the emerging evidence that the risk may differ for different developmental effects. Part of the difficulty in establishing a risk threshold is also the fact that there is a range of other confounding factors likely to influence the severity of effects experienced by a child prenatally exposed to alcohol (O’Leary, 2004; Single, Ashley & Bondy, 1999; Testa et al., 2003). As noted above effects can vary depending on how much alcohol a child is exposed to, the pattern of the mother’s drinking, the duration of exposure, and the stage of pregnancy during which the drinking occurred. The mother’s age, culture, health, nutrition, prenatal care, genetic predisposition, use of other drugs, the presence of maternal psychiatric disorders, and socioeconomic status can also influence the extent of the problems resulting from prenatal exposure to alcohol.

There is some evidence to suggest that low-to-moderate levels of alcohol consumption in pregnancy can impact negatively on embryo and fetal development (Day et al., 2002; Day & Richardson, 2004; Day et al., 1999; Jacobson & Jacobson, 2002; O’Leary et al., 2009), although not all studies found an effect for low-to-moderate consumption (Alati et al., 2008; Kelly et al., 2013; Kesmodel et al., 2012; Testa et al., 2003; Walpole et al., 1991). The most likely effects at these levels are abnormalities in the developing embryo and subtle neurobehavioural problems that are not associated with immediately recognisable physical abnormalities. For example, some studies report a significant relationship between alcohol and decreased psychomotor performance (Larroque et al., 1995), decreased verbal learning and memory (Richardson et al., 2002) and decreased academic achievement (Goldschmidt et al., 1996).

To clarify whether there is a clear threshold for risk, Testa et al. (2003) suggested that future research would benefit from greater consideration of differences in the dosage and timing of drinking, and the impact of maternal health and psychosocial factors on infant development. A recent Danish birth cohort study of 1,628 families (Kesmodel et al., 2012) found no effect for the groups categorised as low (one to four drinks per week), moderate (five to eight drinks per week) or binge (five or more drinks on a single occasion) maternal drinking during pregnancy on measures of the child’s intelligence, attention or executive functioning at five years of age. There remained no significant differences even when the results were adjusted for a range of potential covariates, including the child’s gender, parental education and maternal smoking (Kesmodel et al., 2012). The Millennium Cohort Study (Kelly et al., 2013), a prospective cohort study of 10,534 families in the UK, found no effect of low exposure to alcohol during pregnancy (up to two units of alcohol per week) on behavioural or cognitive difficulties in children when followed up at age seven, when compared with mothers who abstained during pregnancy. Similarly, Alati et al. (2008) found no strong association between alcohol consumption in the first three months of pregnancy and

variation in childhood mean IQ scores at age eight in the Avon Longitudinal Study of Parents and Children (ALSPAC) (N = 4,332).

Further, another UK ALSPAC study followed up 6,915 children at age 10 and found no effect of maternal alcohol consumption during pregnancy on childhood balance ability, a measure of neurodevelopmental outcomes underpinning motor development (Humphriss et al., 2013). These findings were across groups including low (one or two drinks per week) to moderate alcohol use (three to seven drinks per week), high alcohol use (greater than seven drinks per week) and binge drinking (greater than four units per day), and these results were similar for both paternal and postnatal maternal use. An apparent beneficial effect of higher maternal and paternal alcohol consumption on child balance was attributed to confounding due to higher social advantage associated with moderate alcohol use compared with abstinence or binge drinking. These results provide some support that low levels of alcohol exposure during pregnancy may not be harmful to a child's development.

In summary, alcohol consumption at high levels during pregnancy can lead to a range of adverse outcomes for the fetus including FASD. The question of whether there is a safe level of drinking during pregnancy remains to be established. While there is some evidence that low-to-moderate alcohol intake during pregnancy does not appear to be associated with an increased risk of fetal malformations or physical, behavioural or cognitive consequences, there appears to be some evidence for a dose-response association. A threshold level below which consumption is not teratogenic has not been formally established (NIAAA, 2003), and for these reasons the Australian Alcohol Guidelines changed in 2009 to an abstinence-based approach, recommending that for women who are pregnant, breastfeeding or planning a pregnancy not drinking is the safest option to avoid adverse effects (NHMRC, 2009).

4.6.2 Disturbances in childhood, adolescence and adulthood

Not only can parental drinking have long-term effects prenatally, but alcohol use also has a significant impact on postnatal mortality and morbidity. A large body of empirical evidence shows that children of alcohol abusing parents are at elevated risk for a range of maladaptive outcomes in childhood, adolescence and into adulthood (Chassin et al., 1999; Harter & Taylor, 2000; Johnson & Leff, 1999; Lynskey et al., 1994; Sher et al., 1991; West & Prinz, 1987). The following two sections will review literature on the relationship between parental alcohol use disorders and disturbances in: (a) physical health, (b) psychological and emotional development and behaviour, and (c) cognitive development. The final section will overview research on the increased risk for alcohol abuse and dependence in children exposed to parental drinking problems.

An important issue to consider is that many of the studies assessing current or retrospective parent alcohol use do not report controlling for prenatal alcohol exposure and because the effects on psychological, behavioural, emotional and cognitive development share many features observed as a result of prenatal exposure, these findings may be better explained by maternal alcohol use during pregnancy rather than parental alcohol use during childhood. Where possible, research where paternal abuse alcohol has been studied and those which have controlled for prenatal exposure have been included in the discussion in relation to children's psychological, emotional, behavioural and cognitive development.

Physical health disturbances

There has been limited research on the physical effects of postnatal exposure to alcohol for children, as these effects are less direct compared to prenatal exposure and more difficult to quantify. Estimates indicate that for Australian children aged 0 to 14 years old in 2005, approximately 17 per cent of deaths and 13 per cent of hospitalisations were attributable to the drinking of others, predominantly caused by child abuse and road crashes (Laslett et al., 2010). US epidemiological data of 65,926 child and parent pairs indicate that even when confounding variables are controlled for, children of problem drinking parents have an increased likelihood of accessing health care in the past year, both in frequency of visits to a paediatrician and to hospital emergency wards (Balsa & French, 2012). Earlier US data indicate that high rates of hospitalisations for children of alcohol-dependent parents were commonly resulting from injury, poisonings, mental health concerns and substance intoxication (Children of Alcoholics Foundation, 1990). This is likely due to insufficient monitoring and impaired judgement by alcohol-affected parents.

Psychological, emotional and behavioural disturbances

Research has demonstrated a consistent relationship between parental alcohol use disorders and psychological, emotional and behavioural problems in offspring (Harter, 2000; Russell, Henderson & Bloom, 1984; Sher, 1997; West & Prinz, 1987). Children of alcohol abusing parents generally report two main types of problems: outwardly directed externalising problems, including symptoms of ADHD, oppositional defiant disorder, conduct disorder and antisocial personality disorder; or, inwardly directed internalising problems, including symptoms of anxiety and depression.

The majority of research in this area has involved retrospective comparison of a range of mental health and personality characteristics among adults with and without histories of childhood exposure to parental drinking. Although not all studies have produced consistent findings, the majority of retrospective studies indicate that children raised in families where one or both parents abuse alcohol are at increased risk for a range of negative outcomes. Outcomes for which there is considerable empirical evidence include: impulsive and antisocial personality traits, including elevated levels of risk-taking, sensation seeking, and aggressive and antisocial behaviours, low self-esteem (Beaudoin et al., 1997; Domenico & Windle, 1993; Hill et al., 1999; Sher et al., 1991), anxiety, depressive and substance abuse disorders, difficulties in family relationships and generalised distress and maladjustment (Sher, 1991; Harter, 2000).

Numerous cross-sectional studies have also examined the characteristics of children and adolescents with one or more alcohol abusing parent. Consistent with research on adult samples, these studies have generally found that the children of alcohol abusing parents are at elevated risk for a range of psychological, emotional and behavioural problems. Specifically, research shows that these children frequently demonstrate elevated levels of hyperactivity and restlessness, attentional difficulties, impulsivity, oppositionality, antisocial behaviour, poor academic performance, social problems, depressive affect and anxiety symptoms, as well as drug and alcohol use (see Andreas & O'Farrell, 2007; Chassin et al.,

1993; Chassin et al., 1991; Diaz et al., 2008; Furtado, Laucht & Schmidt, 2006; Peiponen et al., 2006; Sher, 1997; Spijkerman, van den Eijnden & Huiberts, 2008; West & Prinz, 1987).

Lynskey and colleagues (1994) used data from the Christchurch longitudinal study (N = 961) in New Zealand to examine the relationship between parental alcohol use disorders and young people's mental health outcomes. The study found that young people raised in families in which a parent was dependent on alcohol had rates of psychiatric disorders at the age of 15 that were between 2.2 and 3.9 times higher than young people raised in families in which there were no reported parental alcohol problems. These associations were reflected in increased risks of both externalising disorders, including substance abuse and dependence, conduct, oppositional and attention hyperactivity disorders, and internalising disorders, including both mood and anxiety disorders. These relationships reduced to being between 1.6 and three times more likely to experience psychiatric problems, but remained robust, after adjusting for a range of confounding factors, including maternal substance use during pregnancy.

Lynskey et al. (1994) also found evidence of a consistent relationship between the extent of reported alcohol problems in parents and adolescent outcomes. In general, teenagers whose parents reported alcohol dependence had the worst prognosis followed by those whose parents reported alcohol problems but not dependence, with teenagers whose parents did not report alcohol problems having the best prognosis. Of the young people whose parents were described as alcohol dependent, more than 50 per cent met diagnostic criteria for at least one psychiatric disorder at the age of 15 years. These results suggest the presence of a linear relationship between the extent to which parents exhibit alcohol-related problems and an individual's level of vulnerability to mental health problems in adolescence.

It has been suggested that the link between parental alcohol use disorders and child health outcomes could be due to the fact that parental drinking interferes with healthy parenting, (Richter & Richter, 2001). A longitudinal study of 235 families by Keller and colleagues (2008) explored the directional effects between parental drinking and child adjustment problems. The US study found that paternal drinking problems were related to increased marital conflict. In turn, marital conflict was associated with decreased parental warmth, and decreased warmth was related to young children's internalising and externalising problems. When controlling for paternal drinking there were no significant relations between maternal drinking and marital conflict, parenting or child adjustment; however, maternal drinking was highly correlated with paternal drinking and might be a weaker predictor of parental relationship problems (Keller et al., 2008). These indirect pathways demonstrate the complex family processes that increase the risk for disruptive child outcomes.

Taken together, evidence indicates that the offspring of parents with alcohol use disorders experience higher levels of psychological, emotional and behavioural disturbances compared to children of parents with no alcohol problems. Longitudinal cohort studies provide evidence that child psychopathology can be predicted from parental alcohol abuse, and that the frequency of these disturbances in children with two alcohol abusing parents is distinctly higher than those with one alcohol abusing parent (Lynskey et al., 1994). However, there is little empirical support for the notion of a 'syndrome' uniformly characterising children of alcohol-abusing parents or distinguishing them from other high-risk groups (e.g. Brown, 1998). Rather, the literature suggests that there is considerable variation in outcomes, and

that these outcomes are not specific to children from families affected by alcohol. Evidence suggests that this variability in individual outcomes is likely to be influenced by the severity of parental drinking, as well as the presence of other childhood stressors, including comorbid parental pathology, childhood abuse and family dysfunction.

Cognitive disturbances

The literature examining cognitive deficits in children with alcohol-dependent parents is inconsistent (Poon et al., 2000). While a number of studies have documented deficits in intellectual or academic performance and/or cognitive functioning (Casa-Gil & Navarro-Guzman, 2002; Diaz et al., 2008; Finn & Hall, 2004; Schroeder & Kelley, 2008), others have not (Leonard & Eiden, 2002). A multisite Spanish study conducted in eight cities with 371 children aged six to 17 of alcohol-dependent parents and 147 controls used a number of cognitive tests and measures of academic performance to examine the impact of parental alcohol misuse (Diaz et al., 2008). The results showed that the risk of poor school achievement was nine times higher among children with an alcohol-dependent parent, compared to controls. Additionally, the results of all cognitive tests used (including measures of verbal abstraction, visuospatial abstraction, attention and cognitive flexibility) were worse for these children (Diaz et al., 2008). This study also found that among exposed children, having a larger number of relatives with a history of alcohol misuse was significantly related to poor academic and cognitive performance (Diaz et al., 2008). The study excluded mothers who drank more than five units of alcohol per week during pregnancy to control for prenatal exposure; however, the authors acknowledged the inclusion of low-level prenatal alcohol use was a limitation of the study.

Another cross-sectional survey of 226 children aged seven to 16 years identified five areas of academic performance that were poorer among children with alcohol misusing parents: intelligence, repeating a grade, low academic performance, school truancy, and dropping out of school (Casa-Gil & Navarro-Guzman, 2002). Finn and Hall (2004) also assessed cognitive ability among adult children of alcohol-dependent fathers (N = 303, mean age of 22.5 years with no history of maternal drinking prior to or during pregnancy) and found that compared to controls, they demonstrated lower IQs, lower verbal ability and more response perseveration (i.e. continuing to respond to a particular stimulus, despite negative feedback) (Finn & Hall, 2004).

Leonard and Eiden (2002) examined the cognitive functioning of 226 infants (tested at 12, 18 and 24 months old) from three family groups: 102 families in which the father was alcohol-dependent; 20 families in which the father was alcohol dependent and the mother was a heavy drinker; and 104 control families (matched on maternal education, race/ethnicity, child gender, marital status and number of children). Infants with maternal alcohol use during pregnancy were excluded from the study. The results revealed no differences in cognitive functioning among the groups, suggesting no effect of paternal alcohol misuse on overall cognitive development early in life (Leonard & Eiden, 2002). The authors suggest that given these results, deficits in later cognitive functioning may be a result of parenting and/or behavioural problems among children with alcohol-dependent parents (Leonard & Eiden, 2002). It is also possible, however, that these effects are not apparent until children are older. Additionally, another study identified adolescent task orientation as a partial mediator between parental alcohol dependence and academic achievement, suggesting

impaired motivation and/or organisation may contribute to the poor academic performance cited in other studies (McGrath, Watson & Chassin, 1999).

A more recent study examined executive functioning and behaviours associated with higher order cognitive processes (which included flexibility in problem-solving and ability to control emotions) among 315 college students with and without a history of parental alcohol abuse (Schroeder & Kelley, 2008). The results showed that compared with controls, individuals with a history of parental alcohol abuse had more deficits in executive functioning; however, family environmental factors (including organisation, control, and communication) appeared to be more important in influencing executive functioning (Schroeder & Kelley, 2008).

Alcohol use problems

Children of alcohol abusing parents are at elevated risk for alcohol use problems in adolescence and adulthood (see Hayes et al., 2004). While not all children exposed to parental alcohol abuse will go on to develop problems, research on clinical and treatment samples suggests their risk is approximately four times higher than children not exposed to parental alcohol abuse (Chassin et al., 1999; Jacob et al., 1999). It is likely that both biological and environmental risk factors play a role in the development of alcohol use disorders among children with alcohol-dependent parents (Hayes et al., 2004).

Although research has demonstrated that biological links (through twin and adoption studies) exist in the relationship between parental alcohol dependence and alcohol misuse among their children, these associations do not appear to be pervasive enough to draw firm conclusions (Hawkins, Catalano & Miller, 1992; Hayes et al., 2004). For example, in their review, Hawkins et al. (1992) highlight that approximately half the adults hospitalised for alcohol dependence do not report a family history of alcohol abuse, suggesting that biological linkages do not account for a significant proportion of cases. Historically, being able to document exactly what leads to the development of alcohol misuse among adolescents exposed to parental alcohol abuse has been a challenge for many studies due to the number of confounding genetic and environmental risk factors. A twin study by Slutske and colleagues (2008) of 2,334 offspring of 836 twin pairs (and 983 spouses of the twins) suggested that after taking into account the confounding factors only a modest causal effect is demonstrated for exposure to parental alcohol use disorders on offspring alcohol use disorders. Taken together, twin studies have demonstrated that genetic factors account for approximately 40 to 60 per cent of the variance in the development of alcohol dependence, suggesting a substantial amount of variance may be attributable to non-genetic risk factors, including parenting behaviours and disrupted parent-adolescent relationships (Duncan et al., 2006).

As highlighted earlier, research suggests offspring with a family history of alcohol dependence are at an increased risk of also developing an alcohol use disorder; however, this conclusion has been based on research conducted mainly among clinical samples. Evidence from community based samples also validates the findings from such clinical studies. Lieb and colleagues (2002) examined the effect of exposure to parental alcohol use disorders on a community based sample of German adolescents (N = 2,427) using a number of different drinking outcomes and levels of use (including occasional use, regular use, hazardous use, abuse and dependence). The results found that not only did parental alcohol abuse predict

the development of alcohol use disorders among the adolescent offspring but it also predicted escalation of alcohol use (i.e. progressed more quickly into higher use categories), and an earlier onset of a number of alcohol outcomes (i.e. first onset of hazardous use and dependence).

Comparatively few longitudinal studies have examined the relationship between early exposure to parental drinking and later outcomes in adolescence and adulthood. One longitudinal study by Chassin and colleagues (1999) examined the effects of parental alcohol misuse on adolescent psychological symptoms and substance use among 454 families. The results demonstrated that parental alcohol misuse increased the subsequent risk for substance misuse among adolescents, after adjustment for parental psychological disorder. Hussong, Bauer & Chassin (2008) examined drinking trajectories from initiation to disorder in 454 adolescents. Telescoped trajectories were identified among children of alcohol misusing parents; they progressed more rapidly from alcohol use initiation to disorder, when compared to matched controls. Notably, stronger effects were observed among those children whose parents suffered from comorbid alcohol dependence and depression or antisocial personality disorder (Hussong et al., 2008).

Peer associations and adolescent attitudes towards drinking have also been found to interact with family influences in the development of adolescent alcohol use (Barnes & Farrell, 1992; Brown et al., 1999). Barnes and Farrell (1992) used longitudinal modelling techniques to demonstrate that adolescents were more likely to develop regular drinking patterns if they were exposed to alcohol abuse in their family and had high peer orientation (i.e. peer opinion was valued more than parents' opinion in determining adolescent behaviour). These results reveal that peer orientation is a significant predictor of drinking behaviour, and interacts with measures of parenting.

Using longitudinal data from the Christchurch Health and Development Study, Fergusson and colleagues (1995) examined the prospective relationship between parental alcohol use at child age 11 years and abusive or hazardous drinking at 16 years of age. Results indicated that parental alcohol use at child age 11 years did not directly predict abusive or hazardous drinking at 16 years. Rather, the effect of parental alcohol use on the risk of later abusive or hazardous drinking was mediated by adolescent peer affiliations at age 15 years. This finding suggests that children of parents who use alcohol are more likely to have affiliations with peers who also use alcohol or other substances. In turn, deviant peer affiliations appear to increase the risk for alcohol abuse at age 16 years (Jacob & Leonard 1994; Wood, Vinson & Sher, 2001). The results of this study suggest that the pathways of influence are likely to involve complex links between multiple risks across time. These conclusions are supported by the results of another longitudinal study which assessed the role of parental alcohol misuse and parenting on adolescent alcohol use over three annual waves (N = 428 families) (van der Zwaluw et al., 2008). Both parenting and exposure to parental alcohol misuse were found to shape alcohol use among adolescents, highlighting the contribution of shared environmental factors. This study also suggested that the contribution of certain factors may change as adolescents get older, for example, the importance of parental versus peer drinking may shift as adolescents get older and move beyond the initiation phase (van der Zwaluw et al., 2008).

4.7 Protective factors

Of those who are exposed to risky parental drinking, not all children go on to suffer psychological disorders. Compared to the large body of research on the risks of exposure to parental drinking, comparatively few studies have examined protective factors that mitigate against these risks. Some studies show that children of alcohol abusing parents may exhibit undisturbed psychological functioning over time despite having a problem drinking parent (Harter, 2000; Segrin & Menees, 1996). There appear to be a number of factors that enable children to weather the problems of their childhood.

Children least at risk appear to be from families with high levels of family support, emotional closeness, family management, control and cohesion, an intact family structure, families where there is a non-drinking parent who can mitigate the effects of the problem drinker, and those with fewer socio-economic problems (Chassin et al., 2004; Habib et al., 2010). Social supports outside the family, such as support from school, friends and the community, are also associated with better outcomes for children (e.g. Edwards, Eiden & Leonard, 2006; Habib et al., 2010; Hill et al., 1997; Jacob & Leonard, 1994; Johnson & Leff, 1999; Sher, 1991).

Individual factors

Gender effects are apparent with the influence of family factors to protect adolescents from risky alcohol use. A longitudinal study of 855 Australian students aged 10 and over by Kelly, O'Flaherty et al. (2011) as part of the International Youth Development Survey explored the influence of parental disapproval of drinking, family structure, family conflict, adolescent sensation seeking, and peer alcohol use. The study found longitudinal lag effects for teenage alcohol use that differed by gender. For girls, emotionally close relationships with mothers was associated with less frequent alcohol use and reduced exposure to high-risk peer networks, while parental disapproval decreased alcohol use for boys but not for girls (Kelly et al., 2011a). A similar study of 6,837 students aged 11 and 13 by Kelly et al. (2011b) found that emotional closeness to the parent of the opposite gender predicted lifetime alcohol use for both boys and girls in Grade 6 but not for those in Grade 8. This study also found family conflict significantly predicted alcohol use for preteen and early teenage girls but not for boys, with the authors suggesting a reciprocal relationship between family conflict and female alcohol use.

Resiliency has been postulated to be an important protective factor. Resiliency is acquired through the development of coping resources which can be made up of behaviours comprising cognitive, social, emotional and/or physical domains (Hall, 1997). Studies have identified a number of behavioural characteristics among children of alcohol-dependent parents that were protective against developing coping problems, including good communication skills and level of knowledge; an internal locus of control; high levels of self-esteem and an ability to express feelings (Werner, 1986; Walker & Lee, 1998; Moe, Johnson & Wade, 2007). Additionally, Coyle et al. (2009) reported some families demonstrate resilience in overcoming the risks associated with parental alcohol use. Characteristics of resilient families are positive beliefs and values, role adaptability, closeness or cohesion,

effective communication, problem-solving and positive parenting skills which allow families to collectively adapt to stressors and reduce negative outcomes relating to alcohol problems.

Self regulation or self-control is required for at-risk adolescents to make the choice to reduce drinking to safe levels or abstain from alcohol, and a number of studies have explored this trait as a protective factor for alcohol problems (Quinn & Fromme, 2010; Pearson, D'Lima & Kelley, 2011). A study of 195 undergraduate college students found that higher self-regulation did not reduce consumption of alcohol, but did reduce alcohol related-problems. Those who were identified as an adult child of parents with an alcohol use disorder showed increased consumption of alcohol and experienced more alcohol-related problems; however, for this at-risk group, low, average or high self regulation was strongly related to the experience of alcohol-related problems (Pearson et al., 2011). This study provides support for the role of self regulation as a buffer against the risks of negative consequences for children of parents with problematic alcohol use; however, previous longitudinal research has shown that parental drinking interferes with the parenting processes which aid in the development of self regulation (Eiden et al., 2009) thus increasing the risks for these children.

Parenting factors

Becoming a parent is itself a protective effect for those with young children, reducing the risk of alcohol misuse and therefore reducing the negative impacts on the children. A recently published 30-year longitudinal birth cohort study in New Zealand (N = 347) suggests a relationship between the transition to parenthood and the reduction in rates of parental alcohol abuse and dependence, with females showing the most significant reductions (Fergusson, Boden & Horwood, 2012). This study hypothesises there is a protective effect for parents of dependent children, which persists when controlling for possible confounding variables, such as socio-economic status, parental adjustment, individual characteristics and childhood abuse of the parents.

Drinking patterns of parents are also important in determining outcomes. For example, there is evidence that an unpredictable pattern of parental alcohol abuse may result in greater disruption in family life than a more predictable, regular drinking pattern. Similarly, out-of-home drinking patterns may to some extent insulate family and children from disruptions that occur when drinking takes place at home (Jacob & Leonard, 1988; Jacob & Leonard, 1994). As discussed in previous sections, parental attitudes can also offer a protective effect for children and adolescents. A prospective study of 256 college students over 22 months reported that low parental permissiveness reduced the influence of social modelling from peers and decreased heavy episodic drinking (Fairlie, Wood & Laird, 2012); however, this study found no effect for parental monitoring, unlike earlier research cited.

Additionally, longitudinal research provides evidence for an 'aversive transmission' of alcohol use, whereby perceived parental alcohol dependence and perceived risk of alcohol dependence interact to reduce drinking behaviours in children of problematic drinkers (Haller & Chassin, 2010). This study of 804 adolescents and young adult children of 401 parents with DSM-III diagnosed alcohol use disorders, supported prior research that these children are at greater risk for alcohol use problems. However, greater perceived risk by the

children resulted in lower drinking levels thus demonstrating that alcohol expectancies determine behaviours and can be modifiable (Haller & Chassin, 2010). This finding was echoed by an Australian qualitative study, where parents reported that their own parents' or grandparents' alcohol use influenced their choice to become non-drinkers or light drinkers, and also reported that excessive drinking by spouses had polarised responses in their children, with some being deterred from drinking and others becoming heavy drinkers (Gilligan & Kypri, 2012). Thus the influence of parental drinking is likely mediated by additional variables either creating a protective effect or increasing the risk for negative outcomes.

While some children exposed to parental drinking do not experience adverse effects, there is an overwhelming body of research to show that parental drinking has negative impacts for drinking behaviour in offspring. Greater understanding of the factors that buffer children against the adverse impacts associated with parental alcohol problems is needed.

CHAPTER 5. SYNTHESIS AND OVERVIEW OF THE FINDINGS

This review has demonstrated that there is a large body of research showing significant associations between parental alcohol use disorders and a range of problems in family life and functioning. These problems include, but are not exclusive to, parent and family conflict and violence, parental separation and divorce, parent mental health and other substance use problems, economic problems, disrupted parenting, parent-child relationship problems, and a range of mental health and cognitive disturbances and substance use in offspring. This review has shown that these problems often co-occur in families affected by parental drinking problems, particularly in families where both parents abuse or depend on alcohol. As many studies in the literature reviewed have been cross-sectional, problems in family life cannot be attributed solely to alcohol use. Rather, it is likely that these factors interact in complex and dynamic ways, as well as with other macro- and local environmental factors, to determine the specific impacts for each family.

Evidence that parental alcohol use disorders lead to family functioning problems is stronger for some factors included in this review than for others. Table 4 summarises the empirical evidence for the relationship between parental alcohol use problems and the key family-related outcomes reviewed in this report. Table 4 highlights that most of these factors are known correlates of alcohol use disorders in parents and adults. Despite the paucity of longitudinal research on some of these factors, there is evidence to suggest that drinking problems prospectively predict a number of negative outcomes (e.g. male-perpetrated intimate partner violence, FASD from drinking in pregnancy). There is also evidence that reciprocal, or bi-directional relations exist between alcohol problems and some variables (e.g. male-perpetrated intimate partner violence, separation and divorce, comorbid mental health and substance use issues, and financial problems and employment). Other findings that emerged less frequently are described in the text, rather than displayed in Table 4. The final column in the table indicates whether longitudinal research has been conducted in Australian participants, and reveals that there has been limited prospective research on this issue in Australia. Finally, it should be noted that Table 4 does not provide information on the robustness of the findings; rather it provides a general overview of results. Readers are referred to the relevant section in the review for more detailed information.

Table 4: Summary of research evidence for a significant relationship between alcohol use disorders and problems in family life

Variable	Cross-sectional	Longitudinal	Reciprocal	Australian participants (Longitudinal)
Parental and Family Functioning Problems				
Intimate partner/marital dissatisfaction and conflict	✓	✓	✓	
Male-perpetrated violence	✓	✓	✓	
Female-perpetrated violence	Mixed			
Separation/divorce	✓	Mixed	✓	
Family communication problems and conflict	✓			
Family violence	✓			
Family organisation and routine	✓			✓
Economic/financial problems	Mixed	✓	✓	
Social isolation	✓	Mixed		
Comorbid mental health and substance use disorders	✓	✓	✓	
Problems in Parenting and Children				
Inconsistent parenting	✓		NA	
Deficits in nurturance	✓	✓	NA	
Interaction problems	✓	✓		
Attachment problems	✓			
Parent-child relationship problems	✓	✓	NA	✓
Poor monitoring/socialisation	✓	✓	NA	
Parentification	✓		NA	
Child abuse	Mixed	Mixed		
Parent attitudes to adolescent drinking	✓	Mixed	NA	✓
Parent modeling of alcohol use	✓	✓	NA	✓
Parental supply of alcohol and adolescent initiation	Mixed	✓	NA	✓
FAS and FASD (maternal alcohol use in pregnancy)	✓	✓	NA	✓
Physical health disturbances	✓	Mixed	NA	
Behavioural, psychological and emotional disturbances	✓	✓	NA	
Cognitive deficits	✓	Mixed	NA	
Alcohol use problems	✓	✓		✓

Note: ✓ = Evidence of a significant cross-sectional, longitudinal or reciprocal relationship.

Mixed = Mixed evidence. NA = Not applicable.

While considerable progress has been made in understanding the relationship between parental alcohol use disorders and the impacts on family life and children, there is a need to draw together theoretical and empirical knowledge of these effects into a multivariate model of influence. A conceptual model has therefore been proposed to summarise the research that has been reviewed, and to provide an overall picture of the links identified between parental alcohol abuse and dependence and family life (see Figure 3). This model is derived from Jacob and Leonard's model (1994) (see Chapter 3) and has been adapted to incorporate the empirical findings presented in this review. The model depicts the risks associated with parental alcohol use problems and their adverse impacts on family functioning and children. It is important to note that this model is conceptual. Where evidence is available, the likely direction of influence has been depicted. However, due to the paucity of longitudinal and controlled intervention studies, the relationships in the model do not represent causal or statistical relationships. Future research will need to determine the precise nature of the relationships between these variables.

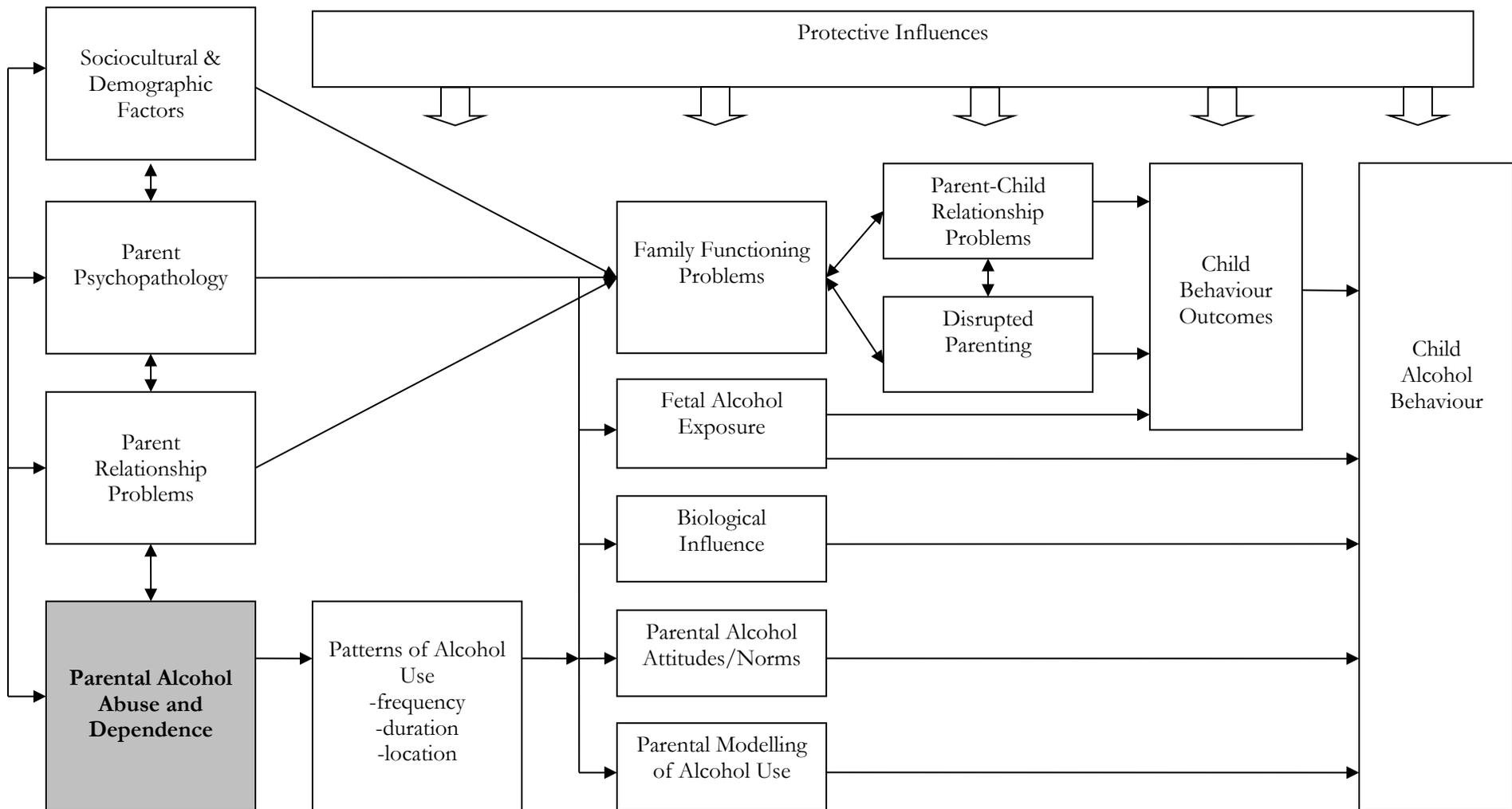


Figure 3: Conceptual model of the relationships between parental alcohol use disorders and family functioning

Marital and intimate partner relationship quality

Relationships where one or both partners drink heavily are characterised by poor relationship functioning, including marital dissatisfaction, elevated levels of conflict and physical violence, and an increased risk for relationship breakdown, separation and divorce. Longitudinal studies indicate that alcohol dependence predicts marital dissatisfaction and divorce across time. Some people also appear to use alcohol as a short-term means of coping with relationship breakdown, but there is insufficient evidence to show that separation and divorce increase the risk for alcohol abuse or dependence.

The relationship of alcohol use with male perpetrated physical violence appears to be reciprocal, with excessive alcohol consumption in men increasing the risk of male-to-female violence, and violent behaviour reciprocally increasing the risk of problematic drinking. The effects of alcohol use disorders in women are less well studied than in men. Women who abuse alcohol may be at greater risk of victimisation by their male partner. Females who abuse alcohol are also at increased risk for perpetration of female-to-male violence; however, these findings are inconsistent.

In the proposed model, parental relationship quality is connected with alcohol use problems via a bi-directional arrow. This bi-directional arrow represents both the cross-sectional associations and the prospective links that have been identified between alcohol use disorders and parental relationship problems. As described in the present report, families in which parents abuse alcohol are often characterised by a cluster of other psychosocial and mental health problems. For this reason, pathways have been drawn between parent relationship problems and both comorbid psychopathology and other psychosocial risk factors. A pathway was also included from parental relationship problems to problems in family functioning, as this link is widely acknowledged in the literature.

Family functioning

Families with an alcohol-dependent or abusing parent frequently report problems in family functioning. These problems can include communication difficulties, poor family cohesion, and elevated levels of conflict and violence. Data on Indigenous people show that family violence is highly prevalent in some communities and is frequently associated with alcohol consumption.

Parental alcohol use disorders are commonly associated with disruptions in family organisation and routines, and with economic problems that are related to money spent on alcohol, difficulties sustaining job performance or loss of employment, and medical costs due to alcohol-related health problems or accidents. These problems are also related to lower rates of involvement and success among parents and families in treatment.

In the conceptual model, a direct pathway was included from parental alcohol use disorders to family functioning disruptions. Bi-directional pathways were also included between family functioning and both parent-child relationship quality and parenting disruptions.

Co-occurring mental health and other substance use disorders in parents

Alcohol use disorders frequently co-occur with other substance use disorders and with psychological illnesses, including depression, anxiety, psychosis and personality disorders. While the specific pathways via which alcohol and other mental health problems impact on family life are unclear, families where one or both parents suffer comorbid mental health and alcohol use disorders are at high-risk for a range of negative outcomes. These effects appear likely to vary as a function of the type and severity of comorbid disorders experienced by a parent. Based on the evidence reviewed, it is reasonable to conclude that the harms discussed in this review, such as family conflict and violence, economic difficulties, parenting disruptions, and mental health problems in children, occur more frequently and are more severe in families where comorbid alcohol and other mental health problems are present. In the conceptual model, parental psychopathology is bi-directionally linked to parental drinking problems. A pathway was also included from parent psychopathology to family problems, as this link is widely acknowledged in the literature.

Parenting

Parenting is disrupted in families where one or both parents are problem drinkers. Parental alcohol use problems are associated with inconsistent parenting, infant attachment problems, lack of parental sensitivity and nurturance, and inadequate child monitoring and socialisation. There is also evidence that parents who abuse alcohol sometimes abdicate their parenting roles, leaving children to take on roles and responsibilities that are inappropriate for their age.

Parental alcohol use disorders are associated with a small to moderate increase in risk for child abuse. It is notable that Indigenous children are significantly over-represented in most child protection reports of abuse or neglect. The extent and pervasiveness of parental alcohol exposure, and the presence of a range of other risks, both appear to increase the risk for child abuse. However, there is insufficient evidence to suggest that alcohol problems directly lead to child abuse.

Based on the literature reviewed, there appear to be a number of pathways of influence via which parental alcohol use problems might lead to ineffective parenting. For example, elevated levels of paternal drinking have been shown to directly predict negative parent-infant interactions in both fathers and mothers. The presence of parental psychopathology and marital conflict have also been shown to mediate this relationship, indirectly increasing the risk for negative parent-child interactions. Additionally, poor parental monitoring and socialisation appears to be characteristic of families with parental alcohol misuse and has been shown to lead to problems through the development of negative parenting practices.

Although prospective research is needed to disentangle the pathways of influence, current research supports the notion that alcohol interferes with a parent's ability to parent effectively (Jacob & Leonard, 1994). In the conceptual model, parenting disruptions have been conceptualised to be bi-directionally related to the quality of the parent-child relationship. Through these pathways, parental drinking problems are depicted as influencing negative outcomes in offspring, including alcohol use behaviour.

Physical, cognitive and mental health outcomes in offspring

Alcohol consumption at high levels during pregnancy, particularly chronic heavy alcohol use or frequent heavy intermittent alcohol use, leads to a range of adverse outcomes in children, including FASD. The question of whether there is a safe level of drinking during pregnancy remains to be established. While low-to-moderate alcohol intake during pregnancy does not appear to be associated with an increased risk of fetal malformations, it may have detrimental behavioural or cognitive consequences.

Children of alcohol abusing parents are at elevated risk for a range of maladaptive outcomes in childhood, adolescence and into adulthood, including increased health service utilisation, disturbances in psychological and emotional development, behavioural disorders, cognitive deficits and alcohol use problems. Longitudinal cohort studies provide evidence that child psychopathology can be predicted from parental alcohol use. The literature suggests that there is considerable variation in outcomes, and that this variability in individual outcomes is likely to be influenced by the severity of parental drinking, as well as the presence of other childhood stressors, including comorbid parental pathology, childhood abuse and family dysfunction.

Parents' own use of alcohol significantly increases the likelihood that their adolescent children will engage in alcohol use. Possible mechanisms of influence on adolescent drinking may include parental modelling of alcohol use, a biological susceptibility to alcohol use problems, family norms and parental attitudes regarding drinking, parental monitoring of adolescent drinking and the supply of alcohol to children by parents. Early initiation to drinking significantly increases the risk for alcohol use problems in adolescence and later life.

Evidence indicates that not all children raised in an environment characterised by parental drinking problems necessarily go on to develop problems in their mental health and well-being. A number of protective factors that buffer family members against the potential negative effects of exposure to parental drinking have been identified. These include high levels of family support, control and cohesion, a non-drinking parent or caregiver who can mitigate the effects of the problem drinker, fewer socio-economic stresses and the presence of social supports outside the family (e.g. school, friends and the community). Drinking patterns also appear to be important, with out-of-home and more stable drinking patterns being associated with better family functioning.

CHAPTER 6. CONCLUSION AND FUTURE DIRECTIONS

In this chapter, a series of conclusions are made based on themes that emerged in the review. These conclusions aim to guide national policy and practice relevant to families affected by alcohol use problems, and to provide directions for future research on parental alcohol use disorders and related harms to Australian families.

Conclusion 1: The extent of harmful drinking patterns and alcohol use disorders among Australian parents is significant.

There is only a small body of research on the epidemiology of alcohol use disorders and drinking patterns among Australian parents. These data show that alcohol use is common in Australian families. Harmful drinking patterns, such as frequent and risky drinking, also appear to be reasonably common among adults responsible for the care of young people. Alcohol abuse and dependence are less common among parents in the general community, but are widespread among high-risk sub-groups of parents and caregivers (e.g. parents of children in the out-of-home welfare system, or parents affected by comorbid mental health and other substance use problems).

Epidemiological studies would help to ascertain the prevalence and incidence of parental alcohol use disorders, including heavy and risky drinking patterns, as well as more common patterns of alcohol use in the general community. Surveillance of changes in parental use of alcohol would also help to assess the need for prevention and intervention in Australian families, and to ascertain those groups in the community most in need of information, support and treatment services.

Conclusion 2: Alcohol abuse is common among Indigenous Australians and has frequently been linked to family violence.

While it is known that fewer Indigenous than non-Indigenous Australians consume alcohol, it has been shown that when they do drink they tend to consume alcohol at riskier levels. It is unclear whether this pattern decreases significantly following the transition to parenthood. There is also evidence that family violence occurs at elevated rates in some Indigenous communities. While alcohol is likely to be linked to such conflict and violence, its role is not clearly understood. Indeed, there is relatively limited research on the impacts of parental alcohol use disorders on family functioning and children in Indigenous communities. Thus, a range of issues remain poorly understood and a greater investment in better understanding this area would appear to be crucial.

Conclusion 3: Parental alcohol use disorders are associated with a range of problems in family life.

There is a large body of research showing significant associations between alcohol use disorders in parents and problems in family life. These family-related problems include, but are not limited to, marital and intimate partner relationship problems, family dysfunction, comorbid substance use and mental health disorders in parents, disruptions in parenting, and a range of negative outcomes in the health and well being of children (e.g. birth defects, physical, psychological, emotional and behavioural disturbances, cognitive delays and alcohol use problems). It is evident that problems in these areas frequently co-occur in families where one or both parents have a drinking problem. Evidence also suggests that there is considerable variability in the impact of parental

drinking problems from one family to another, and that this variability is influenced by both the severity and frequency of parental drinking, as well as the presence of other risks and protective factors. Families where both parents report alcohol abuse or dependence, and those characterised by multiple risk factors, appear to be at greatest risk for adverse outcomes in family life.

Conclusion 4: Consideration of a developmental perspective is important in planning future policy and practice.

The findings of this review indicate that (a) there are numerous developmental pathways via which alcohol use problems in parents can impact on family life, and (b) that alcohol use problems in parents interact in complex and dynamic ways with other risks at different stages of individual and family development. Taking a developmental approach to understanding the effects of parental alcohol abuse and dependence acknowledges that there are also multiple pathways and opportunities for intervention. It would be helpful to better understand the effects of parental alcohol use disorders at different stages of development because this knowledge has implications for how policy and practice can best be tailored to Australian families at different developmental stages and transition points. For instance, it appears that interventions at specific time points may be warranted with different families (e.g. treatment for mothers drinking heavily in pregnancy, promotion of healthy parent-infant relationships in infancy, and parent education regarding monitoring and limit setting around adolescent alcohol use).

Conclusion 5: Treatment and intervention efforts should address the multiple risks experienced by families affected by parental drinking problems.

There is emphasis in both the research world and among policy-makers on the development of effective preventative interventions and treatments for parents and families that are brief and economical. While such interventions may be suitable for families experiencing less severe drinking problems or those characterised by few compounding risk factors, families affected by multiple risk factors are likely to require more intensive, longer-term and integrated support from community services and treatment providers. Consistent with the developmental perspective, multiple interventions with high-risk families at key points in development may be warranted. Greater support is needed for these high-risk families to interrupt the trans-generational cycle of problems that commonly occur in such families.

Conclusion 6: Prenatal exposure to alcohol increases the risk for a range of physical, cognitive and mental health problems in children, including Fetal Alcohol Syndrome Disorders (FASD). The question of whether there is a safe level of drinking during pregnancy remains to be established.

Alcohol consumption at high levels during pregnancy, particularly chronic heavy alcohol use or frequent heavy intermittent alcohol use, leads to a range of adverse outcomes in children, including FASD. In Australia, the available evidence suggests that the birth prevalence of fetal alcohol syndrome is relatively small in the general community. However, the syndrome appears to be a particular issue of concern among Indigenous communities.

Survey data indicate that the majority of Australian women report a decrease in their use of alcohol following conception. Despite this decrease, almost half of all women who are pregnant and/or breastfeeding continue to drink alcohol. This is of concern because there is some evidence that low-to-moderate levels of alcohol consumption in pregnancy may impact negatively on embryo and fetal development. The most likely effects at these

levels, if effects occur, are abnormalities in the developing embryo and subtle neurobehavioral problems (e.g. evident by decreased psychomotor performance, verbal learning and memory, and academic achievement). There appears to be some evidence for a dose-response association; however, a threshold level below which consumption is not teratogenic has not been established.

Given that many Australian women continue to drink during pregnancy, greater investment in determining the impact of low-to-moderate drinking would appear to be crucial. Knowledge of the effects of differences in the dosage and timing of drinking, and the relative impact of maternal health and psychosocial factors on infant development, would inform current guidelines and policy on the use of alcohol in pregnancy.

Conclusion 7: The early introduction of alcohol to children and young people by parents may increase the risk for future drinking problems.

Many Australian parents educate their children about alcohol in what would appear to be a safe manner, by introducing them to alcohol in a supervised environment around early adolescence. Evidence indicates, however, that early initiation to alcohol can increase the risk for future drinking problems, leading some researchers in the field to argue that parents should delay children's introduction to alcohol. The findings of this review reveal that other factors may also play a role in this relationship. There is evidence, for example, that adolescents who commence drinking at a young age and who subsequently go on to misuse alcohol in late adolescence or adulthood, have been exposed to other familial and social risks that, together with early exposure to drinking, increase the risk for adverse outcomes. This risk would appear to be elevated among young people who live in home environments that adopt generally permissive and encouraging attitudes to alcohol use.

Given the importance of this issue for Australian health policy, longitudinal research is needed to determine whether early initiation is itself a key risk factor for the later development of alcohol problems, or whether the presence of other factors, in combination with early exposure, increases the risk for negative outcomes. An alternative that also needs to be tested is whether early initiation is actually a marker for the presence of other risks that account for the increased likelihood for developing alcohol use problems. Teasing apart the relative contribution of early initiation to drinking from other family and social risks will have important implications for parent education around adolescent alcohol use and national policy in Australia.

Conclusion 8: The protective factors within families that minimise the negative impact of parental alcohol use problems should be promoted.

Evidence indicates that not all children raised in an environment characterised by parental drinking problems necessarily go on to develop problems in their mental health and well-being. Compared to the large body of cross-sectional research examining the risks associated with parental alcohol abuse and dependence, knowledge of factors that buffer family members against the potential negative effects of exposure to parental drinking is limited. Some factors that have been identified in the literature are high levels of family support, control and cohesion, a non-drinking parent or caregiver who can mitigate the effects of the problem drinker, fewer socio-economic stresses, child resilience, and access to social supports outside the family (e.g. school, friends and the community). Drinking patterns also appear to be important, with out-of-home and more stable drinking patterns being associated with better family functioning. Greater investment in understanding the protective factors within families and individuals that

minimise the negative impacts of parental alcohol use problems would assist in the development of prevention and treatment interventions for Australian families.

Conclusion 9: More Australian research, especially longitudinal research, is needed to promote understanding of the processes and developmental pathways via which parental alcohol use impacts on family life.

This report indicates that we have a good understanding of the associations between parental alcohol use disorders and problems in family life. However, the paucity of Australian research in the field, especially longitudinal research, means that knowledge of the complex pathways of influence is limited. At present, the international research is relied upon to a large extent. Yet there are important differences in cultural norms and attitudes, which may lessen the transferability of the international research to the Australian context. There would be significant value from investing in more Australian research on these issues.

Evidence presented in this review also highlights the need for a shift in research focus in Australia – away from cross-sectional studies of association and toward carefully planned, longitudinal research examining multiple pathways of influence at different stages of the lifespan. Greater emphasis should be placed on understanding the complex interplay of risk and protective factors, and the impact of interventions, over multiple developmental stages. The undertaking of this kind of research will inevitably require greater collaboration among groups with expertise in the alcohol and drug field, and among expert researchers in areas such as developmental psychology, mental health, medicine and economics. This kind of large-scale collaborative research in Australia will improve knowledge of the complex pathways via which parental alcohol use disorders impact on family life and children and will guide the development of effective preventative and treatment interventions. Such research will directly inform national policy decisions relating to the health and well-being of Australian families.

A short-term valuable way forward is to capitalise on the existing Australian cohort studies to better understand pathways of influence and family-related impact across time. While this approach will provide short-term advances, it is important to acknowledge that the existing available data sources in Australia do not have sufficiently detailed information to answer the more complex questions raised. For this reason, a longer-term investment is also recommended. This would involve investment the establishment and maintenance of a cohort of Australian parents to determine the impact of alcohol use on family functioning and children, including the role of mental health, psychosocial and protective factors discussed in this report.

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