Does family intervention for adolescent substance use impact parental mental health? A systematic review

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Abstract

Adolescent substance abuse is a prevalent problem and both individual and group family interventions are increasingly being used to assist families to cope. A literature review was conducted to identify whether individual and group family interventions for adolescent substance abuse enhance the mental health of parents and other family members. The review also sought to identify direct and indirect effects of family intervention processes on depressive symptoms and general distress. Based on quality criteria a total of nine studies were included. Of these, six quantitatively examined family intervention outcomes on family member mental health, with all six reporting positive effects. Four of the nine studies measured levels of depressive symptoms and three of these four studies reported significant direct effects of family intervention on parental depression. The positive effects were also found in the three qualitative studies included in the review. Indirect therapeutic mechanisms that contributed to mental health improvements included: reduction of stress symptoms, improved coping, improved family functioning, more effective parenting behaviours, attitude changes, perceived changes in relative’s substance use, and improved social support. The available literature suggests that a number of determinants of family mental health may potentially be impacted through family intervention for adolescent substance abuse. However, definitive conclusions cannot be made at this point as the literature is mostly descriptive and there have been few longitudinal studies or randomised controlled trials.

Keywords

adolescents, substance abuse, family intervention, parenting, wellbeing, depression

Introduction

A growing body of literature suggests that parents and families are likely to experience adolescent substance abuse problems. Recent data demonstrates that between one quarter and over one fifth of Australian secondary school adolescents have either experimented with or are currently daily or weekly users of substances (e.g., alcohol, tobacco, illicit substances, see Australian Institute of Health & Welfare [AIHW], 2007). The available research suggests that adolescent substance misuse can result in secondary disorders by undermining the mental health of parents. That is, parents suffer significant distress as a result of living with adolescent substance use (Butler & Bauld, 2005; Oreo & Ozgul, 2007). Adverse effects experienced by parents include psychological, somatic and social stresses which can lead to long-lasting psychological somatic morbidity (Orford, Natera, Davies et al., 1998; Velleman, Bennett, Miller et al., 1993).
For parents, stress-related symptoms can include depression, anxiety, fear of danger, guilt, anger, despair, as well as grief associated with failure in the parental role (Oreo & Ozgul, 2007; Toumbourou, Blyth, Bamberg & Forer, 2001). These stress-related symptoms may undermine parent and family influences that potentially reduce adolescent substance use, such as effective monitoring, family cohesion and positive parent-child relationships (Butler & Bauld, 2005; Dekovic, 1999; Ozechowski & Liddle, 2000).

A growing number of family intervention strategies have been developed and evaluated to reduce youth alcohol and/or drug use and abuse. Strategies include family-based therapy interventions such as counselling sessions involving pre-teens or adolescents currently manifesting behavioural problems, along with parents and/or other family members (Kumpfer & Alvarado, 1998; Toumbourou & Gregg, 2001) and behavioural parent training which stresses parental use of effective discipline techniques (see Kumpfer & Alverado, 1998). Evidence demonstrates that family-based therapeutic interventions can significantly reduce levels of adolescent substance use and behaviour problems, increase the adolescent’s involvement with school, and improve family functioning (Ozechowski & Liddle, 2000).

However, only recently has interest widened to explore the effectiveness of family interventions on the mental health of parents with adolescents who abuse substances. Families have been shown to be a potentially important resource for assisting recovery from adolescent substance abuse (Bry, Catalano, Kumpfer et al., 1998; Rowe, Liddle, McClintic & Quille, 2002). However, in order for families to play a beneficial therapeutic role it is important to firstly address the mental health of family members (Toumbourou & Bamberg, 2008).

A growing body of family intervention models aim to directly impact parental and family member mental health using therapeutic interventions such as stress management and cognitive behavioural strategies (Copello, Orford, Velleman et al., 2000; Copello, Templeton, Krishnan et al., 2000). These studies have demonstrated reductions in physical and psychological symptoms as well as family reports of changes in family member substance consumption (Copello, Velleman & Templeton, 2005). Thus it is expected that family intervention models that directly address parental mental health will lead to both improvements in parental wellbeing and changes in adolescent substance misuse.

In other cases, family intervention may improve mental health ‘indirectly’ by influencing a range of determinants of mental health. Research is briefly summarised below that describes potential influences on mental health that may be targeted in family interventions addressing youth substance misuse.

Depression, mental health and stress symptoms are known to be influenced by biopsychosocial factors (Gilbert, 1992). Family intervention approaches aimed at addressing adolescent substance abuse impact on a range of factors that have been shown to influence parental depression. For example, Ensel and Lin (1991) demonstrated that social support directly and significantly reduced levels of distress and mediated the effects of environmental stressors on distress (Ensel & Lin, 1991). Depression is also hypothesised to be predicted by ineffective coping mechanisms (see McGillicuddy, Rychtarik, Duquette & Morsheimer, 2001; Orford, Rigby, Miller et al., 1992). Proponents of the stress-strain-coping support model (Copello et al., 2005; Orford et al., 1992) hypothesise that more effective parental coping responses to adolescent substance use and behavioural problems will improve the parent’s own mental health and reduce youth substance use.

Other modifiable determinants of depression include family conflict (Shek, 1997; Silverberg & Steinberg, 1984) and family stressors (Voydanoff & Donnelly, 1998) such as child behaviour and substance use problems (Ralph, Toumbourou, Grigg et al., 2003). Attitudes can also influence depression. For example, depressive symptoms are likely to be elevated where parents blame or attribute responsibility to themselves for child behaviour problems (Toumbourou et al., 2001).

The aim of the present paper was to conduct a systematic literature review to identify whether the extant studies evaluating family interventions
for adolescent substance use demonstrate impacts in enhancing the mental health of parents and family members. The review sought to identify both direct and indirect intervention effects on depressive symptoms and general distress. Few studies have focused on determining which aspects of family intervention are important in enhancing family member wellbeing where substance use is a concern. Further, there currently exist few systematic reviews that explore the potential for family interventions directed at adolescent substance use to impact positively on family member distress and mental health. Family interventions that aim to directly reduce parental depression or that target logical determinants of parental depression may have greater advantages for mental health compared to interventions that focus on substance use reduction only.

Method

Search strategy
To identify relevant studies, a literature search was conducted of electronic abstraction services from 1975 to 2007. Search strategies were conducted for the PsycINFO, Medline, Science Direct, PubMed, Proquest, Informaworld, OVID, EBSCO Host, and Expanded Academic ASAP databases. Search strategies included the key terms (‘parent* wellbeing’ or ‘parent* stress’ or ‘parent* strain’ or ‘parent* distress’) and (‘youth’ or, ‘young people’ or, ‘adolescen*ce’, ‘adolescents’) and (‘substance abuse’, ‘misuse’, or ‘use’) and (‘parent-adolescent conflict’ or parent-adolescent relationship’ or ‘family members’) and (‘family intervention* or ‘family support’ or ‘family based intervention’ or ‘family therapy’) and (‘longitudinal’, or ‘follow-up’). Electronic searches identified 109 articles. Papers with abstracts appearing to meet the inclusion criteria were retrieved and further inspected. Retrieved paper citations were further scrutinised for additional publications that may not have emerged through the literature search strategies.

Inclusion and exclusion criteria
In order for studies to be considered for this review they were required to: (a) be published between 1975 and 2007 in peer-reviewed, international, English language publications; (b) report on a minimum of two waves of data collection (longitudinal); (c) include outcomes of reliable and valid measures of parental/family member stress, strain or depression; and (d) include as predictors components of family interventions that address the effect of one or more family members use of substances (and/or the effect of behavioural or conduct problems that include substance abuse). In this review, both parents and relatives of substance users will be referred to as ‘family members’.

Studies were included regardless of design as the authors’ primary objective was to review intervention components that were effective in reducing parental distress, and there appeared to be few relevant randomised trials published. As few studies were found that explored parental distress, the search was widened to studies exploring the effects of interventions on levels of distress in ‘family members’ that included parents of substance users. Studies were excluded from the review where the sample did not include parents of substance users.

Results
This section is comprised of results of: i) direct effects of family intervention on family member mental health; ii) indirect mechanisms impacting family member mental health assessed quantitatively, and; iii) indirect outcomes impacting family member mental health from studies that employed either qualitative or mixed methods analysis. In cases where researchers have included an effect size and 95% confidence intervals, these have been reported.

I. Direct effects on family member mental health

Depression and mental health
Of the nine studies included in this review, four examined direct effects of interventions on depression and mental health of family members (see Table 1). Three of the studies found significant direct intervention effects from family interventions for adolescent substance use/behaviour problems on improving levels of family member depression or general mental health (Irvine, Biglan, Smolkowski et al., 1999; Meyers, Miller, Hill & Tonigan, 1999; Toumbourou et al., 2001). McGillicuddy et al. (2001) found a non-significant trend in reducing family member depression.
Irvine and colleagues (1999) evaluated the effectiveness of a parenting skills program for parents of children (mean age 12) with mild to moderate behaviour problems (which included known or suspected substance use) in reducing parental depression. Parents \((N = 303)\) were referred by their school or by social service agency staff on the basis that their child had met the criteria for more than three risk factors on a checklist of 12 child risk behaviours (Bry, McKeon & Pandina, 1982, cited in Irvine et al., 1999). The parents in the study were randomly assigned to either receive immediate treatment or to receive treatment three months after the immediate treatment group had completed the sessions (wait-list control). Participants took part in 12 weekly parenting skills sessions (between 90 minutes and 2 hours long). A significant decrease in Beck Depression Inventory (BDI: Beck, Steer & Garbin, 1988) scores was found post-intervention favouring the parenting skills group parents compared to the wait-list parents \((p = .009)\).

McGillicuddy and colleagues (2001) examined the effectiveness of a skills training program developed by the researchers in reducing levels of parental depression in a group of parents with children aged 12-21 years with parent-reported active engagement in substance use. Parents from 22 families were selected after responding to advertisements in public news media of a program designed for parents coping with problems resulting from their adolescent’s substance use. To meet inclusion criteria parents had to report that the child was engaged in a minimum of monthly use of alcohol or illicit substances over the previous 6 months and had lived under the same roof for at least 30 of the previous 90 days. The participants were randomly assigned to receive treatment either immediately or following an 8-week delay. The parents participated in eight weekly 2-hour coping skills training sessions. Regarding parental depression, there was a non-significant trend favouring the skills training parents \((p < .10, \text{Effect Size } [ES] = 0.18)\).

Meyers et al. (1999) examined the effectiveness of a Community Reinforcement and Family Training (CRAFT) program (Meyers & Smith, 1997) in reducing family member depression. Participants were 62 family members (including 33 mothers and two fathers) who responded to advertisements for a free program for individuals who were attempting to cope with a significant other who was experiencing substance use problems but was unwilling to enter treatment. For family members to be eligible for the study, significant others needed to meet the criteria for a primary diagnosis of drug abuse or dependence and not have received treatment in the past 3 months (Meyers et al., 1999). The program consisted of 12 reinforcement-based family treatment sessions delivered to family members with the aim to help them to intervene and engage the user in treatment. The substance users in this program constituted a range of ages, but included individuals in late adolescence \((n = 44)\). A significant reduction was found in depression scores on the BDI at the 3 and 6 month follow-ups \((p = .01; \text{ES} = 0.86)\) for family members. This effect was independent of the substance user entering treatment.

In Australia, Toumbourou et al. (2001) evaluated the effectiveness of the Behavioural Exchange Systems Training (BEST; Blyth, Bamberg & Toumbourou, 2000) program, an 8-week (2 hours per session), unilateral parent-group intervention for parents concerned by adolescent substance use problems. The evaluation investigated reductions in parent mental health symptoms, using the General Health Questionnaire (GHQ: Goldberg & Williams, 1988). Parents from 48 families \((N = 66)\) concerned by substance abuse in a child aged between 12-24 years responded to advertisements distributed to drug treatment and welfare agencies. Criteria for substance abuse included illicit drug injection, substance use that disrupted school or significant role development, and substance use linked with antisocial behaviour or harm to others (Toumbourou et al., 2001). Other inclusion criteria were not mentioned (e.g., child’s dependence on participants for accommodation, financial support, and so on). Participants were not randomly assigned to either immediate treatment or wait-list conditions; instead they were assigned by convenience (e.g., time of contact to study or availability of places in the program). The results demonstrated reductions in mental health problems favouring intervention group parents at the conclusion of the program (adjusted odds ratio, 0.18; 95% CI = 0.05, 0.60).
Table 1. Summary of descriptive characteristics from six quantitative studies reviewed

<table>
<thead>
<tr>
<th>Study</th>
<th>Exposure treatment</th>
<th>Participant</th>
<th>Substance user</th>
<th>Retention post-intervention (%)</th>
<th>Follow-up</th>
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</thead>
<tbody>
<tr>
<td>Copello, Templeton et al. (2000)</td>
<td>Structured treatment package</td>
<td>N = 38 (29 family members and 9 parents)</td>
<td>Baseline sample (N) = 38</td>
<td>Mean age = 38.8 yrs</td>
<td>Child 24.3 yrs</td>
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<td>Partner 48.2 yrs</td>
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<td>Parent 54 yrs</td>
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<td>Sister 29.5 yrs</td>
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<td>Relationship to user &amp; gender: Mother (18.4%)</td>
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<td>Father (5%)</td>
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<td>Sister (5%)</td>
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<td>Daughter (5%)</td>
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<td>Wife/female partner (50%)</td>
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<td></td>
<td>Husband/male partner (15.7%)</td>
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<td>Irvine et al. (1999)</td>
<td>Adolescent Transition program (ATP) (151)</td>
<td>N = 303 parents</td>
<td>Pre-int (T1)</td>
<td>Mean age = 37.3 yrs (SD = 6.2)</td>
<td>Child 12.2 yrs (SD = 1.1)</td>
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<td>2. Wait-list control (152)</td>
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<td>Post-int (T2)</td>
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<td>Parent</td>
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<td>3 mth (T3)</td>
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<td>Female 94%</td>
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<td>6 mth (T4)</td>
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<td>12 mth (T5)</td>
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<td>McGillicuddy et al. (2001)</td>
<td>Skills training program (14)</td>
<td>N = 22 families</td>
<td>Pre/post int</td>
<td>Mean age = 45.1 yrs (SD = 5.0)</td>
<td>Child 16.3 yrs (SD = 2.0)</td>
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<td></td>
<td>2. Wait-list control (8)</td>
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<td>Parent</td>
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<td>Female 90%</td>
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<tr>
<td>Meyers et al. (1999)</td>
<td>CRAFT program</td>
<td>N = 62 family members</td>
<td>Pre-int/ 3 mth/ 6mth</td>
<td>Mean age = 44.7 yrs (range 18-73 yrs)</td>
<td>Parent 29.8 yrs</td>
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<td>Child</td>
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<td>Sibling</td>
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<td>Maternal spouse</td>
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<td>Unmarried intimate partner</td>
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<td>Toubourou et al. (2001)</td>
<td>BEST program (46)</td>
<td>N = 66 parents</td>
<td>Pre-int (T1)</td>
<td>Mean age = Not reported</td>
<td>Child &gt; 18 (29%)</td>
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<td></td>
<td>2. Wait-list control (20)</td>
<td>8 weeks (T2)</td>
<td>16 weeks (T3)</td>
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<td>18-21 (27%)</td>
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<td>21+ (44%)</td>
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<tr>
<td>Toubourou &amp; Bamberg (2008)</td>
<td>BEST Plus program</td>
<td>N = 34 parents (Sole parent families 38%)</td>
<td>Pre/post int</td>
<td>Mean age = Not reported</td>
<td>Child</td>
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<td></td>
<td>Female 62%</td>
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Note: Indiv = Individual; Int = Intervention.
Psychological and somatic distress symptoms

Two studies examined the effectiveness of family intervention programs in improving psychological and/or somatic distress symptoms (Copello, Templeton et al., 2000; Meyers et al., 1999, see Table 1). Both reported positive effects.

In the United Kingdom, Copello, Templeton and colleagues (2000) examined the effectiveness of a 5-step psychosocial treatment package developed by the researchers in reducing psychological and somatic symptoms. Up to five counselling treatment sessions with a primary health care professional and information leaflets were delivered to nine parents and 29 family members. They were recruited by primary health care professionals who were trained to identify eligible participants approaching services as well as to deliver the structured treatment package. To meet inclusion criteria, family members had to report experiencing severe stress as a result of a significant other’s substance abuse (as measured by the Coping Questionnaire [CQ], Orford, Guthrie, Nicholls et al., 1975; and the Symptom Rating Test [SRT], Kellner & Sheffield, 1973) as well as having the significant other being dependent on them for accommodation. Significant pre- to post-program decreases were observed in both psychological and somatic symptoms, as measured by the SRT (Kellner & Sheffield, 1973; \( p < .005 \)).

Meyers et al. (1999) reported significant benefits post-intervention (\( p < .01 \)) for concerned significant others on physical symptoms measured on a scale devised for their study. Significance levels were reached regardless of whether substance using relatives attended treatment. However no comparison group was utilised in the study.

II. Indirect outcomes impacting depression or mental health: Quantitative studies

The following section provides results from the studies investigating outcomes that could have an indirect impact on depression or mental health. These include changes in stress symptoms, anxiety, anger, coping skills and strategies, family functioning, communication, parental behavioural techniques, parental attitudes, emotional dependence, relationship happiness/satisfaction, and relationship conflict. Six of the nine included family intervention studies quantitatively analysed program effectiveness. These six studies produced a total of 63 assessments of outcome and found 41 significant positive effects on family member wellbeing.

Stress symptoms, anxiety and anger

Three of three relevant studies reported significant positive post-intervention effects of family interventions in reducing stress symptoms (Toumbourou & Bamberg, 2008), anxiety (McGillicuddy et al., 2001; Meyers et al., 1999) and anger (McGillicuddy et al., 2001). Toumbourou and Bamberg’s (2008) pilot study evaluated the effectiveness of the BEST Plus program (an extension of the BEST program developed by Blyth et al., 2000) which encourages sibling involvement in family interventions for those concerned with youth substance abuse. Participating parents (34 parents from 21 families) were recruited from two substance use treatment agencies after seeking assistance with youth substance use related problems (Toumbourou & Bamberg, 2008). To meet inclusion criteria, family members reported adolescent substance use had a negative impact on their personal and family lives, and in addition the substance using child was dependent for accommodation and financial support. Participants took part in 8 weekly sessions that addressed family recovery needs. Significant reductions in parent stress symptoms pre- to post-program were demonstrated as measured by a 4-point Stress Symptoms scale (Blyth et al., 2000; \( p = .008 \), Effect Size [ES] = 0.45).

McGillicuddy et al. (2001) reported significant reductions in anxiety, favouring the intervention group parents (ES = 0.13), as measured by the anxiety subscale of the BDI (Beck et al., 1988), and parental state anger (ES = 0.10), as measured by the State-Trait Anger Expression Inventory (STAXI: Spielberger, 1988). Meyers et al. (1999) reported 6-month post-intervention reductions in anxiety, as measured by the State/Trait Anxiety Inventory (STAI: Spielberger, Gorsuch, Lushene et al., 1983; ES = 0.85).

Changes in coping skills and strategies

Both studies that examined the effectiveness of family interventions on changes in coping skills and strategies reported significant post-
intervention improvements. McGillicuddy et al. (2001) found a significant difference in parental coping, favouring the parents in the skills training intervention group, as measured by the Parent Situation Inventory developed by the researchers ($p < .01$, ES = 0.34). Copello, Templeton et al. (2000) found that an intervention package delivered in primary care services demonstrated significant pre- to post-program improvements in effective coping, as measured by the CQ (Orford et al., 1975; $p < .005$).

**Family functioning and communication**

Four studies examined the effectiveness of family-based interventions for family functioning and communication (Irvine et al., 1999; McGillicuddy et al., 2001; Meyers et al., 1999; Toumbourou & Bamberg, 2008). One of these found significant intervention effects on family functioning (Toumbourou & Bamberg, 2008) and one found a favourable trend (McGillicuddy et al., 2001).

Toumbourou and Bamberg (2008) showed significant increases in cohesive family behaviour following the BEST Plus program as rated on a 4-point Cohesive Family Behavior scale (Toumbourou & Bamberg, 2008), $p = .048$, ES = 0.31. Meyers at al. (1999) found no significant effects of participation in the CRAFT program (Meyers & Smith, 1997) on reports of increased family cohesion or decreases in family conflict as measured by the Cohesion and Conflict subscales of the Family Environment Scale (FES: Moos & Moos, 1981; $p = .62$ and $p = .21$ respectively). McGillicuddy et al. (2001) reported a non-significant trend favouring parents in the skills training group compared to the delayed treatment group as measured by the Parent-Adolescent Communication Scale (PAC: Barnes & Olson, 1986; ES = 0.17). Irvine et al. (1999) found no significant intervention effect on reports of changes in parent-child interaction or spousal interaction as measured by the Family Activities Scale (FAS: Capaldi & Patterson, 1989; $p = .179$).

**Emotional dependence**

To assist parents who are distressed by adolescent behaviour problems, Toumbourou et al. (2001) proposed an intervention process whereby parents’ ‘emotional dependence’ on adolescent behaviour is reduced. Of two studies that examined the effectiveness of family-based interventions in reducing emotional dependence on adolescent behaviour, Toumbourou and Bamberg (2008) reported a significant mediating effect on stress symptoms and Toumbourou et al. (2001) reported significant post-intervention reductions in emotional dependence.

Toumbourou and Bamberg (2008) examined reductions in parental emotional dependence as measured by a 4-point rating scale (Blyth et al., 2000; Cronbach’s alpha T1 = 0.62; T2 = 0.83). There was a non-significant trend toward pre- and post-intervention reductions in levels of emotional dependence. This may be due to the sparsity of measurement items. However, regression analysis used to determine the mediating effect of parental emotional dependence on parental stress symptoms found that the reductions in emotional dependence on adolescent behaviour significantly predicted lower stress symptoms ($p < .04$).

Toumbourou et al. (2001) evaluated reductions in emotional dependence as measured by a 3-item scale of emotional dependence (Blyth et al., 2000). The scale is reported to have demonstrated internal consistency within the sampled population (Cronbach’s alpha T1 = 0.78; T2 = 0.86). The results showed significant post-intervention decreases in emotional dependence for intervention parents ($p < .05$). The scores continued to remain low at the 8-week follow-up (Toumbourou et al., 2001). Regression analysis used to explore the relationship between parental mental health and emotional dependence on adolescent behaviour found that the GHQ score at each measurement point was significantly correlated with emotional dependence ($p < .02$, Adjusted $R^2 = 0.11$).

**Relationship happiness/satisfaction**

Two of three studies found significant post-intervention improvements in parent evaluations of relationship satisfaction and/or happiness. Irvine and colleagues (1999) found significant increases in positive feelings towards the child as measured by the Inventory of Family Feelings (Lowman, 1987; ES = 0.53). Toumbourou and colleagues (2001) found large and significant improvements in parental satisfaction with parent-child relationships ($p < .05$) as well as
parent-partner relationships associated with exposure to the family intervention \( (p < .05) \), both measured by the Kansas Parental and Family Life Satisfaction Scales (James, Schumm, Kennedy et al., 1985). Meyers et al. (1999) reported no significant improvements in regard to family member reports of general relationship happiness as measured by a single item from the Relationship Happiness Scale (RHS) developed by the researchers \( (p = .44) \). However results from their study showed significant improvements in substance user’s reports of general relationship happiness (as measured by a single item from the RHS; \( p = .04 \)).

**Effective child management and parenting attitudes**

Both studies that evaluated the effectiveness of family interventions on assertive parenting behaviours (Irvine et al., 1999; Toumbourou et al., 2001) and parent blaming attitudes (Toumbourou et al., 2001) found significant improvements. Parent blaming attitudes were defined as parents’ ‘attributions of responsibility for adolescent behaviours’ (Toumbourou et al., 2001, p. 301) and measured by the sum of two items developed by the researchers (Cronbach’s alpha T1 = 0.78; T2 = 0.86). Irvine et al. (1999) found significant increases favouring intervention group participants in parental tracking and reinforcing behaviour (ES = 0.47), limit setting (ES = 0.29) and problem-solving (ES = 0.33), all measured by the Taped Situations Test (TST: Dishion et al., 1983, cited in Irvine et al., 1999) The results also showed significant improvements in remaining calm in stressful situations (ES = 0.52), and a non-significant trend for improvements in monitoring and listening (ES = 0.20). Similarly, Toumbourou et al. (2001) reported increased use of behavioural parenting techniques that included assertive parenting techniques, such as tracking and reinforcing behaviour as well as limit setting \( (p < .05) \), which were maintained at the 16-week follow up (measured by a 21-item checklist devised by the researchers; Cronbach’s alpha T1 = 0.75; T2 = 0.72).

**Changes in relative’s substance use/behaviour**

Two of three studies (Irvine et al., 1999; McGillicuddy et al., 2001) that evaluated the effectiveness of family interventions on indirectly reducing a non-participating family member’s involvement with substance use/users found significant positive effects. Irvine et al. (1999) reported significantly larger increases in parental reports of children’s associations with substance using peers from pre- to post-intervention for parents in a waiting-list group compared to parents in the intervention group \( (p = .006) \) as measured by the Parent Daily Report (PDR: Chamberlain & Reid, 1987). McGillicuddy et al. (2001) found greater reductions in parental reports of their adolescent’s number of days of marijuana use for parents in the skills training condition (ES = 0.08) compared to a waiting-list control group, as measured by using the Timeline Followback method (Sobell & Sobell, 1978). However, Toumbourou et al. (2001) found no significant effects that their BEST intervention changed adolescents’ drug use, as measured by a scale devised by the researchers to assess parent efforts to reduce drug use (Cronbach’s alpha T1 = 0.58; T2 = 0.81).

**III. Indirect outcomes impacting depression or mental health: Qualitative/mixed methods studies**

Three studies evaluated the effectiveness of family-based intervention programs using either a qualitative or mixed methods design (Table 2). The studies mostly reported positive effects for the family members (Arcidiacono, Velleman, Fioretti & De Georgio, 2007; Orford, Templeton, Patel et al., 2007; Templeton, Zohhadi & Velleman, 2007), confirming quantitative findings previously discussed for indirect improvements for changes in coping skills and strategies and communication.

Findings from two of the qualitative studies (Arcidiacono et al., 2007; Templeton et al., 2007) also demonstrated improvements in social support for family members. Arcidiacono and colleagues assessed the effectiveness of the ‘5-step intervention’ (based on the stress-strain-coping support model, see Velleman & Templeton, 2003) as administered to family members of substance users by either general practitioners or professionals in the substance misuse services within the South Italian healthcare system. The researchers reported positive effects of the intervention that included the participating family member developing and using a social network.
Table 2. Descriptive characteristics and findings from three qualitative/mixed methods studies reviewed

<table>
<thead>
<tr>
<th>Study</th>
<th>Treatment Type</th>
<th>Format</th>
<th>No. of sessions</th>
<th>Data</th>
<th>Method of analysis</th>
<th>N</th>
<th>Relationship to user</th>
<th>Sex</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arcidiacono et al. (2007)</td>
<td>5-step intervention</td>
<td>Individual - administered by general practitioners (18) or community addiction staff (23)</td>
<td>Mean = 2.3</td>
<td>Open question format delivered by primary health care professionals; focus group generated data (90min)</td>
<td>Assessment and analysis of data from 52 reports by 4 independent judges.</td>
<td>N = 52</td>
<td>Not reported</td>
<td>Not reported</td>
<td>Thirty-seven percent of cases reported reductions in psychological symptoms. Positive aspects of the intervention included: increased social support, family members' increased knowledge and awareness of coping, changes in family ties and conflicts, and listening and support the family member received (50% of reports).</td>
</tr>
<tr>
<td>Orford et al. (2007)</td>
<td>Full or brief intervention based on stress-strain-coping support model</td>
<td>Individual</td>
<td>Not reported</td>
<td>Semi-structured interviews (M = 1 hr 15 min, range 45 min to 2 hr 20 min) with family members 12 weeks post-intervention.</td>
<td>Framework analysis and less structured Grounded Theory</td>
<td>N = 143</td>
<td>Not reported</td>
<td>Not reported</td>
<td>Family members reported positive post-intervention transformations, including reductions in psychological and physical symptoms, calming down and being less emotional in their interactions with their relatives, making links between the relative’s substance use and the family member’s own physical or emotional health, as well as being assertive and focusing on own life and needs. Family members who received the full intervention reported the importance of discussing their problems with a concerned professional.</td>
</tr>
<tr>
<td>Templeton et al. (2007)</td>
<td>5-step family intervention</td>
<td>Individual</td>
<td>Not reported</td>
<td>Interview reports from trained mental health workers administering intervention to family member of substance user.</td>
<td>Thematic qualitative analysis</td>
<td>N = 20</td>
<td>Parent 70%</td>
<td>Partner 25%</td>
<td>Reports of changes in family members post-intervention included: reductions in psychological symptoms, increased confidence and strength, as well as withdrawing from the situation. Changes in coping appeared to have an impact on support, with family members reporting increased socialising. Improved relationships with the user and other family members and an increased understanding of their own needs, demonstrated by an increased focus on themselves, were also reported.</td>
</tr>
</tbody>
</table>
Templeton and colleagues (2007) examined the effectiveness of a brief intervention delivered in specialist drug and alcohol settings by specialist service staff. Specific details of the intervention (e.g., format, duration or number of sessions) or details of the family members or service providers (e.g., age, sex, qualifications) were not provided in the study. The authors reported improvements post-intervention in family members’ social support (associated with changes in coping) such as ‘going out more’ and ‘seeing friends’ (Templeton et al., 2007, p. 145). Non-significant reductions were also reported post-intervention in family member psychological symptoms, although quantitative measurement details were not reported. Additional changes reported in the three qualitative or mixed methods studies included increased confidence to discuss their situation, identification of own strengths (in particular their strengths within the situation), stronger awareness about family ties and conflicts, better use of resources, and increased awareness of the effects of the user’s substance problem on the health and wellbeing of family members.

**Discussion**

This is the first systematic review to explore the potential for family interventions directed at adolescent substance abuse to impact positively on family member mental health. Although there have been relatively few studies, the available evidence demonstrates that following individual and/or group family intervention, family members show reductions in mental health problems, with effect sizes between 0.2 and 0.8. Given that youth substance abuse is an increasingly common problem that families are likely to experience, it is important to establish ways of protecting their mental health.

**Methodological quality**

Although improvements in mental health and psychological and/or physical symptoms were reported for parents following individual or group family intervention for adolescent substance abuse, it is not conclusive that these improvements were caused by exposure to the interventions. Critical appraisal of the nine studies included in the review identified a number of limitations. First, the study designs generally lacked sufficient rigour to enable the intervention impact on parental mental health to be confidently established. The gold standard for the evaluation of intervention effectiveness, the randomised controlled trial design, was used in only two of the interventions (Irvine et al., 1999; McGillicuddy et al., 2001). A quasi-experimentally matched waiting-list control was used in one study (Toumbourou et al., 2001). These three are the only studies where designs had the potential to infer a causal relationship between family intervention and family member mental health. The studies by Irvine et al. (1999) and Toumbourou et al. (2001) demonstrated significant effects, while McGillicuddy et al. (2001) demonstrated effects were in a positive direction but not significant due to the small sample size.

In most studies, designs were not adequate to test a causal effect as assessments were based on pre-to post-program changes across time and did not include comparison with a control group (Arcidiacono et al., 2007; Copello, Templeton et al., 2000; Orford et al., 2007; Templeton et al., 2007; Toumbourou & Bamberg, 2008). It is important to note that these studies consistently reported improvements in family member mental health. Secondly, the reliance on self-reports and symptom indexes leaves questions unanswered regarding the extent to which the demonstrated effects reflected clinical changes in depression and stress. Although a number of studies used valid instruments to assess self-reports, in some cases changes were based on professional observations and untested instruments with unclear validity. Moreover, the limited follow-up rates, mostly over short periods, leave gaps in determining the stability of family intervention impacts on parental depression over longer time periods.

Thirdly, the existing research is limited by investigations that have a relatively small sample size (e.g., Copello, Templeton et al., 2000; McGillicuddy et al., 2001; Templeton et al., 2007; Toumbourou & Bamberg, 2008). Small samples restrict the range of parent and family characteristics that have been investigated. In addition, the existing samples have gender biases (such that females are over-represented) and in
some instances parents with self-reported active or recent substance abuse problems have been excluded (McGillicuddy et al., 2001). This restricted range may result in under-representation of factors that may moderate parent depression, such as relationship status, economic status and social support. Another problem is that in some studies the samples were non-specific to parents and also included other family members. Each of these problems limits the extent to which the findings can be generalised to parents of adolescents with substance use problems (the initial target for the review).

Implications for research and practice

The purpose of an evidence review is to guide clinical practice and future research. Although the limitations of the studies identified in the present review preclude definitive conclusions, there are consistent indications suggesting that the impact of both individual and group family intervention targeting adolescent substance use is likely to extend to direct and indirect impacts on parental mental health.

There is evidence to suggest that a considerable number of parents are exposed to adolescent alcohol or drug use (AIHW, 2007). Exposure to adolescent drug use is proposed as an important contributor to adverse mental health outcomes for parents, families and for the adolescent drug user (Butler & Bauld, 2005; Oreo & Ozgul, 2007). The distress experienced by parents may negatively affect a pivotal opportunity to respond effectively to reduce adolescent substance problems (Toumbourou et al., 2001). Thus, one implication of the present review is to suggest support for family interventions for adolescent substance abuse from agencies that target mental health promotion. Interventions that target the mental health of parents with substance misusing adolescents may be warranted to address the needs of an important sub-group who experience high levels of mental health problems.

Findings from the current review strongly suggest that efforts to involve the family in the treatment of substance abuse may have secondary benefits in promoting the mental health of parents and other family members. However, from the perspective of mental health promotion, not all family-based interventions that focus on adolescent substance use are equal. Those that emphasise achieving direct effects on reducing parental depression or that target logical determinants of parental depression may have greater advantages for mental health compared to therapies that target reductions in adolescent substance use only.

Some interventions may have a direct impact on parental depression because they include components that mirror cognitive behavioural interventions for depression. For example, the BEST intervention challenged parents to reframe attributions for parental responsibility for adolescent behaviour (Toumbourou et al., 2001). This intervention also attempted to reduce the parent’s emotional dependence on adolescent behaviour.

Two interventions (the 5-step intervention, Arcidiacono et al., 2007; Copello, Templeton et al., 2000; and a parent skills training program, McGillicuddy et al., 2001) encouraged family members to explore alternative methods of coping with a relative’s substance use. Methods of coping, feelings and perceptions are hypothesised to be interwoven (Bancroft, Carty, Cunningham-Burley & Backett-Milburn, 2002). For instance, individuals with high levels of self-esteem and perceived situational control are likely to employ more effective coping, such as active problem-focused strategies (Thoits, 1995). On the other hand, low self-esteem or perceived low control is hypothesised to predict more passive or avoidant emotion-focused coping (Thoits, 1995).

The CRAFT approach (Meyers & Smith, 1997), in addition to improving coping, taught adaptive skills in an attempt to reduce stress and improve the life quality of the family member; for example, by encouraging reinforcing activities outside the relationship (Meyers et al., 1999). Each of the above examples uses key components of Cognitive Behavioural Therapy (CBT) by intervening to modify the parent’s cognitive interpretation of events.

In most cases, interventions include components that are likely to have indirect impacts on parental mental health. A major factor targeted in four interventions was processes of family functioning, such as family conflict, cohesion and communication (Irvine et al., 1999; McGillicuddy et al., 2001; Meyers et al., 1999;
By improving family functioning, stressors such as parent-child conflict are reduced, thereby improving the family social environment (Ensel & Lin, 1991). Interventions may work to reduce concerns about child behaviour problems or may seek to improve child behaviour problems by addressing key family processes, which include parental communication and parenting practices (see Irvine et al., 1999). Communication processes that avoid blame and criticism, but include negotiation of mutual needs and problem solving, are suggested to constructively enhance attachment and positive parent-child relationships (Toumbourou & Gregg, 2001). These positive relationships are suggested to promote positive mental health by reducing family conflict, enhancing parenting satisfaction and consequently, improving parental wellbeing.

A growing body of research suggests that interventions may contribute to parental mental health by enhancing social support. A recent study by Green, Furrer and McAllister (2007) demonstrated that parents who felt they had greater social support reported less anxious/ambivalent attachment regarding their parent-child relationship. Consequently, they reported engaging more in developmentally appropriate activities with their children. Thus, interventions that improve social support may improve parental mental health by indirectly reducing relationship anxiety and may consequently enhance parent-child relationships.

Future research should employ designs that can more clearly identify the components of family intervention for adolescent substance use that lead to benefits for parental mental health (e.g., random allocation to intervention conditions). Future research should more fully explore whether changes in these intervention targets mediate reductions in parental depression. Modelling these indirect intervention effects can help to improve understanding of the processes of change that may assist the treatment of depression. At a minimum, the future evaluation of family interventions to address adolescent substance abuse should consider measuring potential impacts on parental mental health.

In conclusion, the results from this review are not definitive but suggest that family intervention for adolescent substance abuse has the potential to play a role in the promotion of mental health and wellbeing in concerned family members. It is possible that improvements in wellbeing are impacted both by family intervention’s direct effects of reducing parental depression as well as its indirect effects of improving outcomes that impact on parental distress.

**Acknowledgement**

Professor Toumbourou’s contribution to this project was supported through VicHealth Senior Research Fellowship funding.

**References**


