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The effectiveness of psychosocial interventions at reducing the frequency of alcohol and drug use in parents: findings of a Cochrane review and meta-analyses

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Running head: Interventions for parental substance use

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ABSTRACT

Background and aim:

Parental substance use is a major public health and safeguarding concern. There have been a number of trials examining interventions targeting this risk factor. We aimed to estimate the effectiveness of psychosocial interventions at reducing parental substance use.

Design:

We used systematic methods to identify trials; pooling data using a random-effects model. Moderator analyses examined influence of parent gender, presence of child in treatment, and intervention type.

Setting:

No restrictions on setting.

Participants:

Substance using parents of children below the age of 21 years.

Interventions:

Psychosocial interventions including those that targeted drug and alcohol use only, and drug and alcohol use in combination with associated issues.

Measurements:

Frequency of alcohol use and frequency of drug use.

Findings:

We included 8 unique studies with a total of 703 participants. Psychosocial interventions were more effective at reducing the frequency of parental alcohol use than comparison conditions at 6 month (SMD - 0.32, 95% CI -0.51 to -0.13, $P = 0.001$) and 12-month follow-up (SMD -0.25, 95% CI -0.47 to -0.03, $P = 0.02$), and frequency of parental drug use at 12 months only (SMD -0.21, 95% CI -0.41 to -0.01, $P = 0.04$). Integrated interventions which combined both parenting and substance use targeted components were effective at reducing the frequency of alcohol use (6 months: SMD -0.56, 95% CI -0.96 to -0.016, $P = 0.006$; 12 months: SMD -0.42, 95% CI -0.82 to -0.03, $P = 0.04$) and drug use (6 months: SMD -0.39, 95% CI -0.75 to -0.03, $P = 0.04$; 12 months: SMD -0.43, 95% CI -0.80 to -0.07, $P = 0.02$). Interventions targeting only substance use or parenting skills were not effective at reducing frequency of alcohol or drug use at either time point.

Conclusion:

Psychosocial interventions should target both parenting and substance use in an integrated intervention.

INTRODUCTION

Parental substance use is a prevalent and substantial child protection concern worldwide (1, 2), which is associated with adverse childhood experiences and poor outcomes for children (3). Research has shown that children of parents who use substances are more likely to sustain an unintentional injury (4-6), as well as injuries of greater severity than children whose parents do not use substances (7). These children are more likely to experience childhood mental health problems (8, 9), with both mothers' and fathers' substance use being significantly associated with childhood externalising disorders such as conduct disorder, oppositional defiant disorder (10, 11), and internalising disorders such as depression and anxiety disorder (12). The children themselves are significantly more likely to engage with early onset substance use (13, 14), harmful substance use (8), and street-involvement (defined as homelessness or those young people who experience physical, psychological or social risks of street-culture) (15), than children whose parents do not use substances. Furthermore, parental substance use is significantly associated with the development of mental disorders and substance use disorders when children enter adulthood (16, 17).

Research estimates that between 5% and 30% of children in European countries live with at least one parent who uses substances (18). In England it is estimated that 162,000 children live with a dependent opiate user (19) and between 189,119 and 207,617 live with an alcohol dependent parent (20). Twelve per cent of children in the USA (21), and 14% of children in Australia have at least one parent who uses illicit drugs (22). Due to the potentially negative impact on the child, parental substance use is often identified as a risk factor in child welfare and child protection assessments. In England, 21% of all 'child-in-need' assessments identify drug use and 18% identify alcohol use as a concern (23). Furthermore, 52% of child protection cases in England have parental substance use identified as a risk factor (24) and up to two-thirds of all cases in US (25). Children whose mothers used both alcohol and drugs have been found to be nine times more likely to be placed in care than children of parents who did not use substances (26), with great social and economic cost (27). There have been a number of trials of interventions for parents who use substances that sought to address this risk factor, reduce the need for protective services, and to promote family reunification. However, at present, there is no agreed way to intervene. As such, there is a need to review the literature systematically, in order to identify effective psychosocial interventions to reduce parental substance use.

We undertook a review and meta-analysis of published and unpublished studies. Our primary objective was to estimate the effectiveness of psychosocial interventions at reducing the substance use (alcohol and/or illicit drugs excluding tobacco) of parents with children of dependent age (from birth up to 21 years). Our secondary objectives were to test whether interventions can increase drug and/or alcohol treatment engagement, retention and completion and affect the welfare of the child and analyse risk of bias; study quality and publication bias. This paper reports on the primary meta-analysis of the review, providing clear communication of findings with the greatest importance to the field.

METHODS

The following electronic databases were searched from inception until July 2020, using free text keywords and thesaurus headings: MEDLINE (Ovid); Embase (Ovid); PsycINFO (Ovid); Applied Social Science (ASSIA); Sociological Abstracts; Social Science Citation Index (SSCI); Scopus; the Cochrane Drugs and Alcohol Group Specialised Register via the Cochrane Register of Studies (CRS-Web); the Cochrane Central Register of Controlled Trials (CENTRAL) in the Cochrane Library; CINAHL - Cumulative Index to Nursing & Allied Health Literature. This was supplemented by searching for grey literature on key websites, hand-searching reference lists of relevant studies and well as contacting authors who publish in the field to identify ongoing trials and unpublished work. The full search strategy is reported in the Cochrane review (28).

Two reviewers independently screened all titles and abstracts using specified inclusion and exclusion criteria, retrieving full papers for all potentially eligible studies and evaluating in full text. No language or date restrictions were applied. Relevant data were extracted independently by two reviewers, including: study design, sample characteristics, intervention details, outcome measures and intervention effects. Discrepancies at each stage were resolved by discussion or by consulting a third researcher if consensus could not be reached.

Eligibility

We included randomised controlled trials (RCTs) and trials which have a quasi-randomised design of psychosocial interventions, with a minimum follow-up period of six months from the start of the intervention. Participants were parents who use substances (alcohol and/or illicit drugs). This included mothers and fathers of children under the age of 21 years, regardless of custodial or residency status of the children. Studies intervening with all levels of risky alcohol and/or drug use were eligible for inclusion. We included studies which identified risky by a reliable, valid, formal assessment (validated screening tool, assessment by a health or child welfare practitioner) or diagnostic tool (DSM III, DSM IIIR, DSM IV, ICD8, ICD 9, ICD 10), or both. The administration of agonist or detoxifying prescriptions was considered as a proxy measure of substance use in participants and therefore trials that include people taking them were eligible for inclusion. A variety of control or comparison groups were eligible for inclusion: no intervention, waiting list/delayed treatment control arms, attention control, alternative active intervention, and treatment as usual.

Risk of bias

We assessed the risk of bias of included studies using the Cochrane risk of bias tool (26). This two-part, domain-based tool addresses seven domains: random sequence generation and allocation concealment (selection bias); blinding of participants and providers (performance bias); blinding of outcome assessor (detection bias); incomplete outcome data (attrition bias); selective outcome reporting (reporting bias); and other sources of bias. The first part of the tool involves describing what was reported to have happened in the study. The second part of the tool involves assigning a judgement relating to the risk of bias for that entry, in terms of low, high or unclear risk. To make these judgments we used the criteria indicated by the Cochrane Handbook for Systematic Reviews of Interventions adapted to the addiction field (29). We addressed the domains of sequence generation and allocation concealment

(avoidance of selection bias) in the tool by a single entry for each study. We considered incomplete outcome data (avoidance of attrition bias) for all outcomes.

Appraising study quality

We assessed the overall quality of the evidence for the primary outcome using the GRADE system. The GRADE Working Group developed a system for grading the quality of evidence which takes into account issues not only related to internal validity, but also to external validity, such as directness of results (30). The GRADE system assigns four levels of evidence that should be interpreted as follows:

- High: We are very confident that the true effect lies close to that of the estimate of the effect
- Moderate: We are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different
- Low: Our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect
- Very low: We have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

Data from RCTs start at the high level of evidence and are then lowered by one or two levels depending of seriousness, for the following reasons:

- study limitation for risk of bias
- Inconsistency between study results
- Uncertainty about directness
- Imprecision of the pooled estimate
- Strong suspicion of publication bias.

Measure of treatment effect and synthesis of results

We pooled the data for our primary outcome using a random-effects model to allow for heterogeneity between and within studies. Frequency of alcohol and/or drug use was identified a-priori as the primary outcome due to its international relevance. We meta-analysed the intervention effects separately for alcohol and drugs and completed sub-group analysis on: intervention type, parent gender and involvement of child in intervention using Review Manager 5. We analysed continuous outcomes by calculating standardised mean differences (SMD) with 95% confidence intervals. SMD values of at least 0.2, 0.5, and 0.8 are indicative of small, medium, and large effect sizes, respectively (31). If two interventions were compared against a control group, data from both intervention arms were included in the main comparison and the number of participants in the control group was halved for each comparison in accordance with Cochrane recommendations (29). We used data from intention-to-treat analyses and contacted authors to try to obtain missing data. We assessed the magnitude of heterogeneity using the I^2 statistic, and the statistical significance of the heterogeneity using P values derived from χ^2 tests (32).

RESULTS

After excluding duplicates we identified 5141 potentially relevant records. Of these, we excluded 5054 on the basis of the title and abstract and a further 59 after full paper review. Twenty-two studies, reported in 28 papers met our inclusion criteria; 8 of which were included in our meta-analysis. All included studies were parallel individually randomised controlled trials (see figure 1 study flow diagram). The eight unique studies included in the meta-analysis included a total of 703 adult participants.

[INSERT FIGURE 1]

Description of studies

A summary of included studies are detailed in tables 1 and 2. All of the included studies were conducted in the USA (33-40). Over half (N=5) of studies intervened with mothers only (34, 35, 36-40); two studies intervened with fathers only (36, 37) and a further study intervened with parents regardless of gender (33), although the majority of the parents within these studies were mothers. There were broadly three types of interventions examined within the included studies; interventions which targeted parenting only (33-35, 40); interventions which targeted the drug and alcohol use only (36, 39); and those which target parenting and drug and alcohol use within an integrated intervention (36-39). Full details of the interventions are reported in the Cochrane review (33). All studies examined interventions that were delivered within a community setting. Comparison conditions were varied. Over half of the studies (N=5) compared the experimental intervention to usual treatment or care (33-35, 38, 39). Other studies examined the experimental intervention against attention control (40) or an alternative intervention of parenting education (36) and individual behavioural therapy (37). Sample sizes ranged from N=30 (37) to N=183 (39), with participants recruited from drug and alcohol treatment settings (33, 36, 37, 40), child welfare settings (34, 35, 38) and a further study recruiting from a homeless shelter (39). The mean age of the participants was 32.2 years, average percentages of ethnicity across studies showed higher proportions of white (non-Hispanic)/Caucasian (46.6%) than the next largest ethnicity group (African American/black; 37%).

INSERT TABLES 1 & 2

Risk of bias

The main risk of bias within the included studies were performance (subjective) bias. Mostly this was due to inability to blind participants and providers to interventions which are interaction-based. Whilst unclear reporting was common, very few trials were high risk of bias on domains other than performance. Full details of the assessed risk of bias are reported in the Cochrane review (28).

Effectiveness of psychosocial interventions

We conducted separate random-effects meta-analyses of studies which examined the frequency of alcohol use and the frequency of drug use (see table 3). Pooling of studies showed that psychosocial intervention reduced the frequency at which parents consumed alcohol with a small effect more than the comparison interventions at 6 months, with effects

maintained at 12 months. There was low heterogeneity at both time points (6 month: $I^2 = 0\%$; $P = 0.66$; 12 month: $I^2 = 0\%$; $P = 0.53$). The frequency of drug use did not reduce more than the control interventions at 6 months however a significantly higher level of reduction was found at 12 months. Again, heterogeneity was low at both time points (6 month: $I^2 = 0\%$; $p = 0.58$; 12 month: $I^2 = 12\%$; $p = 0.34$).

Impact of intervention type

We examined the effect of the intervention upon frequency of alcohol and drug use by type of psychosocial intervention, analysing separately those interventions which sought to target the substance use behaviour; those that targeted parenting behaviour and those that integrated parenting and drug and alcohol interventions. Results showed that parenting interventions with an integrated substance use component were associated with reduced frequency of parental alcohol use with a medium effect at 6 months and with a small effect at 12 months. Integrated parenting and substance use interventions were similarly found to reduce the frequency of drug use with a small effect at 6 months and 12 months. Neither psychosocial interventions which targeted the individual parent's substance use only nor those targeting parenting skill and family relationships only were found to reduce the frequency of alcohol or frequency of drug use at either time point. Interventions which involved children in one or more sessions did not reduce the frequency of parental alcohol use or drug use at 6 months or 12 months. Only those interventions which did not directly involve the child in sessions were found to reduce frequency of parental alcohol use with a small effect at 6 months and the frequency of both parental alcohol use and drug use with a small effect at 12 months.

Impact of family member role

We investigated intervention effect by the parental role of the targeted intervention recipient. Results showed that at 6 month follow-up both intervention which target mothers, and those which target fathers were associated with a reduction in the frequency of parental alcohol use with a small effect size. At 12 month follow-up, effects for mothers' were lost but were maintained for fathers. Frequency of drug use reduced with a small effect size in fathers at 6 month and 12 month follow-up. Neither time point showed reductions for mothers.

[INSERT TABLE 3]

Quality of evidence

According to Grades of Recommendation Assessment, Development and Evaluation (GRADE) criteria, the evidence for the treatment effect for all psychosocial interventions was of moderate quality. The quality of the evidence was low for drug and alcohol only interventions, parenting only interventions and integrated interventions and low to very low for parent gender and involvement of child in the intervention.

DISCUSSION

We found moderate quality evidence that psychosocial interventions which have been tailored for a parent population may be superior to treatment as usual or other comparison conditions at reducing the frequency of parental alcohol use and longer-term drug use. Similar to previous reviews of effective interventions for substance using mothers (41-

43), our review found that those interventions which integrated parenting skill and family functioning content with an adjunctive substance use component were effective at reducing the frequency of parental alcohol and drug use, whereas interventions that targeted drug and alcohol use or parenting alone were not. However the quality of evidence is low to very low. Parenting may act as a stressor for substance use (44), as well as providing a motivation to reduce or abstain from substance use (45). Addressing parenting explicitly within the context of alcohol and drug use may offer a mechanism for change. As such, our findings give support to the view that strategies that target the family may benefit recovery (46). However, the family can both augment and nullify the influence of the intervention (47). A further finding of our meta-analyses is that parents may be better able to reduce the frequency of their alcohol and drug use if the intervention they receive does not directly involve their children. These findings present a challenge to a previous narrative review which concluded that the involvement of children in women-centred substance misuse treatment may be beneficial (48). It should be noted however, that this narrative review examined the wider benefit of children residing with their mothers within residential treatment programmes (and not necessarily being involved in the therapeutic sessions provided to the mother). Conversely, all studies included in our meta-analysis examined community interventions where the child was directly involved in one or more of the therapeutic sessions. Given how stigmatised parental substance use is, the presence of the child in the sessions may have inhibited the engagement of the parents in the intervention, either due to the desire to shield the child from the realities of their use or to deflect the judgement placed upon the parent. Furthermore, there was not enough detail in the studies to control for the age of the children when attending these sessions and this variability may influence the effectiveness (and appropriateness) of having the child present.

Fathers' substance use in particular seemed to benefit from psychosocial intervention whilst only short-term reductions in the frequency of alcohol use were found in mothers, although this finding is based on low quality evidence. Within a society wherein mothers are typically viewed as the primary caregiver, this finding might seem at odds with a theory of change based upon parenting and the family as conducive of behaviour change. It is possible that a measure of effectiveness based upon frequency of alcohol and/or drug use may fail to detect important reductions in levels of use, particularly in women who have been found to use more frequently but in lower risk patterns (49). Additionally, it should be noted that the intervention the mothers typically received focused upon their parenting skills, and did not include an integrated substance use component. The two studies examining intervention with fathers contributed four intervention groups to our analysis. All interventions included content which focused upon the individual substance use needs of the father and two of the intervention groups also included integrated content focused upon parenting and family issues. The interventions provided to fathers were also more intensive with a mean of 28 sessions compared to a mean of 18 sessions provided to mothers.

Recovery capital (50, 51), whilst philosophically associated with natural recovery (50, 52), provides a useful theoretical framework through which to view the results of our review. Recovery capital is the sum of the internal and external resources that are available for a substance user to draw upon within their efforts to initiate and sustain recovery. It broadly consists of three components: personal recovery capital which includes physical capital (health, finance, values and attributes); family and social recovery (relationships and connections to conventional institutions) and community recovery capital (treatment and other organised support). Individuals with greater recovery capital have greater capacity to achieve change. Conversely, individuals may accrue negative recovery capital (53);

characteristics or events which lessen the individual's ability to recover. Previous research has found that drug users typically experience a greater number of negative events than alcohol users (54, 55). Whilst the studies in our review did not provide sufficient information to reliably assess this, in the absence of clear difference between the intervention type or intensity between these two groups of parents, this may provide some explanation as to why our review found that the frequency of alcohol use reduced more than the frequency of drug use in almost all of our analyses. When considering the evidence of effectiveness by parent gender, the fathers participating in the studies included in our review often possessed components of recovery capital. They were more often employed and as an eligibility criteria for these studies, all were in a relationship with a female who did not use substances and as such benefited from a supportive and structured social context (56), and retained their children in their care. These partners received couples' therapy alongside the substance using male partner; an intervention that has been found to be effective at reducing substance use in general adult populations not specific to parents (57). Conversely, the mothers often possessed little recovery capital; they were typically single or in a relationship with a male drug user (39, 40) and they had low levels of education, employment and income (34, 36, 38-40). Moreover, the mothers within our review had often accrued negative recovery capital (53), such as previous periods of incarceration (28); were currently homeless (39); had mental health problems (33); or had experienced trauma such as childhood physical or sexual abuse (34, 40). A number of studies and reviews have highlighted the challenges of intervening with female substance users, who have been found to have different needs to their male counterparts including elevated histories of childhood trauma and abuse, physical and mental health difficulties and socioeconomic problems (48, 58-60). Parents who use substances are highly stigmatised (61), with these stigmatised views being experienced most acutely by mothers, for whom substance use is framed to be incompatible with an identity as a 'good mother' (62, 63). This stigma compounds the negative recovery capital possessed by female substance users, who experience more guilt and shame than their male counterparts, and as such, presenting a greater barrier to change (49). Many of the female participants of the studies had been recruited following their involvement in child protection services wherein their ability to provide adequate care for their children was being questioned (34, 35, 38). Moreover, many of the mothers had previously lost custody of a one or more children (34, 38, 40), increasing their vulnerability and likelihood of reoccurring care proceedings (64). The combined effect being that the mothers who used substances in the studies included in our review did not have equal capacity (recovery capital) and resource (intervention content and intensity) to reduce their substance use.

Limitations

The majority of the participants within the studies were mothers, with only two studies included in our primary meta-analysis targeting fathers. The baseline characteristics reported within these studies did not include evidence of additional vulnerability over and above the participant's substance use. Moreover, male participants were excluded if they were in a relationship with a female partner who met the diagnostic criteria for a substance use disorder or if they or their partner had a mental health disorder. As such, the findings of this review may not be applicable to fathers who experience other psychological or social risks. Whilst the findings of this review suggest that mothers did not reduce the frequency of their drug use, or sustain short term reductions from alcohol use, the mothers included in the trials were often vulnerable and impacted by multiple other risk factors. Mothers who do not have additional vulnerability, or those with supportive relationships with a partner who does not use substances may benefit from an intervention. Despite the eligibility of all levels of risky

alcohol and/or drug use by parents, all of the studies included in our review examined the effectiveness of interventions delivered to parents using substances at dependent levels. Given the extensive harms to both the parent and child from substance use below the diagnostic thresholds (1), this is an important area for future research. All of the included studies were conducted in the US, where important family law, health care and cultural differences exist.

The quality of the evidence in the review ranged from moderate to very low. Almost all of the studies included in this review were at high risk of performance bias, and half were at high risk of detection bias. Small sample sizes often resulted in a reduced certainty of outcome from across the body of evidence. We intended to analyse a funnel plot to investigate publication bias; however, as there were fewer than 10 trials in our primary meta-analysis, the minimum number of trials required to enable a funnel plot was not met (65, 66).

CONCLUSION

It is not enough to provide substance using parents with an intervention which targets their drug and alcohol use. Psychosocial interventions which integrate both parenting interventions with interventions which target drug and alcohol use may be necessary to reduce substance use in this population. However, mothers who use substances may need more intensive intervention, possibly with a trauma focus, to overcome their multiple vulnerabilities and lower levels of recovery capital. Whilst involving other family members in the intervention maybe helpful in bringing about change in the parents substance use, there is suggestion that the child should not be present during the intervention sessions.

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REFERENCES

1. McGovern R, Gilvarry E, Addison M, Alderson H, Geijer-Simpson E, Lingam R, Smart D, Kaner E. (2018) The association between adverse child health, psychological, educational and social outcomes and non-dependent parental substance: a rapid evidence assessment. *Trauma, Violence & Abuse*. DOI: 10.1177/1524838018772850
2. HM Government. Working together to safeguard children: a guide to inter-agency working to safeguard and promote the welfare of children. London: HM Government; 2015.
3. Canfield M, Radcliffe P, Marlow S, Boreham M, Gilchrist G. Maternal substance use and child protection: a rapid evidence assessment of factors associated with loss of child care. *Child Abuse & Neglect*. 2017;70:11-27.

4. Barczyk AN, Yuma-Guerrerero P, K S, Velasquez MM, Brown J, Maxson T, et al. Risky Drinking among parents of pediatric trauma patients. *Journal of Trauma Acute Care Surgery*. 2013;75(4):676-81.
5. Baker R, Orton E, Tata LJ, Kendrick D. Risk factors for long-bone fractures in children up to 5 years of age: a nested case-control study. *Archives of Disease in Childhood*. 2015;100(5):432-7.
6. Tyrrell EG, Orton E, Tata LJ, Kendrick D. Children at risk of medicinal and non-medicinal poisoning: a population-based case-control study in general practice. *British Journal of General Practice*. 2012;62(605):e827-33.
7. Damashek A, Williams NA, Sher K, Peterson L. Relation of caregiver alcohol use to unintentional childhood injury. *Journal of Pediatric Psychology*. 2009;34:344-53.
8. Kelley ML, Braitman A, Henson JM, Schroeder V, Ladgate J, Gumieny L. Relationships among depressive mood symptoms and parent and peer relations in collegiate children of alcoholics. *American Journal of Orthopsychiatry*. 2010;80(2):2004-12.
9. Jääskeläinen M, Holmila M, Notkola IL, Raitasalo K. Mental disorders and harmful substance use in children of substance abusing parents: A longitudinal register-based study on a complete birth cohort born in 1991. *Drug Alcohol Rev*. 2016;35(6):728-40.
10. Kendler K, Gardner C, Edwards A, Hickman M, Heron J, Macleod J, et al. Dimensions of parental alcohol use/problems and offspring temperament, externalizing behaviors, and alcohol use/problems. *Alcoholism, Clinical and Experimental Research*. 2013.
11. Torvik FA, Rognmo K, Ask H, Roysamb E, Tambs K. Parental alcohol use and adolescent school adjustment in the general population: results from the HUNT study. *BMC Public Health*. 2011;11:706.
12. Ohannessian C. Parental Problem Drinking and Adolescent Psychosocial Adjustment: The Mediating Role of Adolescent-Parent Communication. *Journal of Research on Adolescence*. 2012;22(3):498-511.
13. Malone SM, Iacono WG, McGue M. Drinks of the father: father's maximum number of drinks consumed predicts externalizing disorders, substance use, and substance use disorders in preadolescent and adolescent offspring. *Alcoholism: Clinical & Experimental Research*. 2002;26(12):1823-32.
14. Malone SM, McGue M, Iacono W. Mothers' maximum drinks ever consumed in 24 hours predicts mental health problems in adolescent offspring. *Journal of child Psychology & Psychiatry*. 2010;51(9):1067-75.
15. Barker B, Kerr T, Alfred G, Fortin M, Nguyen P, Wood E, et al. High prevalence of exposure to the child welfare system among street-involved youth in a Canadian setting: implications for policy and practice. *BMC Public Health*. 2014;14(1):197.
16. Donaldson CD, Handren LM, Crano WD. The Enduring Impact of Parents' Monitoring, Warmth, Expectancies, and Alcohol Use on Their Children's Future Binge Drinking and Arrests: a Longitudinal Analysis. *Prevention Science*. 2016;17(5):606-14.
17. Yoon G, Westermeyer J, Kuskowski MA, Nesheim L. Impact of the number of parents with alcohol use disorder on alcohol use disorder in offspring: a population-based study. *Journal of Clinical Psychiatry*. 2013;74(8):676-81.
18. EMCDDA. Children's voices: experiences and perceptions of European children on drug and alcohol issues. Luxembourg; 2010.
19. Pryce R, Buykx P, Gray L, Stone T, Drummond C, Brennan A. Estimates of alcohol dependence in England based on APMS 2014, including estimates of children living in a household with an adult with alcohol dependence. London: Public Health England; 2017.
20. Department for Work & Pensions. Improving lives: The work, health and disability green paper. London: HMSO; 2016.

21. Lipari R, Van Horn S. Children living with parents who have a substance use disorder: The CBHSQ Report. Rockville, MD.; 2017.
22. Australian Institute of Health and Welfare. National framework for protecting Australia's children indicators. Retrieved from <https://www.aihw.gov.au/reports/child-protection/nfpac>; 2020.
23. Department for Education. Characteristics of children in need: 2018-2019. London: Department for Education; 2020.
24. Forrester D. Parental Substance Misuse and Child Protection in a British Sample: A Survey of Children on the Child Protection Register in an Inner London District Office. *Child Abuse Review*. 2000;9:235-46.
25. Traube D. The Missing Link to Child Safety, Permanency, and Well-Being: Addressing Substance Misuse in Child Welfare. *Social Work Research*. 2012;36(2):83-7.
26. Raitasalo K, Holmila M, Autti-Ramo I, Notkola I-L, Tapanainen H. Hospitalisations and out-of-home placements of children of substance-abusing mothers: A register-based cohort study. *Drug and Alcohol Review*. 2015;34(1):38-45.
27. Conti, G., et al., *The economic cost of child maltreatment in the UK 2017*, NSPCC: London.
Department for Education, *Characteristics of children in need: 2017-2018*. 2018, Department for Education: London.
28. McGovern R, Newham JJ, Addison M, Hickman M, Kaner E (2021) The effectiveness of psychosocial interventions to reduce parental substance use. *Cochrane Database of Systematic Reviews*, issue 3
29. Higgins JPT, Green S. *Cochrane handbook for systematic reviews of interventions* version 5.1.0. www.cochrane-handbook.org; 2011.
30. Guyatt G, Oxman AD, Akl EA, Kunz R, Vist G, Brozek J, et al. GRADE guidelines 1. Introduction - GRADE evidence profiles and summary of findings tables. *Journal of Clinical Epidemiology* 2011;64(4):383-94.31. Cohen J. *Statistical Power Analysis for the Behavioral Sciences*. 2nd ed. Hillsdale, NJ: Erlbaum; 1988
32. Deeks J, Altman D, Bradburn M. Statistical methods for examining heterogeneity and combining results from several studies in meta-analysis. In: Egger M, Davey Smith G, Altman D, editors. 2nd ed. London: BMJ Books; 2001.
33. Catalano RF, Gaine RR, Fleming CB, Haggerty KP, Johnson NO. An experimental intervention with families of substance abusers: one-year follow-up of the focus on families project. *Addiction*. 1999;94(2):241-54.
34. Dakof G, Cohen J, Henderson C, Duarte E, Boustani M, Blackburn A, et al. A randomized pilot study of the Engaging Moms Program for family drug court. *Journal of Substance Abuse Treatment*. 2010;38(3):263-74.
35. Donohue B, Azrin NH, Bradshaw K, Van Hasselt VB, Cross CL, Urgelles J, et al. A controlled evaluation of family behavior therapy in concurrent child neglect and drug abuse. *Journal of Consulting and Clinical Psychology*. 2014;82(4):706.
36. Kelley ML, Fals-Stewart W. Couples- versus individual-based therapy for alcohol and drug abuse: effects on children's psychosocial functioning. *Journal of Consulting and Clinical Psychology*. 2002;70(2):417-27.
37. Lam WK, Fals-Stewart W, Kelley ML. Parent training with behavioral couples therapy for fathers' alcohol abuse: effects on substance use, parental relationship, parenting, and CPS involvement. *Child Maltreatment*. 2009;14(3):243-54.
38. Saldana L. An Integrated Intervention to Address the Comorbid Needs of Families Referred to Child Welfare for Substance Use Disorders and Child Neglect: FAIR Pilot Outcomes. *Child Welfare*. 2015;94(5):167-86.

39. Slesnick N, Erdem G. Efficacy of ecologically-based treatment with substance-abusing homeless mothers: Substance use and housing outcomes. *Journal of Substance Abuse Treatment*. 2013;45(5):416-25.
40. Slesnick N, Zhang J. Family systems therapy for substance-using mothers and their 8- to 16-year-old children. *Psychology of Addictive Behaviors : Journal of the Society of Psychologists in Addictive Behaviors*. 2016;30(6):619.
41. Milligan K, Niccols A, Sword W, Thabane L, Henderson J, Smith A, et al. Maternal substance use and integrated treatment programs for women with substance abuse issues and their children: a meta-analysis. *Subst Abuse Treat Prev Policy*. 2010;5:21.
42. Moreland A, McRae-Clark A. Parenting outcomes of parenting interventions in integrated substance-use treatment programs: A systematic review. *J Subst Abuse Treat*. 2018;89:52-9.
43. Niccols A, Milligan K, Smith A, Sword W, Thabane L, Henderson J. Integrated programs for mothers with substance abuse issues and their children: a systematic review of studies reporting on child outcomes. *Child Abuse Negl*. 2012;36(4):308-22.
44. Rutherford, HJV & Mayes LC (2019) Parenting stress: A novel mechanism of addiction vulnerability. *Neurobiology of Stress*; 11 doi.org/10.1016/j.ynstr.2019.100172
45. Kristen D. Seay, Aidyn L. Iachini, Dana D. DeHart, Teri Browne & Stephanie Clone (2017) Substance abuse treatment engagement among mothers: Perceptions of the parenting role and agency-related motivators and inhibitors, *Journal of Family Social Work*, 20:3, 196-212, DOI: 10.1080/10522158
46. White W, Cloud W, editors. *Recovery Capital: A Primer for Addictions Professionals* 2008.
47. Moos R. Addictive disorders in context: principles and puzzles of effective treatment and recovery. *Psychol Addict Behav*. 2003;17(1):3-12.
48. Osterling K, Austin M. Substance abuse interventions for parents involved in the child welfare system: evidence and implications. *Journal of evidence-based social work*. 2008;5(1-2):157-89.
49. Guimarães, R.A., de Oliveira Landgraf de Castro, V., do Valle Leone de Oliveira, S.M. *et al*. Gender differences in patterns of drug use and sexual risky behaviour among crack cocaine users in Central Brazil. *BMC Psychiatry* **17**, 412 (2017). <https://doi.org/10.1186/s12888-017-1569-7>
50. Cloud W, Granfield R. Natural Recovery from Substance Dependency. *Journal of Social Work Practice in the Addictions*. 2001;1(1):83-104.
51. Granfield R, Cloud W. *Coming clean: Overcoming addiction without treatment*. New York: New York University Press; 1999.
52. Granfield R, Cloud W. Social context and "natural recovery": the role of social capital in the resolution of drug-associated problems. *Subst Use Misuse*. 2001;36(11):1543-70.
53. Cloud W, Granfield R. Conceptualizing recovery capital: expansion of a theoretical construct. *Subst Use Misuse*. 2008;43(12-13):1971-86.
54. Best D, Gow J, Knox T, Taylor A, Groshkova T, White W. Mapping the recovery stories of drinkers and drug users in Glasgow: quality of life and its associations with measures of recovery capital. *Drug Alcohol Rev*. 2012;31(3):334-41.
55. Blomqvist J. Treated and untreated recovery from alcohol misuse: environmental influences and perceived reasons for change. *Subst Use Misuse*. 1999;34(10):1371-406.
56. Moos R, Moos B. Protective resources and long-term recovery from alcohol use disorders. *Drug Alcohol Depend*. 2007;86(1):46-54.

57. Powers M, Vedel E, Emmelkamp P. Behavioral couples therapy (BCT) for alcohol and drug use disorders: a meta-analysis. *Clin Psychol Rev.* 2008;28(6):952-62.
58. Grella C, Stein J, Greenwell L. Associations among childhood trauma, adolescent problem behaviors, and adverse adult outcomes in substance-abusing women offenders. *Psychol Addict Behav.* 2005;19(1):43-53.
59. Messina N, Wish E, Nemes S. Predictors of treatment outcomes in men and women admitted to a therapeutic community. *The American journal of drug and alcohol abuse.* 2000;26(2):207-27.
60. Sacks J, McKendrick K, Banks S. The impact of early trauma and abuse on residential substance abuse treatment outcomes for women. *J Subst Abuse Treat.* 2008;34(1):90-100.
61. Chandler A, Whittaker A, Cunningham-Burley S, Williams N, McGorm K, Mathews G. Substance, structure and stigma: Parents in the UK accounting for opioid substitution therapy during the antenatal and postnatal periods. *International Journal of Drug Policy.* 2013;24(6):e35-e42.
62. Radcliffe P. Motherhood, pregnancy, and the negotiation of identity: the moral career of drug treatment. *Social science & medicine (1982).* 2011;72(6):984-91.
63. Reid C, Greaves L, Poole N. Good, bad, thwarted or addicted? Discourses of substance-using mothers. *Critical Social Policy.* 2008;28(2):211-34.
64. Broadhurst K, Mason C. Birth Parents and the Collateral Consequences of Court-ordered Child Removal: Towards a Comprehensive Framework. *International Journal of Law, Policy and the Family.* 2017;31(1):41-59.
65. Sterne JAC, Sutton AJ, Ioannidis JP, Terrin N, Jones DR, Lau J, Carpenter J, Rücker G, Harbord RM, Schmid CH, Tetzlaff J, Deeks JJ, Peters J, Macaskill P, Schwarzer G, Duval S, Altman DG, Moher D, Higgins JPT. Recommendations for examining and interpreting funnel plot asymmetry in meta-analyses of randomised controlled trials. *BMJ.* 2011;343:d4002.
66. Sterne JAC, Egger M, Moher D. Chapter 10: Addressing reporting biases. In: Higgins JPT, Green S, eds. *Cochrane Handbook for Systematic Reviews of Interventions.* 5.1.0, Vol. 10: Cochrane; 2011. www.cochrane-handbook.org.

Figure 1: flow of studies

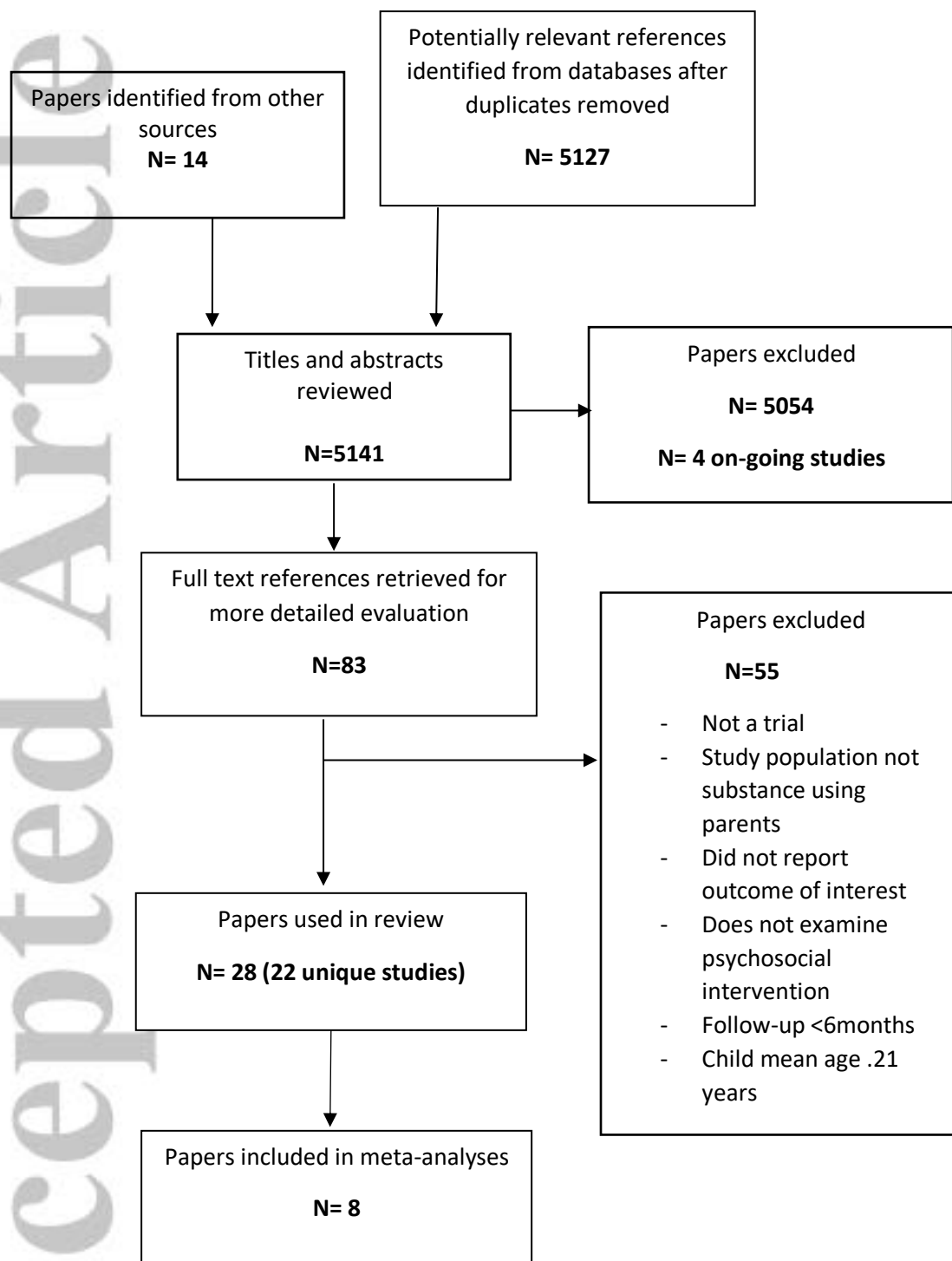


Table 1: Summary of included studies: Frequency of alcohol use

| Trial | Participants | Intervention | Comparison | Standard mean difference |
|---|--|---|--|--|
| Drug and alcohol focused interventions | | | | |
| Kelley (2002) Setting: substance use treatment | 135 fathers 65% Caucasian; mean age 37.1 yrs; mean age 10.4 yrs | Intervention 1: Individual cognitive behavioural therapy (IBT) (32 sessions CBT for substance use) | Couples –based psycho educational attention control (lectures on substance use) | -0.04 [-0.74, 0.67] (6m) -0.09 [-0.80, 0.61] (12m) |
| Slesnick (2013) Setting: homeless family shelter | 60 mothers 75% African-American; mean age 26.3 yrs; mean age of children 3.68 yrs | Community Reinforcement Approach (CRA) (integrates independent housing, 26 case management sessions and 20 CRA) | Emergency shelter for up to 3 weeks and linkage to housing and support services in the community | -0.57 [-1.11, -0.03] (6m) |
| Parenting focused interventions | | | | |
| Dakof (2010) Recruitment setting: Family drug court | 62 mothers 42% black; mean age 30.2 yrs; at least 1 child removed (potential reunification) | Engaging Moms Program (EMP): multidimensional family therapy (attachment; family and romantic relationships; parenting skills; and emotional regulation, problem solving, and communication skills) | TAU (Standard family drug court case management service) | 0.01 [-0.53, 0.55] (6m) 0.19 [-0.32, 0.71] (12m) |
| Donohue (2014) Setting: child protection services | 72 mothers 47% Caucasian; mean age 29.04 yrs, mean age of child 3.92 yrs | Family behaviour therapy (FBT) (20 sessions; home safety; child stimulation; parenting skills; financial management; HIV and STD prevention) | TAU (Variety of community based services identified by child protection services) | -0.17 [-0.70, 0.37] (6m) |
| Slesnick (2016) Setting: substance use treatment | 183 mothers 53.6% were white non-Hispanic; mean age 33.9 yrs; child mean age 11.54 yrs | Ecologically-based family therapy (EBFT) (12 sessions targeting family dysfunctional interactions) | Women's health education (WHE) (attention control) (sexual behaviour & health; pregnancy & childbirth) | -0.31 [-0.64, 0.02] (6m) -0.35 [-0.68, -0.01] (12m) |
| Integrated parenting substance use interventions | | | | |

| | | | | |
|---|--|--|---|---|
| Kelley (2002) Setting: substance use treatment | 135 fathers 65% Caucasian; mean age 37.1 yrs; child mean age 10.4 yrs | Intervention 2: Behavioural couples' therapy (BCT) (12 sessions BCT targeting communication and interactional skills; 20 sessions IBT for substance use) | Couples –based psycho educational attention control (lectures on substance use) | -0.37 [-1.07, 0.32] (6m) -0.46 [-1.15, 0.24] (12m) |
| Lam (2009) Setting: substance use treatment | 30 fathers 63% white; mean age 34.1 yrs; child mean age 8.9 yrs | Intervention 1: Behaviour couples therapy (BCT) (12 sessions BCT targeting communication and problem-solving skills; 12 sessions individual CBT for substance use) | Individual-based therapy (IBT) (24 sessions of standard individual CBT for substance use) | -0.68 [-1.37, 0.01] (6m) -0.38 [-1.05, 0.30] (12m) |
| Lam (2009) Setting: substance use treatment | 30 fathers 63% white; mean age 34.1 yrs; child mean age 8.9 yrs | Intervention 2: parent skills and BCT (PSBCT) (6 BCT sessions; 6 parent-skills training sessions; 12 individual-based CBT for substance use) | Individual-based therapy (IBT) (24 sessions CBT for substance use) | -0.61 [-1.30, 0.07] (6m) -0.43 [-1.11, 0.25] (12m) |

Table 2; Summary of included studies; frequency of drug use

| Trial | Participants | Intervention | Comparison | Standard mean difference |
|--|--|---|---|---|
| Drug and alcohol focused interventions | | | | |
| Kelley (2002) Setting: substance use treatment | 135 fathers 65% Caucasian; mean age 37.1 yrs; child mean age 10.4 yrs | Intervention 1: Individual cognitive behavioural therapy (IBT) (32 sessions CBT for substance use) | Couples –based psycho educational attention control (lectures on substance use) | -0.08 [-0.81, 0.65] (6m) -0.08 [-0.81, 0.65] (12m) |
| Slesnick (2013) Setting: homeless family shelter | 60 mothers 75% African-American; mean age 26.3 yrs; mean age of children 3.68 yrs | Community Reinforcement Approach (CRA) (integrates independent housing, 26 case management sessions and 20 CRA) | Emergency shelter for women and children for up to 3 weeks and linkage to housing and support services in the community | 0.05 [-0.48, 0.59] (6m) |
| Parenting focused interventions | | | | |
| Catalano (1999) | 144 parents 75% female; 77% white; mean age 35.6 years; mean age of children 10.4 years | Focus on Families (33 sessions of parent skills training with home-based case management services; methadone) | Standard methadone treatment | 0.10 [-0.24, 0.44] (6m) -0.47 [-0.82, -0.12] (12m) |
| Dakof (2010) Recruitment setting: family drug court | 62 mothers 42% black; mean age 30.2 yrs; at least 1 child removed (potential reunification) | Engaging Moms Program (EMP): multidimensional family therapy (attachment; family and romantic relationships; parenting skills; and emotional regulation, problem solving, and communication skills) | TAU (Standard family drug court case management service) | 0.0 [-0.55, 0.55] (6m) 0.00 [-0.51, 0.51] (12m) |
| Donohue (2014) Recruitment setting: child | 72 mothers 47% Caucasian; mean age 29.04 yrs, mean age of child 3.92 yrs | Family behaviour therapy (FBT) (20 sessions; home safety; child stimulation; parenting skills; | TAU (variety of community based services identified by child protection services) | -0.18 [-0.71, 0.36] (6m) |

| | | | | |
|--|---|---|---|---|
| protection services | | financial management; HIV and STD prevention) | | |
| Slesnick (2016) Setting: substance use treatment | 183 mothers 53.6% were white non-Hispanic; mean age 33.9 yrs; child mean age 11.54 yrs | Ecologically-based family therapy (EBFT) (12 sessions targeting family dysfunctional interactions) | Women's health education (WHE) (attention control) (sexual behaviour & health; pregnancy & childbirth) | 0.23 [-0.10, 0.56] (6m) 0.11 [-0.22, 0.44] (12m) |
| Integrated parenting substance use interventions | | | | |
| Kelley (2002) Setting: substance use treatment | 135 fathers 65% Caucasian; mean age 37.1 yrs; child mean age 10.4 yrs | Intervention 2: Behavioural couples' therapy (BCT) (12 sessions BCT targeting communication and interactional skills; 20 sessions IBT for substance use) | Couples –based psycho educational attention control (lectures on substance use) | -0.60 [-1.34, 0.14] (6m) -0.44 [-1.18, 0.29] (12m) |
| Lam (2009) Setting: substance use treatment | 30 fathers 63% white; mean age 34.1 yrs; child mean age 8.9 yrs | Intervention 1: Behaviour couples therapy (BCT) (12 sessions BCT targeting communication and problem-solving skills; 12 sessions individual CBT for substance use) | Individual-based therapy (IBT) (24 sessions CBT for substance use) | -0.32 [-0.99, 0.36] (6m) -0.38 [-1.05, 0.30] (12m) |
| Lam (2009) Setting: substance use treatment | 30 fathers 63% white; mean age 34.1 yrs; child mean age 8.9 yrs | Intervention 2: parent skills and BCT (PSBCT) (6 BCT sessions; 6 parent-skills training sessions; 12 individual-based CBT for substance use) | Individual-based therapy (IBT) (24 sessions CBT for substance use) | -0.27 [-0.94, 0.41] (6m) -0.43 [-1.11, 0.25] (12m) |
| Salanda (2015) Setting: child protection services | 31 mothers 87% Caucasian; mean age 30.48 years; mean 1.77 children | Families Actively Improving Relationships (FAIR) (parenting skills and substance use focused programme with low value incentives for progress) | TAU (variety of community based services identified by child protection services) | -0.42 [-1.28, 0.44] (6m) -0.51 [-1.37, 0.36] (12m) |

TABLE 3 Results of meta-analyses

| <i>Analysis</i> | <i>Result</i> | <i>Studies and Participants</i> |
|--|---|------------------------------------|
| 1.1 Frequency of alcohol use – all psychosocial interventions (6 months) | SMD - 0.32, 95% CI -0.51 to -0.13, $P = 0.0010$ | 6 studies; 377 participants |
| 1.2 Frequency of alcohol use – all psychosocial interventions (12 months) | SMD -0.25, 95% CI -0.47 to -0.03, $P = 0.02$ | 4 studies; 366 participants |
| 2.1.1 Frequency of alcohol use – substance-focused interventions (6 months) | SMD -0.35, 95% CI -0.867 to 0.16, $P = 0.18$ | 2 studies; 89 participants |
| 2.1.2 Frequency of alcohol use – substance-focused interventions (12 months) | SMD -0.09, 95% CI -0.80 to 0.61, $P = 0.18$ | 1 study; 36 participants |
| 2.2.1 Frequency of alcohol use – parenting-focused interventions (6 months) | SMD -0.21, 95% CI -0.46 to 0.04, $P = 0.10$ | 3 studies; 273 participants |
| 2.2.2 Frequency of alcohol use – parenting-focused interventions (12 months) | SMD -0.11, 95% CI -0.64 to 0.41, $P = 0.67$ | 2 studies; 219 participants |
| 2.3.1 Frequency of alcohol use – integrated interventions (6 months) | SMD -0.39, 95% CI -0.75 to -0.03, $P = 0.04$ | 2 studies; 131 participants |
| 2.3.2 Frequency of alcohol use – integrated interventions (12 months) | SMD -0.43, 95% CI -0.80 to -0.07, $P = 0.02$ | 2 studies; 131 participants |
| 3.1.1 Frequency of alcohol use – child present in sessions (6 months) | SMD -0.21, 95% CI -0.46 to 0.04, $P = 0.10$ | 3 studies; 273 participants |
| 3.1.2 Frequency of alcohol use – child present in sessions (12 months) | SMD -0.11, 95% CI -0.64 to 0.41, $P = 0.67$ | 2 studies; 219 participants |
| 3.2.1 Frequency of alcohol use – child not present in sessions (6 months) | SMD -0.47, 95% CI -0.76 to -0.18, $P = 0.002$ | 3 studies; 202 participants |
| 3.2.2 Frequency of alcohol use – child not present in sessions (12 months) | SMD -0.34, 95% CI -0.69 to 0.00, $P = 0.05$ | 2 studies; 147 participants |
| 4.1.1 Frequency of alcohol use – mother (6 months) | SMD -0.27, 95% CI -0.50 to -0.04, $P = 0.02$ | 4 studies; 328 participants |
| 4.1.2 Frequency of alcohol use – mother (12 months) | SMD -0.11, 95% CI -0.64 to 0.41, $P = 0.67$ | 2 studies; 219 participants |
| 4.2.1 Frequency of alcohol use – father (6 months) | SMD -0.43, 95% CI -0.78 to -0.09, $P = 0.01$ | 2 studies; 147 participants |
| 4.2.2 Frequency of alcohol use – father (12 months) | SMD -0.34, 95% CI -0.69 to 0.00, $P = 0.05$ | 2 studies; 147 participants |
| 5.1 Frequency of drug use – all psychosocial interventions (6 months) | SMD-0.02, 95% CI -0.18 to 0.15, $P = 0.85$ | 8 studies; 625 participants |
| 5.2 Frequency of drug use – all psychosocial interventions (12 months) | SMD-0.21, 95% CI -0.41 to -0.01, $P = 0.04$ | 6 studies; 514 participants |
| 6.1.1 Frequency of drug use – substance-focused interventions (6 months) | SMD 0.01, 95% CI -0.42 to 0.44, $P = 0.97$ | 2 studies; 87 participants |
| 6.1.2 Frequency of drug use – substance-focused interventions (12 months) | SMD -0.08, 95% CI -0.81 to 0.65, $P = 0.83$ | 1 study; 32 participants |
| 6.2.1 Frequency of drug use – parenting-focused interventions (6 months) | SMD 0.10, 95% CI -0.11 to 0.30, $P = 0.36$ | 4 studies; 407 participants |
| 6.2.2 Frequency of drug use – parenting-focused interventions (12 months) | SMD -0.13, 95% CI -0.52 to 0.26, $P = 0.52$ | 3 studies; 351 participants |
| 6.3.1 Frequency of drug use – integrated interventions (6 months) | SMD -0.39, 95% CI -0.75 to -0.03, $P = 0.04$ | 3 studies; 131 participants |
| 6.3.2 Frequency of drug use – integrated interventions (12 months) | SMD -0.43, 95% CI -0.80 to -0.07, $P = 0.02$ | 2 studies; 131 participants |
| 7.1.1 Frequency of drug use – child present in sessions (6 months) | SMD 0.07, 95% CI -0.13 to 0.26, $P = 0.50$ | 5 studies; 269 participants |
| 7.1.2 Frequency of drug use – child present in sessions (12 months) | SMD -0.17, 95% CI -0.51 to 0.17, $P = 0.32$ | 4 studies; 373 participants |
| 7.2.1 Frequency of drug use – child not present in sessions (6 months) | SMD -0.20, 95% CI -0.49 to 0.09, $P = 0.18$ | 3 studies; 196 participants |
| 7.2.2 Frequency of drug use – child not present in sessions (12 months) | SMD -0.34, 95% CI -0.69 to 0.01, $P = 0.06$ | 2 studies; 141 participants |
| 8.1.1 Frequency of drug use – mother (6 months) | SMD 0.07, 95% CI -0.12 to 0.25, $P = 0.48$ | 6 studies; 484 participants |

| | | |
|--|---|-----------------------------|
| 8.1.1 Frequency of drug use – mother (12 months) | SMD -0.17, 95% CI -0.51 to 0.17, $P = 0.32$ | |
| 8.2.1 Frequency of drug use – father (6 months) | SMD -0.31, 95% CI -0.66 to 0.04, $P = 0.08$ | 2 studies; 141 participants |
| 8.2.2 Frequency of drug use – father (12 months) | SMD -0.34, 95% CI -0.69 to 0.01, $P = 0.06$ | 2 studies; 141 participants |