

An Attachment-Based Parenting Training Program for Opiate Dependent Carers

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Received date: October 02, 2014; Accepted date: November 18, 2014; Published date: November 28, 2014

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Abstract

Background: Parental substance use can impede parenting, placing a significant number of children at risk, accounting for the high rates of child protection service (CPS) involvement with substance use affected families. Very few parenting programs provide evidence for improving parenting skills in this high risk group. However, attachment-based parenting programs provide some promise in improving outcomes for parents and children. This pilot study introduces such a program, the Circle of Security (COS), with opiate dependent carers.

Method: Pre and post COS intervention measures of substance use (ATOP), mental health (DASS21) and child-parent attachment (CHQ) were conducted. A qualitative feedback questionnaire was also undertaken to determine the tolerability, acceptability and experiences of participants.

Results: 8 participants commenced the study with a retention rate of 75%. Heroin (M=-2.4), other opiate (M=-2.3), alcohol (M=-2.7), nicotine (M=-0.1) and injecting drug days (M=-3.0) were reduced following the intervention. Parental stress (M=-4, 19%), depression (M=-3.29, 16%) and anxiety (M=-2.57, 12%) improved over the study period. No clinically significant shift in carer-helplessness was identified; however parents reported improved parenting in a number of areas. Participants highly rated the program across multiple domains.

Conclusions: The COS is well tolerated, accepted and positively experienced by this group of opiate dependent carers. The program appears to assist in reducing substance use levels and improving mental health symptoms in this vulnerable group of parents. The program warrants further evaluation with opiate dependent parents as part of a randomised control trial.

Keywords: Attachment; Parent Training; Opiate; Dependence; Pilot Study

Background and Literature Review

Problem drug use can impede parenting and the provision of a safe, nurturing environment for children's social and emotional development. These parenting deficits begin when children are infants and continue as the child moves through school-age and into adolescent years. High rates of child abuse and neglect, up to 40%, occur in many families in which either or both parents abuse illicit drugs [1,2]. Maternal substance abuse specifically, more than most other psychiatric or social problems (with the exception of poverty) is the most common factor involved when children come to the attention of Child Protection Service (CPS) [3,4].

The self-reported impact of drug dependence on children includes material neglect, exposure to drug use and dealing, increased exposure to and to the risk of violence and physical abuse, exposure to criminal behavior and family break up [5]. Research has consistently shown a pattern of significantly less supervision of a child, more punitive forms of discipline, less discussion and positive involvement with the child, more parental disagreement regarding discipline and less pro-social skills in parenting [6-10].

Australian research by Quinlivan et al. [11] suggest that despite excellent perinatal care, established drug abuse is associated with poorer maternal attachment. These attachment difficulties are

manifested by parental guilt, anxiety, anger and uncertainty associated with drug use [12]. User's own attachment experiences, that may have significantly influenced the initiation and maintenance of drug use problems, are evoked with the pressures of parenthood. Without intervention, these parents risk the intergenerational transmission of attachment difficulties with their own children [13]. Disorganised or insecure attachment independently in many studies has been shown to result in enduring adverse outcomes for children including behavioral, social, affective and substance use problems [3,7,14,15]. Research studies broadly examining parenting interventions have shown that helping drug dependent parents in improving their parenting skills results in significant positive change for parents, including reducing their drug use but also across other domains of family and child functioning [2,16].

Behavioral parent training programs for drug-dependent mothers have had limited success in improving parent-child relationships or children's psychological adjustment [17-19]. In Australia, Dawe and Harnett [2] developed an intensive, home-based intervention, the Parents Under Pressure (PUP) program for families with a parent on a methadone maintenance program. The intervention combined methods for improving parental mood and parenting skills through the use of mindfulness techniques in cognitive therapy with weekly sessions over 10-12 weeks. Although the program resulted in a reduction in child abuse potential, rigid parenting attitudes and child behavior problems, follow up studies of PUP have suggested the program can achieve short-term change in some but not all families [20]. To date, these interventions have been expensive, resource

intensive and have shown limited evidence of improving outcomes for substance using parents or their children.

Suchman et al. [21] postulate that one reason behavioral parenting programs may have had limited success with drug dependent parents is their lack of attention to the emotional quality of the parent-child relationship. Research on attachment suggests that the emotional quality of mother-child relationships is an important predictor of children's psychological development through school-age and adolescent years [15]. For children, interventions aimed at improving parents' reflective and mindfulness capacities have demonstrated improvements over 6 months in rates of potential child abuse, rigid parenting attitudes and child behavior problems [2]. Furthermore, mentalisation, the capacity for understanding behavior in light of underlying mental states and intentions, is recognised as another domain in which mother-child attachment can be enhanced for the benefit of child emotional development and resilience [22]. Attachment style parenting interventions have also been shown to have long term effects on reducing substance use disorders of the children of drug dependent parents [22].

The evidence from intervention studies with high-risk non-substance-using parents has shown attachment-based approaches hold considerable promise, especially when maternal representations and reflective functioning are targeted [23]. Studies of attachment-based parenting interventions with at-risk mothers (including the *Circle of Security and Watch, Wait and Wonder*) have shown that mental representations of caregiving and child attachment classification can change in response to intervention [24-27].

The Circle of Security (COS) has been one such program that has gained some popularity within Australian infant and child mental health and community services. Its development has drawn on the dynamics of secure/insecure attachment patterns whilst also exploring caregiver patterns of behavior and caregiver representations. The program has five key goals including: (a) establish the therapist and group as a secure base from which to explore caregiver-child relationships; (b) increase caregiver sensitivity and responsiveness by providing a map of children's basic attachment needs; (c) increase caregivers knowledge of verbal/nonverbal cues signalling children's internal states; (d) increase caregiver empathy by supporting reflection regarding attachment orientated interactions; and (e) increase caregiver reflection about their own developmental history and patterns of caregiving behavior (Figure 1) [25].

Research studies of the COS intervention have shown it to be effective in reducing insecure attachment and increasing security for children in the age range between toddlerhood and early school years [25]. COS intervention evidence is based on a study of 65 toddlers and pre-schoolers assessed for attachment security before and immediately after intervention. The participants recruited were from vulnerable child programs in the US; all had low incomes, and most parents and some of the children had experienced maltreatment or trauma (no comment on substance use was made). Prior to COS intervention, only 20% of the children were classified as secure; following the COS intervention, a significant shift occurred with 54% re-classified as secure. A significant reduction in rates of disorganised attachment (from 60% to 25%) was also found [25]. Given that insecure and disorganised attachment can be a risk factor for future psychopathology, the COS protocol offers a preventative and treatment intervention for vulnerable child-parent dyads. Importantly the COS program can make evidence-based claims of low risk of negative outcomes, ie to do no harm.

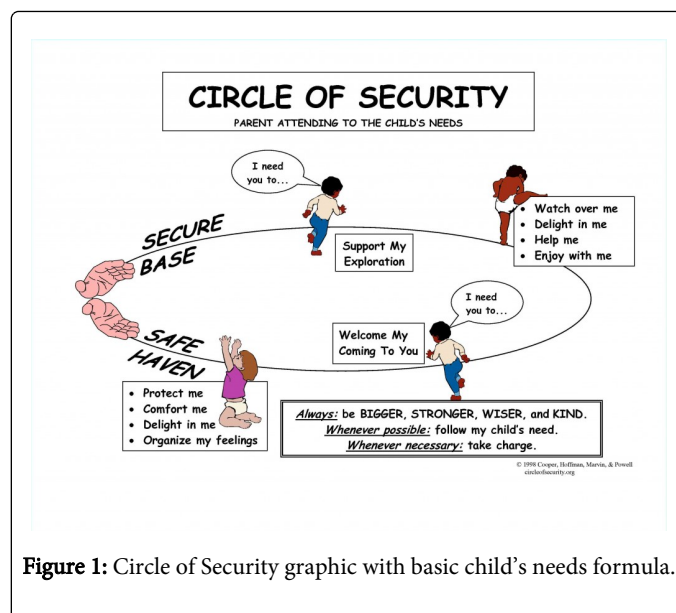


Figure 1: Circle of Security graphic with basic child's needs formula.

The Present Pilot Study – Enhancing Secure Attachment for Opiate Dependent Parents and their Young Children

While reporting rates of child neglect or abuse in Australia involving substance using parents remains high, around 50% of CPS cases, preventative and treatment interventions are unfortunately rarely available from Drug and Alcohol services [28-30]. Despite the high needs, substance disordered clients are frequently excluded from traditional mental health services, including child and adolescent focussed services. To the author's knowledge, the 8 week COS program has never been trialled or studied in a specific substance disordered population.

The aim of this study was to evaluate a pilot study of the COS 8 session DVD group program, with opiate dependent caregivers. The study hypotheses were that the intervention would improve caregiver reflectiveness and empowerment in the child-parent dyad, reduce parent substance use, and improve parent mental health. A final objective was to qualitatively examine the tolerability, acceptability and experiences of this group of parents to the short version COS program.

Method

The research project received ethics approval by the Northern Sydney Coast EC0012 (NSC) Human Research ethics Committee – 1205-118M

The research study evaluated the COS 8 session group program for opiate dependent primary carers of children between 0 and 5 years of age. As this has been the first time that the COS intervention has been studied in an opiate dependent parent group, no randomised control group was established and the study was undertaken as a pilot study.

The study was advertised to active clients of two Opiate Treatment Program (OTP) clinics in the Sydney metropolitan area via posters displayed in clinic waiting areas, and by notification from case managers. To be eligible for the study, participants had to be active clients of one of the OTPs and must be a primary carer to one or more

children aged 0 to 5 years of age. Children did not have to be permanently in the participants care at the time of commencing the study so as not to exclude participants' who may have had their children temporarily removed by CPS.

Informed consent to participate was obtained and all participants were provided with verbal and written information about the research pilot and COS program. Participants were informed of the mandatory notification requirements to local CPS if their participation identified any child who was thought to be at risk of abuse or neglect.

The COS sessions occurred at 2 separate locations, comprising 2 groups of 4 caregivers. The first 8 participants recruited were accepted into the study. Sessions occurred at the same time, on the same day, for 8 consecutive weeks. Participants were encouraged to privately arrange child care. However, caregivers were not excluded if they attended with their children. Supervision of participants' children remained the responsibility of the participant.

Each session ran for approximately one hour, and was delivered directly from the COS manual in conjunction with the relevant DVD chapter by the primary investigator who has COS facilitation accreditation. Non-COS trained co-facilitators were utilised in both groups.

Participants received free car parking permits for session times, otherwise received no financial or material incentives for participating in the study.

Measures

Data collection occurred at either the beginning of the first session (pre-intervention) and/or at the end of the last session (post-intervention).

a). Depression, Anxiety, Stress Symptoms 21 (DASS 21) – pre and post intervention. The DASS is a set of three self-report scales designed to measure the core negative emotional symptoms of depression, anxiety and stress. The DASS 21 is a short version of the questionnaire, containing 7 items for each domain. The DASS 21 has been shown to have high internal consistency and to yield meaningful discrimination in a variety of research and clinical settings [31].

b). Caregiving Helplessness Questionnaire (CHQ) – pre and post intervention.

A screening tool designed to assist researchers and clinicians in studying parent-child relationships from an attachment perspective, specifically disorganisation of attachment. It contains three subscales including mother helplessness, mother-child frightened, and child caregiving. All three subscales have shown discriminant validity in multiple large scale studies [32].

c). Australian Treatment Outcome Project (ATOP) – pre and post intervention.

The ATOP is a single page instrument that uses client self-report responses to 24 items of drug and alcohol use. The ATOP assesses individual client status across two general domains in the preceding four weeks: substance use (including injecting behaviors); and general health, including physical, psychological, social and quality of life indicators. The ATOP has had psychometric validation in more than 300 clients across 3 OTP clinics in New South Wales, and refined in line with client and clinician feedback. The ATOP was completed by the participants' case manager.

d). Circle of Security Parenting Questionnaire – post intervention only.

Developed in 2010 by the authors of the Circle of Security protocol, this evaluation is a 13 question qualitative feedback/satisfaction questionnaire completed by participants at the end of the COS intervention to determine the tolerability, acceptability and experiences of this group of parents to the program.

Pre and post intervention measures were compared using standard statistical analysis identifying variations across a number of research variables.

Results

6 female and 2 male participants were included in the study. The mean age of participants was 36 years (range 20-54). All participants were financially supported by welfare payments, none were employed and all were of Anglo-Australian background. All participants were primary caregivers, however 4 of the participants had their children in temporary CPS custodial arrangements at the time of commencing the study. The average number of children per participant was 1.25. The average child age was 2.7 years (range = 6 months to 8 years; One participant was included with an 8 year old child in view of the participants clinical circumstances and need for parent training at the time of the study). In terms of the opiate treatment of the participants, 5 were managed on methadone with the remaining 3 on buprenorphine/naloxone.

All 8 participants attended the first COS session with one participant not continuing thereafter. That participant was lost to follow up and did not complete post intervention questionnaires. One participant completed half of the program, and then voluntarily entered an inpatient rehabilitation program which required her to withdraw from continuing the study. However that participant was included in the post intervention data. The remaining 6 participants completed all 8 COS sessions with retention rate of 75% for the entire program. No mandatory notifications were made during the study period.

Parent Substance Use

Other than alcohol, the amount of a substance used is difficult to quantify accurately as the purity and weights purchased around the country vary significantly. As such, frequency of use is accepted as the clinically measured indicator in the ATOP.

The mean change in substance use frequency across the different substance categories is indicated in Figure 2. The greatest change occurred with a reduction in alcohol intake by $M=-2.7143$ days. The mean standard units (SU) of alcohol consumed per drinking day was $M=6.4$, prior to the intervention and $M=4.8$ after. This equates to a mean reduction of $M=1.6$ SU per drinking day per participant across the study period. Similarly, mean reductions in the frequency of use occurred with heroin ($M=-2.4286$), other opiates ($M=-2.2857$), and cannabis ($M=-0.7143$). One person stopped smoking cigarettes during the study period resulting in $M=-0.1429$ reduction in smoking frequency. The number of injecting days reduced by $M=-3$ across the study period per participant. As only 4 participants indicated injecting behavior before or during the study period, for each participant injecting drugs, the reduction in injecting days equated to 5.25 days each.

The substances that did not follow the trend of decreased use was benzodiazepines and to a lesser extent amphetamines. The increase in use was attributable to two participants who reported a relapse in use due to accommodation and physical health issues during the study.

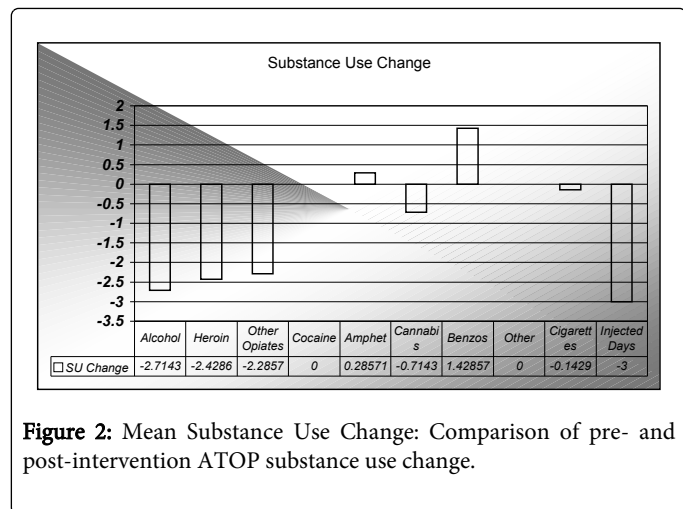


Figure 2: Mean Substance Use Change: Comparison of pre- and post-intervention ATOP substance use change.

Parental Mental Health

All domains on the DASS 21 were reduced following the study intervention as shown in Figure 3. The stress domain showed the greatest reduction in pre- vs post- scores (M=-4, 19%), followed by the depression (M=-3.29, 16%), and then the anxiety domain (M=-2.57, 12%). A similar improvement in overall psychological health occurred on the single question rating scale in the ATOP, with an improvement by M=1.86 (18.6%) following the intervention as measured on a Likert Scale from 0-10 (0=poor and 10=good).

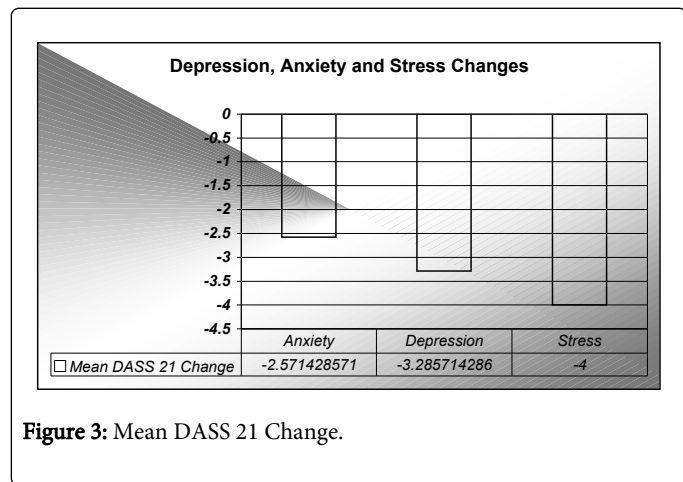


Figure 3: Mean DASS 21 Change.

Caregiver Reflectiveness and Empowerment

Mean changes in the CHQ pre- versus post-intervention were small, in the order of -0.3 to 1.4 from a CHQ possible change of 35 units (See Figure 4). However, the only domain with a trend towards reducing pathology was the Mother/Child Frightened domain (M=-0.29, -0.008%). The domains Mother Helpless (M=0.86, 0.02%) and Child Care Giving (M=1.43, 0.04%) increased following the study intervention.

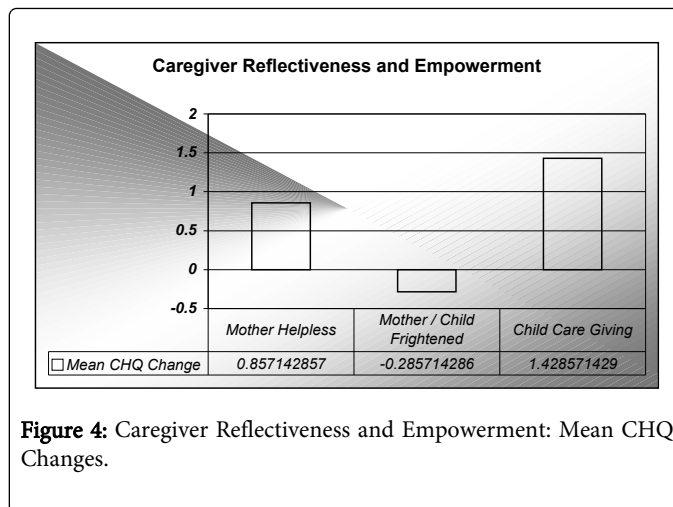


Figure 4: Caregiver Reflectiveness and Empowerment: Mean CHQ Changes.

Qualitative Feedback

Overall, the participants highly rated the COS parenting program (see Table 1). The program rated highly in terms of being easily understood and in improving child-parent relationships. A majority of participants reported the program had helped to reduce their stress levels, with most being able to view their child's behavior differently after completing the program. Comments from participants included, "I learned to relax and take time to breathe before dealing with highly stressful situations" and "It gives me the chance to separate what are my things and what my child needs...it gives me (a) chance to change things"

All participants reported gaining an understanding about their own "shark music", a program specific concept for internal signals of stressful/difficult personal emotions when parenting, whilst a majority felt they could now reflect on child behavior and child-parent interactions. Improvements were noted in participants' being better able to identify their child's needs and in repairing ruptures of the parent-child relationship, eg. "I now see that she has needs and it is not about her just being naughty".

Only one participant had noticed an improvement in their child's behavior since completing the program however most reported having developed new parenting abilities. All the participants indicated they would highly recommend the COS program to other parents. One parent commented, "It's a way to help parents connect more with their child's emotional needs and help them develop emotionally into healthy adults. It helps parents see their children better, whilst separating your own issues from what your child needs."

	Positive response	Neutral response	Negative response	Mean strength of response
Overall Rating of COS program	7-Jul	-	-	0.95
Easy to understand	7-Jul	-	-	1
Reduced parental stress	7-Apr	7-Mar	-	0.79
Did COS affect your	7-Jun	7-Jan	-	0.95

relationship with your child				
Do you now view your child's behavior differently	7-May	7-Feb	-	0.9
Better able to identify own "Shark Music"	7-May	7-Feb	-	0.9
Better able to identify child's needs	7-Jun	7-Jan	-	0.95
Better able to repair ruptures to carer-child relationship	7-Apr	7-Feb	7-Jan	0.71
Improved reflective capacity	7-Apr	7-Jan	7-Feb	0.64
Improved child behavior	7-Jan	7-Jun	-	0.71
Developed improved parent abilities	7-May	7-Jan	7-Jan	0.79
Ceased some old parenting behaviors	7-Jun	7-Jan	-	0.93
Would recommend COS to other parents	7-Jul	-	-	1

Table 1: Results from the COS Parent Feedback Questionnaire. (Mean strength of response calculated from Likert scales, 0=disagree, 1=agree).

Discussion

A recognised challenge in the Drug and Alcohol field is difficulties in the engagement of substance users in treatment. Although maintenance opiate programs provide a unique opportunity for clients to interface with health services, their daily contact is often only fleeting and superficial. In a review of maternal engagement in 6 different parenting based programs for drug-dependent mothers, Suchman et al. [33] identified that all programs had difficulty in engaging mothers in treatment. In this pilot study, retention rates across the 8 week program were excellent. The high retention rate and positive qualitative feedback in this study suggests that this patient subpopulation has the potential to readily accept and engage in the COS short version format.

An important measure of any novel intervention is that it must do no harm. In this study, no mandatory CPS reports occurred during the intervention and the improvements in substance use and depression, stress and anxiety symptoms suggest that the program does not cause harm to participants or to children. The participants strongly endorsed the program and highly recommended it to other parents.

Previous parenting studies of drug-dependent mothers have shown that interventions can play an important role in the reduction of maternal drug abuse and other behaviors that are harmful to their

children and families, as well as themselves [33-35]. This study demonstrated a trend towards reducing use of alcohol, heroin, other opiates and the frequency of injecting behaviors of participants, while a small increase in amphetamine and larger benzodiazepine use was limited to two participants. The reasons for the overall trend towards reducing substance use frequency (and alcohol quantities) are likely to be multi-factorial but may in part be attributable to the reduction in corresponding stress, anxiety and depression levels reported by participants. Previous studies have demonstrated that maternal substance abuse severity and psychological maladjustment were the strongest predictors of children's out-of-home placement [33]. Although one third of participants had children in out-of-home placement, this pilot study builds on previous studies that interventions that reduce substance use and enhance caregiver mental health may improve child related outcomes.

In addition, the impact of more positive parenting experiences for caregivers may alter reward neurobiology to reduce substance use levels [33]. Many substances of abuse have been shown to affect neurotransmitter pathways and areas in the brain associated with initiation of behavior, hedonic reward and motivation [36,37]. These central pathways, especially dopaminergic systems, are also thought to be critically involved in a parent's capacity to invest in the care of their children [38]. The importance of treatment interventions that focus on helping parents invest in their children through a securely attached relationship, rather than substances that subsume similar neurobiological pathways, may "reset" the focus of the reward system [39,29]. If parenting satisfaction were to assist in shifting reward focused patterns of behavior, specifically substance use, then parenting interventions focused on enhancing positive child-parent interactions such as the COS program, may provide a novel intervention in the armament of substance use disorder treatments.

Past parenting intervention studies with substance dependent mothers have not shown significant measurable changes in mother-child interactions [33]. This COS pilot study also demonstrated no clinically significant change in carer-child interactions by way of the CHQ. A number of reasons may account for this. The CHQ [32] utilises the concept of maternal helplessness when thinking about the underlying representational and behavioral associated with disorganised attachment, an extreme end of insecure attachment. The small sample size may be reflected in the absence of disorganised attachment in the study group. The temporal nature of measuring attachment variables may also be an important contributor to the study's CHQ findings. Indeed, an initial increase in Carer Helplessness may reflect a heightened reflective capacity by parents of attachment difficulties. Limited reported change in child behavior by participants at the completion of the study may also indicate the need for time in significantly changing parent-child interaction and therefore further studies may warrant serial or delayed attachment measures for meaningful results and conclusions to be drawn. Further research of the COS would warrant careful selection of more sensitive, perhaps multiple, attachment measures conducted beyond the delivery and completion of the program.

The program was easy to provide, has reported high fidelity of delivery [25] and in this opiate dependent caregiver group was well received. The availability of the program throughout Australia is increasing, and this high needs, vulnerable group of parents and children, appear to benefit from the program. Previous studies focussed on attachment with substance abusing parents suggest a possible intergenerational effect consistent with the theoretical

underpinnings of Bowlby's (1982) concept of attachment [33]. These studies suggest that early caregiving experiences play an important role in directly shaping mothers' substance abusing behavior and comorbid psychopathology, and in directly and indirectly influencing the continuity of parenting styles. The longer term, preventative role that this program may affect is unknown and warrants further longitudinal investigation.

Finally, Velleman and Templeton [40] have noted that "many child care practitioners have told us that they lack the skills to work with substance-misusing parents .." and "strangely, many practitioners in substance misuse services tell us the converse: that they do not have the skills to work with children and the wider family to the same purpose". Beyond the common therapeutic techniques common to both groups of health professionals, that is, empathy, developing therapeutic alliances, exploration of difficulties, setting achievable goals, and empowering individuals, specific parenting programs such as COS, provide a valuable bridge of the two health care settings for this vulnerable group of parents and children in the community.

Limitations

The study has many limitations as it a pilot study and thus is statistically limited by the small sample size and therefore is under powered to draw conclusions with confidence. In addition, it is difficult to determine the significance of single measure trends. Alternate cross validating measures that have been used in similar attachment intervention studies may be more appropriate in future studies. They could also be repeated at longer intervals to determine the strength and stability of any change. Furthermore, the study did not provide detailed demographics of the study population, and therefore the results are not generalized to representative clinical groups. However, as the intervention has never been studied in this population, the pilot suggests that further research is warranted including a randomized control trial to determine effect size considering the positive trends in participant feedback and quantitative study results.

The measures used in the study provide only general, broad indices of the study hypotheses. Furthermore, the CHQ has been designed for caregivers (specifically mothers) with children between 3 and 11 years whilst in this study the mean age of children was 2.7 years and for those with disorganized attachment. Careful consideration and selection of sensitive measures of attachment are required for future studies.

Finally, the study only included participants who were opiate dependent and in a maintenance program, therefore the results are not generalizable to the broader substance using population. Significant differences exist between (eg opiate versus alcohol) and within (eg binge pattern versus dependent) substance type subpopulations. However, the study was representative of clinical group of opiate dependent parents including both stable and unstable substance use circumstances [41,42].

Conclusion

The COS (short version) program is a widely available, evidence based attachment parenting program that appears to be well tolerated by opiate dependent caregivers of young children. Although highly operationalised, the program provides valuable advice, guidance and experience to substance using parents, perhaps benefiting them in improving their caregiving capacities', whilst reducing their stress,

depression and anxiety levels when caring for young children. These findings were also associated with a reduction in the frequency and quantities of some substances used in this caregiver groups. This pilot study has provided valuable information suggesting that further research in attachment parenting, specifically the COS program, should be conducted in this vulnerable and high need group.

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