

A Quantitative Exploratory Evaluation of the Circle of Security-Parenting Program with Mothers in Residential Substance-Abuse Treatment

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Abstract:

Maternal substance abuse is a risk factor for child maltreatment, child attachment insecurity, and maladaptive social information processing. The aim of this study was to conduct a quantitative exploratory evaluation of the effectiveness of an attachment-based parent program, Circle of Security-Parenting (COS-P; G. Cooper, K. Hoffman, & B. Powell, 2009), with a community sample of 15 mothers in residential treatment for substance abuse. Participants attended nine weekly group sessions and were given three measures at pretest and posttest: the Emotion Regulation Questionnaire (J.J. Gross & O.P. John, 2003), the Parent Attribution Test (D. Bugental, 2011), and the Parenting Scale (D.S. Arnold, S.G. O'Leary, L.S. Wolff, & M.M. Acker, 1993). The results indicate that mothers who attended the majority of group sessions showed greater improvements on all three variables. Participants who attended some of the sessions showed some improvements on the measures, but participants who did not attend the group sessions had no improvements, and on some measures, declined significantly. Further analyses of demographic data indicates that participants with more education, no personal history of child maltreatment, less time in the residential program, and lower social desirability scores demonstrated more positive outcomes. These findings suggest that the COS-P may positively impact parental risk factors associated with child maltreatment and maladaptive social information processing in the context of residential substance-abuse treatment.

Keywords: maternal substance abuse | maladaptive social information processing | child maltreatment | child attachment insecurity | Circle of Security-Parenting (COS-P)

Article:

Child maltreatment (CM) is a pervasive social problem in the United States that occurs across all socioeconomic, religious, cultural, and ethnic groups (U.S. Department of Health & Human Services, 2012). In 2010, approximately 3.3 million child-abuse reports involving an estimated 5.9 million children were made (U.S. Department of Health & Human Services, 2012). Researchers have documented the negative impact of CM on a child's development (Centers for Disease Control and Prevention, 2008). Parents make up the majority (80%) of CM perpetrators (U.S. Department of Health & Human Services, 2012).

Accordingly, many prevention and intervention programs are directed toward parents (Child Welfare Information Gateway, 2011). In fact, the most important approach to child-abuse prevention is to improve parenting (Barth, 2009). One of the primary vehicles for this effort is parenting programs.

The purposes of the current study are (a) to explore the effectiveness of an attachment-based parenting program at reducing three parental risk factors for CM among a community sample of mothers in residential substance-abuse treatment; and (b) to examine what demographic variables, including other risk factors for CM, may influence the impact of the program with the mothers. Prior to presenting the methods and results of the study, we review the existing literature on the parental risk factors for CM, the effectiveness of attachment-based parenting programs for CM, and the social information processing model, which is the theoretical model often used to explain CM and other forms of social aggression.

LITERATURE REVIEW

Parental Risk Factors for Child Maltreatment

CM is a complex social issue with multiple determinants (Belsky & Jaffee, 2006). It occurs within cultural, community, family, and parental contexts (Harrington & Dubowitz, 1999). Since parents are the main perpetrators of CM and are a primary contributor to a child's development, parents have received the most focus in CM prevention (Azar, 2002). This section contains a brief review of the five most frequently cited parenting factors associated with CM (Black, Heyman, & Smith Slep, 2001; Centers for Disease Control and Prevention, 2008).

Harsh discipline

Harsh discipline is one of the most documented parenting factors associated with CM (Black et al., 2001; Farc, Crouch, Skowronski, & Milner, 2008). Harsh discipline practices are parental behaviors (e.g., spanking, yelling, screaming, and threatening) in response to perceived child misbehavior (Bailey, Hill, Oesterle, & Hawkins, 2009). Researchers have documented that harsh parental discipline is associated with CM and future increased externalizing and internalizing behaviors in children (McKee et al., 2007; Prinzie, Onghena, & Hellinckx, 2007). Accordingly, most parenting programs focus on teaching parents more positive discipline strategies for managing child behavior (Barth, 2009).

Hostile attributions

Hostile attributions represent another factor seen in parents at risk for CM. Attributions are defined in this study as the causal beliefs a parent has about why his or her child(ren) are behaving in a specific way (Bugental & Happaney, 2002). Although attributions can be categorized in various arrangements (Mah & Johnston, 2008), this study groups attributions into two types: neutral and hostile (Black et al., 2001). These two types can be illustrated with the example of a young child running down a store aisle away from his or her mother. One mother might believe the child is running away because he or she is curious about something shiny on a nearby aisle shelf (neutral attribution); however, another mother may believe the child is running away because he or she is trying to make the parent mad (hostile attribution). There is a plethora of research on the relationship between hostile parental attributions and child physical abuse (Berlin, Dodge, & Reznick, 2013; Bugental & Happaney, 2002; Bugental & Schwartz, 2009). Much like the research on harsh discipline, parents at risk for child abuse have more hostile attributions than do parents who are at lower risk for child abuse (Montes, de Paul, & Milner, 2001). Intriguingly, even early hostile maternal attributions in parents of newborns have been able to predict later CM (Bugental & Happaney, 2004), indicating that there is something in the parents' attributions prior to child misbehavior that is associated with later CM.

Emotion regulation

Emotional regulation has not received as much attention in the CM literature as have the two parent factors just reviewed, yet existing evidence has suggested that parents who use harsh discipline practices may not be skilled at regulating their affect. Frodi and Lamb (1980) found that parents who have maltreated their children show greater physiological arousal than do nonabusing parents in response to videotapes of infants crying. These findings have been confirmed by other researchers using additional biomarkers for emotion regulation, including cortisol reactivity (Lorber & O'Leary, 2005; Martorell & Bugental, 2006). Further, because CM often leads to children with poor emotion-regulation skills, there may be an intergenerational transmission of deficient emotion-regulation skills from parent to child (Azar, 2002; Belsky & Jaffee, 2006; Sameroff, 2009).

Parental history of child maltreatment

While researchers have found that not all parents who experienced abuse when they were children go on to commit maltreatment with their own children, parents with a history of CM are at a higher risk for later CM with their own children (Appleyard, Berlin, Rosanbalm, & Dodge, 2011; Egeland, Jacobvitz, & Sroufe, 1988). Many studies have documented a higher incidence of a past history of CM in mothers who have been substantiated for CM with their own children, as compared to diverse community samples and parents who have not been substantiated for CM (Coohey & Braun, 1997; Newcomb & Locke, 2001; Whipple & Webster-Stratton, 1991).

Substance abuse

Substance abuse is implicated in one to two thirds of the CM cases in the child welfare system (Goldman, Salus, Wolcott, & Kennedy, 2003), and maternal substance abuse in particular is one of the most common factors associated with CM (Suchman, Pajulo, DeCoste, & Mayes, 2006).

Laughinghouse (2009) found that mothers who abuse substances have higher incidences of hostile attributions and inappropriate expectations of child behavior. Due to the behavioral manifestations of substance abuse (e.g., erratic and impaired behavior, poor awareness and sensitivity), mothers who abuse substances frequently create repeated disruptions in their parenting behaviors (Mayes & Truman, 2002). These disruptions can create a negative effect on the parent–child relationship, as evidenced in the increased rates of insecure attachment in children who have parents with substance-use disorders (Pajulo, Suchman, Kalland, & Mayes, 2006).

Because attachment theory is the predominant and most well-researched theory of the parent–child relationship, and the attachment relationship is one of the primary influences on a child's future developmental outcomes (R. Clark, Tluczek, & Brown, 2008). Suchman et al. (2006) called for an attachment-based approach to parenting programs for parents with substance-abuse issues. An attachment-based approach is one that is grounded in attachment theory and has goals of improving the parent–child attachment relationship.

Clients in residential substance-abuse treatment are making an effort to control the substance-abuse parental risk factor. However, when the clients bring their children with them to treatment, clinicians often still see many of the other aforementioned parental risk factors for CM in their dyadic interactions, such as harsh discipline, parental hostile attributions, poor emotion regulation, and insecure attachment among the children (Fewell, 2011; Mayes & Truman, 2002).

Parenting Programs to Prevent Child Maltreatment

Parenting programs are among the most widely used treatment modalities for addressing CM (Child Welfare Information Gateway, 2011). Parenting programs are defined as standardized interventions designed to improve parenting practices that promote protective factors and positive outcomes for both parents and children (Barlow & Stewart-Brown, 2000; Centers for Disease Control and Prevention, 2009; Child Welfare Information Gateway, 2008b; Lundahl, Nimer, & Parsons, 2006). Researchers have found that both individual and group parenting programs are effective at reducing CM (Centers for Disease Control and Prevention, 2009; Lundahl et al., 2006).

For the current study, the focus is on group parenting programs. Group-based programs may be advantageous for parents at risk for CM. First, parents at risk for CM are often socially isolated (Azar, 1997, 2002) and in need of social support (Centers for Disease Control and Prevention, 2008). The social support fostered in group-based parent programs may buffer parental stress, which is often high in families at risk for CM (Milner & Dopke, 1997). Second, group-based parent programs have the advantage of being cost-effective, as compared to individual-only treatments (Samuelson, 2010). Finally, the group-based format is the primary therapeutic delivery format in many substance-abuse treatment programs, so it is imperative to have attachment-based group models for these high-risk parents (Ashley, Marsden, & Brady, 2003; North Carolina Department of Health and Human Services, 2012).

Since the majority of child-abuse reports involve children under the age of 4 years, many researchers are particularly interested in identifying parenting programs that are effective with

parents of young children ages birth to 5 years (U.S. Department of Health & Human Services, 2012). During this important developmental time period, parenting programs translate, integrate, and deliver the most up-to-date research on healthy parent–child relationships, positive discipline practices, and CM prevention (Barth, 2009; Centers for Disease Control and Prevention, 2008). Given the well-documented importance of attachment security for healthy, long-term developmental outcomes for children (Centers for Disease Control and Prevention, 2008), the availability of attachment-based parenting programs that are manualized with easy-to-use formats is critical for broad dissemination (Greenberg, 2005).

Researchers have made substantial progress over the past 20 years developing and evaluating attachment-based parenting programs. Although they vary in format (e.g., home or group) and duration (i.e., from four sessions to yearlong programs; Moss et al., 2012), there are several individual- (e.g., Dozier et al., 2009; Lieberman, Ippen, & Van Horn, 2006; Van Zeijl et al., 2006) and group-based attachment programs (Cassidy et al., 2010; Hoffman, Marvin, Cooper, & Powell, 2006; Niccols, 2008) that have been discussed in the literature. Several researchers have conducted meta-analyses and reviews of these attachment programs (e.g., Bakermans-Kranenburg, van IJzendoorn, & Juffer, 2003; Berlin, 2005; Egeland, Weinfield, Bosquet & Cheng, 2000; Tarabulsky et al., 2008). Generally, researchers have found that these programs show efficacy at improving parent sensitivity, parent discipline practices, child security, and child behavior problems. However, a need remains for more research that focuses on specific populations, theoretical constructs, bidirectional interactions, evaluations of different attachment programs, and longitudinal follow-up studies (Berlin, 2005; Moss et al., 2012; Van Zeijl et al., 2006).

The literature on individual attachment programs (i.e., programs for individual parent–child dyads, either in a home or an office setting) is more developed than that on group-based attachment programs (Berlin, 2005). Several researchers have conducted randomized controlled trials that document the effectiveness of individual attachment programs with diverse samples (Cicchetti, Rogosch, & Toth, 2011; Dozier et al., 2009; Lieberman et al., 2006), but the research on group-based attachment programs lacks multiple randomized control trials, which severely limits the ability to make causal inferences about treatment effects (Berlin, 2005).

Circle of Security-Parenting

The Circle of Security-Parenting Program (COS-P; Cooper, Hoffman, & Powell, 2009) is a revised version of the original 20-week Circle of Security (COS) intervention that was written and designed by attachment theory practitioners and researchers and integrates 60 years of attachment research for parents, with easy-to-understand diagrams (Cooper et al., 2009; Marvin & Whelan, 2009). The original COS intervention model included a pre-intervention, 2-hr, videotaped lab visit with the dyad (caregiver and child) that was analyzed by the practitioner to determine specific caregiver thoughts and behaviors that need to be addressed during the intervention (Marvin, Cooper, Hoffman, & Powell, 2002). It also included 20 weekly group sessions and four hour-long home visits to review the videotapes of the dyad and a plan for intervention termination (Hoffman et al., 2006). Thus, the original COS intervention is a mixed delivery model that has both group and individual components.

In 2009, some of the COS authors condensed the 20-session intervention to a more cost-effective, manualized, eight-session DVD program called *COS-P*, which can be used individually or in groups (Cooper et al., 2009). The goals of *COS-P* include increasing parents' observation and inferential skills related to understanding their child's needs, increasing parents' sensitivity to their child, increasing parental emotional regulation, and decreasing parents' negative attributions of their child (Cooper et al., 2009).

Researchers have examined the original 20-week COS intervention both qualitatively (Lee, Griffiths, Glossop, & Eapen, 2010; Marvin et al., 2002; Page & Cain, 2009) and quantitatively (Cassidy et al., 2010; Hoffman et al., 2006). In these preliminary studies, researchers determined that the original, 20-week COS intervention was generally effective at changing insecure and disorganized child attachment relationships to more secure attachment relationships, but more longitudinal and randomized controlled studies were recommended.

Research examining the shortened *COS-P* program is needed. To date, there has been only one peer-reviewed study explicitly evaluating the *COS-P* eight-session, DVD-based format. Pazzagli, Laghezza, Manaresi, Mazzeschi, and Powell (2014) presented a single case study in which *COS-P* was used individually with a caregiver, who showed improvements on several parental indices. At the time of this writing, we had not found any published research studies on *COS-P* in a group format.

Social Information Processing

This study is grounded in the social information processing model (Lemerise & Arsenio, 2000), which is a common theoretical model used to explain CM. Milner (1993, 2003) developed the social information processing model of child physical abuse to help explain the cognitive and behavioral processes behind child physical maltreatment. Social information processing also has been used to explain aggressive social behavior in other contexts, such as children's peer interactions (Crick & Dodge, 1994), intimate partner violence (Dodge, 2011), and antisocial behavior in youth (Fontaine, 2010). Although these models vary, they are similar in that they all take social interactions that are happening in real time and break them down into sequential cognitive and behavioral steps (Dodge, 2011; Milner, 2003). This allows researchers to understand and explore multiple cognitive, behavioral, and emotional aspects of complex social interactions (Milner, 2003).

This study uses Lemerise and Arsenio's (2000) social information processing model to frame an exploratory evaluation of *COS-P* with mothers at risk for CM. Although Lemerise and Arsenio's model described children's peer interactions, several researchers (Leerkes, 2010; McElwain, Booth-LaForce, Lansford, Wu, & Justin Dyer, 2008; Milner, 2003) have used this model to explain parent-child social information processing. Briefly, this model consists of six steps around a concentric circle of a social interaction. The outer circle begins with the parent encoding a child's social/behavioral cue (Step 1), and then moves on to the interpretation of the cue (Step 2). This second step includes attributions and interpretive processes, such as when a parent attributes causal intent to the child's cue. The next steps include clarification of goals (Step 3), response construction (Step 4), response decision (Step 5), and finally, the parenting behavior in response to the original social cue (Step 6). All six steps around the circle are

influenced by bidirectional emotional processes and an inner circle database that holds memory, history, rules, preexisting schemas, and social knowledge.

Research has repeatedly supported social information processing constructs as a framework for understanding the emotional, cognitive, and behavioral factors in aggressive social interactions (Arsenio, 2010; Dodge, 2011). Researchers have found distinct patterns of social information processing that are associated with more aggressive behaviors (Fontaine, 2010). In general, parents with databases that contain a history of maltreatment or harsh discipline have significantly more hostile attributions and risk for CM that do those without a personal history of maltreatment or harsh discipline (Berlin et al., 2013; Dixon, Hamilton-Giachritsis, & Browne, 2005), and parents who are at risk for CM have more reactive emotional processes than do those parents who are not at risk for CM (Lorber & O'Leary, 2005; Martorell & Bugental, 2006; Rodriguez & Richardson, 2007).

Researchers have at times studied the parenting risk factors associated with CM through social information processing models while parent-child relationship studies were often viewed through the lens of attachment theory. Recently, researchers have noted the overlap between constructs in these two theories. Dykas, Ehrlich, and Cassidy (2011) suggested that "a parent's attachment influences the social information processing in their child and a parent's social information processing influences their child's attachment" (Dykas et al., 2011, p. 82). They proposed several possible models of the integration between these two theories, but much more research is needed to detangle the processes.

In the present study, the social information processing model provides a framework for the integration of attachment theory and programs and social information processing. The dependent variables chosen for this study are grounded in Lemerise and Arsenio's (2000) model: namely attributions, emotional regulation, and parental discipline practices. These three parenting factors represent the parenting factors linked to maladaptive social information processing, are risk factors for CM as reviewed earlier, and are all explicitly targeted goals for caregiver improvement in the COS-P (Cooper et al., 2009) program.

PURPOSE OF THE STUDY

The purpose of the current study is (a) to explore the impact of the COS-P (Cooper et al., 2009), with mothers in residential substance-abuse treatment and (b) to examine what demographic variables, including other risk factors for CM, may influence the impact of the program with these mothers. This article analyzes the quantitative data from the study. Qualitative data also was collected, and the qualitative findings will be published in a separate article. Four research questions were explored:

- **RQ1.**How did the COS-P program impact the participants' emotion regulation?
- **RQ2.**How did the COS-P program impact participants' thoughts about the causes of their children's behaviors (i.e., attributions)?
- **RQ3.**How did the COS-P program impact the participants' discipline practices?
- **RQ4.**How do the mothers' background characteristics, as derived from the mothers' admission assessments, potentially influence the change in the pre-/posttest scores?

METHOD

This study used action research methodology, which is defined as the systematic study of a problem embedded in the context of its setting (O'Brien, 2001; Riel, 2010). Action research is commonly used by teachers, administrators, and educational researchers to improve and evaluate programs in school settings (O'Brien, 2001). It also is useful for practitioners who want to research problems that they see in community and school settings (Guiffrida, Douthit, Lynch, & Mackie, 2011; Rowell, 2006).

Two of the main components of action research are (a) the notion that the practitioner also is the researcher and (b) that the subjects of the research are active participants in the research process (O'Brien, 2001). In this study, the lead researcher/facilitator was a part-time group therapist who led the parent-education courses at the substance-abuse treatment program. She worked with the staff at the agency on determining the best methodology for the study. The participants, staff, and the researcher/facilitator also gave feedback on the COS-P program at the conclusion of the study.

Intervention

Prior to beginning the study, the lead researcher/facilitator successfully completed the 4-day COS-P training (for more information about the training requirements, see <http://circleofsecurity.net/seminars/parenting-training/>). The COS-P group program took place at the agency once a week, for 9 weeks, and for 1½ hr per session. The extra session was scheduled to allow for a naturally occurring holiday break. Sessions were digitally audio-recorded. To ensure fidelity to the COS-P model, the audio recordings of the sessions were externally reviewed by a researcher who randomly selected two sections of the audio files, listened to 5 min of the file, and documented that the session content matched the content in the COS-P facilitator's manual.

Participants

The participants in this study were adult mothers who were residents in a yearlong substance-abuse treatment program in the Southeastern United States. All were adult females who were pregnant or postpartum and had children in their care who were under the age of 12 years. Initially, 17 participants signed consent and took the pretest assessments. Two of these participants left the residential program shortly after completion of the pretests, so 15 participants were eligible and completed the study (88% retention).

All participants signed consent for the researcher to review their demographic self-report data from the agency's intake assessment form. Participants' ages ranged from 22 to 44 years. The 15 COS-P participants included 11 (73%) Caucasians, 3 (20%) African Americans, and 1 (7%) Asian. Ten participants (67%) reported a history of perpetrating CM with their own children, including 6 participants (40%) with open, active Child Protective Services cases. Education levels ranged from a ninth-grade education to a graduate degree in law. Six (40%) participants had a self-reported personal history of CM victimization when they were children. The average

amount of time in the residential treatment program for these 15 participants was 6 (range = 1–10) months. A summary of the participant demographic information is provided in Table 1.

Table 1. Demographic Description of Sample (N = 15)

Variable	n	%
Age (years)		
22–33	8	.53
34–44	7	.47
Race		
African American	3	.20
Caucasian	11	.73
Asian	1	.07
Education Level		
<High School	3	.20
High School + Some College	7	.47
Associates/Tech School Degree	4	.27
College Degree	0	.00
Advanced Degree	1	.06
History of Child Maltreatment With Own Children		
Yes	10	.67
No	5	.33
Personal Self-Report History of Child Maltreatment		
Yes	6	.40
No	9	.60
Months in Residential Treatment		
1–3	4	.45
4–6	4	.33
7–10	7	.22

Nine participants attended the majority (6 of 9 sessions; 66%; *treatment* group) of the group sessions. The remaining 6 participants were divided into two groups: those who attended 0 to 1 sessions ($n = 2$), called the *no attendance* group, and those who attended 3 to 5 sessions ($n = 4$), called the *partial attendance* group.

Procedures

After obtaining approval for the study by the institutional review boards, the researcher/facilitator worked with the agency to schedule the COS-P group during a regularly scheduled, parent-education treatment program. Since the researcher/facilitator also was the child therapist at the agency, another researcher gained consent from the participants to minimize any potential for coercion. Once the consent forms were signed, the pretest measures were given individually by the researcher/facilitator. Participant confidentiality was protected by creating unique identifiers that were matched with the participants' posttest measures at the end of the COS-P program. To avoid any potential bias from the researcher/facilitator reviewing the pretest data while also facilitating the COS-P program, the pretest self-report measures were not viewed until the COS-P program had been completed and all posttest data had been collected. Participants received a \$10 gift card to a local retailer once all data had been collected.

Analyses

To address the first three research questions, three analyses of the pre- and posttest data were conducted. First, the sign test, which is a test of the binomial distribution, was used to determine if the group of participants with positive change reached significant levels. Second, reliable change was determined using the Reliable Change Index (RCI; Jacobson & Truax, [1991](#)). The RCI estimates when an individual participant's changed score is considered reliable and not the product of measurement error by taking into account previous test-retest reliability scores and the means and standard deviations in the sample (Devilley, [2005](#); Jacobson & Truax, [1991](#); Ogles, Lunnen, & Bonesteel, [2001](#)). Mathematically, the RCI computes the difference between a participant's pretest and posttest scores divided by the standard error of the difference of the measure (Jacobson & Truax, [1991](#); Ogles et al., [2001](#)). RCI scores above ± 1.96 are considered clinically significant at the $p < .05$ level (Jacobson & Truax, [1991](#)). To examine potential dose effects, the third analyses entailed comparing participant rates of RCI scores across the three treatment groups: the treatment, partial attendance, and no attendance groups.

The final research question reviewed the demographic variables between participants that may have contributed to participant reliable change. The 9 participants in the treatment group were assigned to one of two groups: those that had reliable change on the quantitative measure ($n = 5$) and those that did not ($n = 4$). We then calculated the percentage difference between the two groups based on the collected background demographic data.

Measures

Three measures were given to 15 participants at pretest and at posttest: the Emotion Regulation Questionnaire (ERQ; Gross & John, [2003](#)), the Parent Attribution Test (PAT; Bugental, [2011](#)), and the Parenting Scale (PS; Arnold, O'Leary, Wolff, & Acker, [1993](#)). The Marlowe–Crowne (1)10 (MC; Strahan & Gerbasi, [1972](#)) was given at pretest only.

The ERQ

Gross and John ([2003](#)) developed the ERQ to measure individual differences in two commonly utilized emotion-regulation strategies: reappraisal and suppression. Reappraisal is defined by those authors as an adaptive emotion-regulation strategy that uses cognitions to change a

potentially emotion-eliciting situation to one that has less emotional impact. Suppression is a maladaptive emotion-regulation strategy that involves the individual inhibiting ongoing emotional expression. In this study, each factor scale served as a unit of analysis for emotion regulation. The authors conducted both exploratory and confirmatory factor analyses on the measure with four samples of undergraduate college students ($N = 1483$). The two ERQ factors accounted for more than 50% of the variance in each sample (Gross & John, [2003](#)). These authors found evidence of adequate internal consistency across the four samples (α averages .79 for reappraisal and .73 for suppression), test-retest reliability across 3 months, $r = .69$, and convergent and discriminant validity (Gross & John, [2003](#)). Follow-up confirmatory factor analyses of the ERQ has found good overall fit in a diverse undergraduate sample ($N = 1188$), $\chi^2(34) = 227.58$, $p < .05$, CFI = .96, TLI = .95, RMSEA = .050; Melka, Lancaster, Bryant, & Rodriguez, 2011). In other samples, P. Clark ([2012](#)) used the ERQ in a study with adults in treatment for substance abuse and found the suppression factor to be associated with relapse and the reappraisal factor associated with wellness. Moore, Zoellner, and Mollenholt ([2008](#)) used the ERQ with a trauma-exposed community sample and found that the suppression factor was associated with PTSD, anxiety, and depressive symptoms. To date, we could find no published studies using the ERQ in the context of an intervention, so its efficacy in measuring changes in emotion regulation were tested in this study. Pre- and posttest Cronbach's α coefficients for the ERQ were .65 to .70, respectively.

The PAT

The PAT was developed by Bugental ([2011](#); Bugental, Blue, & Cruzcosa, 1989) to assess the perceived causes of successful and unsuccessful adult-child interactions. Bugental, New, Johnston, and Silvester ([1998](#)) conceptualized the attribution construct on two dimensions: controllability (controllable vs. uncontrollable events) and person (adult vs. child). These two dimensions yield four factors: ones that are controllable by adults (ACF+), ones that are controllable by children (CCF+), those uncontrollable by adults (ACF-), and those uncontrollable by children (CCF-). Confirmatory factor analysis (LISREL) found a goodness-of-fit coefficient of .91 for these four factors (Bugental, [2011](#)). The English PAT was normed on a sample of 159 mothers and 82 fathers. The PAT had 2-month test-retest reliability scores of $r = .61$ when administered to 55 undergraduate women and $r = .63$ when administered to a group of mothers, which indicates adequate stability (Bugental, [2011](#)). The current short version of the PAT contains 12 caregiving failure items on a Likert scale ranging from 1 (Not at all important) to 7 (Very important), yielding a continuous Perceived Control Factor (PCF). The PCF served as the unit of analysis for parental attributions in this study.

The PAT has shown some internal consistency when the four factors were assessed independently. For example, Lovejoy, Verda, and Hays ([1997](#)) found α s that ranged from .40 to .85 for the four factors. Bugental et al. ([2002](#)) found α coefficients for the four factors in the range of .43 to .71 in a pre- and postintervention study. There also is evidence of the PAT's predictive, convergent, and discriminant validity (Bugental et al., [1998](#); Bugental & Happaney, [2004](#); Lovejoy et al., [1997](#)).

Several factors made the PAT useful for this study. First, because COS-P is grounded in attachment theory, it was important to use a measure that also has been studied from an

attachment perspective. The PAT has been shown to correlate with attachment theory constructs (Bugental, [2011](#)). For example, Grusec, Adam, and Mammone (1993) found that individuals scoring low in PCF were more likely to have an avoidant attachment style, as measured by the Adult Attachment Interview (AAI; C. George, N. Kaplan, & M. Main, 1985). Second, the PAT has been used in other intervention studies with high-risk families (Bugental et al., [2002](#); Bugental & Schwartz, [2009](#)); therefore, it appears that the scale may be sensitive to changes in parental attributions. Last, the PAT has a third-grade reading level, which makes it useful for populations having low literacy. Cronbach's α s found for the four PAT factors were: ACF– (pretest $\alpha = .90$, posttest $\alpha = .92$), CCF+ (pretest $\alpha = .82$, posttest $\alpha = .83$), CCF– (pretest $\alpha = .33$, posttest $\alpha = .70$), and ACF+ (pretest $\alpha = .48$, posttest $\alpha = .62$). These scores are similar to the published findings discussed earlier. Given that each of the factors contains only three items and there were only 15 participants, these reliability results are speculative and should be interpreted with caution.

The PS

Developed by Arnold et al. ([1993](#)), the PS is a commonly used measure of parental discipline practices. The PS contains 30 items rated on a Likert scale of 1 (I let my child...) to 7 (I decide when my child...) that assess the behaviors parents use to discipline their children. Arnold et al. trialed their new measure on 168 mothers of children 18 to 48 months old, with and without behavioral issues. They found adequate internal consistency for two factors and the Total Score: Overreactivity ($\alpha = .83$), Laxness ($\alpha = .82$), and a Total Score ($\alpha = .84$). Arnold et al. also found partial support for another factor, Verbosity, but it never replicated across samples and was thus dropped. A 2-week test-retest with a subset of 22 mothers from both samples indicated temporal stability for the two factors and the Total Score, $r = .83$ Laxness, $.82$ Overreactivity, and $.84$ Total Score. Arnold et al. also found evidence that the PS could discriminate between groups of clinical versus nonclinical samples and was related to parent reports and outside observations of child behaviors and discipline practices.

Since the initial study by Arnold et al. ([1993](#)), the PS has been validated numerous times with a variety of samples (Freeman & DeCoursey, [2007](#); Karazsia, van Dulmen, & Wildman, [2008](#); Rhoades & O'Leary, [2007](#)) The PS has been used by several internationally known, evidence-based, parent-education programs (Gardner, Burton, & Klimes, [2006](#); Sanders, Markie-Dadds, Tully, & Bor, [2000](#)). For this study, PS internal consistency scores were pretest $\alpha = .81$ and posttest $\alpha = .77$.

The MC

The MC (Strahan & Gerbasi, [1972](#)) is a frequently used measure of individual differences in social desirability. The MC consists of 10 true-false items, where higher scores indicate more socially desirable responses. Using principal components analysis, Strahan and Gerbasi ([1972](#)) developed the MC from the original 33-item Marlow–Crowne (Crowne & Marlowe, [1960](#)) and found adequate reliability, Kuder–Richardson Formula 20 = $.59$ – $.70$, and correlations, r s between $.80$ – $.90$, with the original longer version. More recently, Fischer and Fick ([1993](#)) conducted a confirmatory factor analysis on several short versions of the measure and found the MC to have high internal consistency, $\alpha = .876$, correlations with the standard form, $r = .958$,

and improved fit over the original scale and several other short versions of the scale, Adjusted Goodness of Fit Index (AGFI; Joreskog & Sorbom, 1986) = .968, root mean square (RMS; Joreskog & Sorbom, 1986) = .035, $\chi^2 = 32$. The MC internal consistency for this study was $\alpha = .63$.

RESULTS

Descriptive Statistics

The descriptive statistics for the treatment group's scores on the study measures are listed in Table 2. These include the study participants' range of scores, means, and standard deviations on the pretest and posttest measures, the number of participants with reliable change from pretest to posttest for each measure (i.e., significant RCIs), and the p levels for the sign test. Results are discussed according to each research question.

Table 2. Treatment Group Instrument Ranges, Means, Standard Deviations, RCI, and Sign Test

Instrument	Observed Range	Pretest <i>M</i> (SD)	Posttest <i>M</i> (SD)	No. of Participants With Reliable Change (RCI) Pretest to Posttest	Sign Test <i>p</i>
ERQ					
Suppression	1–4.75	2.94 (1.06)	2.78 (.79)	0	1
Reappraisal	3.5–7.0	5.28 (1.05)	5.78 (.79)	1	.508
PAT PCF	–.33–1.33	.59 (.61)	.63 (.61)	1	1
PS Total Score	1.6–3.5	2.68 (.49)	2.31 (.36)	3	.039 [†]
Laxness	1.45–4.27	2.57 (.78)	1.98 (.47)	2	.039 [†]
Overreactive	1.2–3.0	2.18 (.59)	1.93 (.41)	3	1
MC	2.0–8.0	3.44 (1.77)	n.a.	n.a.	n.a.

RCI = Reliable Change Index; ERQ = Emotion Regulation Questionnaire; PAT = Parent Attribution Test; PCF = Perceived Control Factor; PS = Parenting Scale; MC = Marlowe–Crowne (1)10 Social Desirability Scale; n.a. = not available.

[†] $p \leq .05$.

RQ1: Emotion Regulation

ERQ scores for the 9 treatment participants indicate a small mean trend toward increasing reappraisal strategies and decreasing suppression from pretest to posttest. For the ERQ, higher reappraisal scores and lower suppression scores are indicative of better emotion-regulation strategies. Treatment group ERQ mean scores were compared to the ERQ means scores in the two other groups. Both the no attendance and partial attendance groups had improved mean changes on the reappraisal factor. On the suppression factor, the no attendance group had a small decrease in suppression, and the partial attendance group had an increase in suppression.

On the reappraisal factor, 5 treatment participants showed improvement, 1 participant stayed the same, and 3 participants had worse scores from pre- to posttest, sign test $p = .508$. On the suppression factor, 4 participants showed improvement, 1 stayed the same, and 4 participants had worse scores, sign test $p = 1$. One treatment participant showed significant reliable change on the reappraisal factor, RCI = 4.23, $p < .05$. Two of the partial attendance group members also had

reliable change, $RCI = 2.38, 2.65$, respectively, $p < .05$, but none of the no attendance group members had reliable change on the reappraisal factor. None of the groups had significant reliable change on the suppression factor.

Attributions

RQ2 asked how COS-P impacted participants' thoughts about the causes of their children's behaviors (i.e., attributions). The PAT PCF (Bugental, **2011**) score was used to assess changes in the participants' attributions. The higher the PCF score, the less hostile the attribution and the less likely that there will be future CM. Table 2 shows the mean treatment group PCF change over time. There was a small mean increase in treatment group PCF scores, as the PCF increased from a mean of .59 to a mean of .63. From pretest to posttest, there were 4 treatment participants with improved scores, 2 with the same scores, and 3 with worse scores (sign test $p = 1$). One of the 9 participants showed significant reliable change on the PAT PCF, $RCI = 2.22, p < .05$. For comparison, the partial attendance group showed mean improvements from pretest to posttest, and 1 participant had reliable change, $RCI = 2.738, p < .05$. The no attendance group means stayed the same from pretest to posttest and had no participants with reliable change.

Discipline Practices

RQ3 addressed how COS-P impacted the participants' discipline practices. Discipline practices were measured with the PS, which has two factors, Laxness and Overreactive, and a Total Score. The treatment participants' mean scores on the PS's Total Score, Laxness, and Overreactive factors indicated improvement from pretest to posttest. For Laxness, 7 treatment participants showed improvement, 1 stayed the same, and 1 had worse scores from pretest to posttest, which was significant on the sign test, $p = .039$. For the Overreactive factor, 4 treatment participants improved, 2 stayed the same, and 3 had worse scores, sign test $p = 1$. On the PS Total Score, 7 treatment participants improved, and 2 had worse scores, which was significant on the sign test, $p = .039$.

Participants' RCI scores supported this finding. The PS had the most treatment participants with significant RCIs. The PS Total Score, $RCIs = 2.17, 5.20, \text{ and } 2.27$ respectively, $p < .05$, and Overreactive, $RCIs = 1.96, 3.64, \text{ and } 1.96$ respectively, $p < .05$, factor had 3 participants with significant RCIs, and the PS Laxness factor had 2 participants with significant RCIs, $RCIs = 5.05 \text{ and } 2.43$, respectively, $p < .05$. Interestingly, both the no attendance and partial attendance groups had wide differences, as compared to the treatment group. On the Laxness factor, both the no attendance and partial attendance groups had worse mean scores from pretest to posttest, with 1 participant in the partial attendance group having reliably worse scores on the PS Laxness factor, $RCI = -2.57, p < .05$. On the PS Overreactive factor, the no attendance mean scores worsened, with 1 participant with negative reliable change, $RCI = -2.78, p < .05$, and the partial attendance group mean scores stayed the same. On the PS Total Score, the no attendance mean scores worsened, and the partial attendance group mean scores were slightly better.

RQ4: Background Characteristics Influencing Reliable Change

To examine if there were any demographic differences between participants who had reliable change and those who did not, the treatment group participants were placed into two groups: those who had significant RCI scores (RCI; $n = 5$) and those who did not have significant RCI scores (non-RCI; $n = 4$). Scores were compared on the variables of (a) education level, (b) history of CM with their own children, (c) personal history of CM, (d) number of sessions attended, (e) participant age, (f) number of children, (g) time in treatment, and (f) social desirability. Table 3 summarizes these differences.

Table 3. Treatment Group Background Characteristics Between Reliable (RCI) and Nonreliable (Non-RCI) Change Participants

Variable	RCI Group ($n = 5$)	Non-RCI Group ($n = 4$)	%Difference Between Two Groups
Education Level (No. with post-high-school education)	4/5 (80%)	2/4 (50%)	.30
History of Child Maltreatment With Their Own Children (number - yes)	2/5 yes (40%)	2/4 yes (50%)	.10
Personal History of Child Maltreatment (number - yes)	1/5 (20%)	2/4 yes (50%)	.30
No. of Sessions Attended	$M = 7$ sessions	$M = 7$ sessions	.00
Participant Age	$M = 33$	$M = 31$.06
No. of Children	$M = 2$	$M = 2$.00
Time in Treatment	$M = 2.60$ months	$M = 6.0$ months	.43
Marlowe–Crowne Scores	$M = 2.4$	$M = 4.75$.51

RCI = Reliable Change Index.

The four variables with the largest mean percentage difference ($M \geq 30\%$) between the two groups were: (a) education level, (c) personal history of CM, (g) time in treatment, and (f) social desirability. Regarding education level, participants' education levels were grouped into two dichotomous groups: (a) post-high-school education levels and (b) high school or less education levels. Four of 5 participants in the RCI group (80%) had a post-high-school education level that included some college education; however, only 2 participants (50%) in the non-RCI group had a post-high-school education. The remaining 2 participants had a 10th-grade or lower education level. The participants with significant RCI scores had higher average levels of education than did those in the non-RCI group.

Participants also differed in their self-reported personal history of CM. One participant in the RCI group had a reported personal history of CM whereas 2 (50%) of the participants in the non-RCI group did report a history of CM victimization on their intake assessments. Therefore, having a personal history of CM was associated with less reliable change on the three parenting factors associated with CM measured in this study. Participants also differed in the number of months in treatment. Participants in the RCI group had been in treatment an average of 2.6 months. Comparatively, participants in the non-RCI group had been in treatment an average of 6 months. Generally, participants who showed reliable change had been in the residential program fewer months than those participants who did not have reliable change. Finally, participants in the RCI group had lower social desirability scores at pretest than did the non-RCI participants. The non-RCI group had mean scores nearly double those of the RCI group, indicating that the non-RCI group participants' responses may be more biased.

In sum, four background variables were qualitatively associated with reliable change on the measures in this study. Having more education, no personal history of CM, less time in the residential program, and lower social desirability scores were associated with the reliable change group. The remaining variables, namely (a) history of CM with their own children, (c) number of sessions attended, (d) age, and (e) number of children had either no or small differences between the RCI and the non-RCI groups.

DISCUSSION

The first three research questions addressed COS-P's ability to impact three parental risk factors associated with CM. For the mothers in the full-dose treatment, participants' scores showed mean improvement from pre- to posttest on emotion regulation, parental attributions, and parental discipline practices. The Total Score and Overreactive factors on the PS had a significant, $p = .039$, number of participants with improvement, and 4 of the 9 (44%) participants showed some reliable positive change on at least one of these parenting factors associated with CM.

The highest number of participant reliable changes, and the only measure that had a significant number of participants who had improved, was seen on the PS, a well-known measure of parental discipline practices (Arnold et al., 1993). There also was a wide disparity between the treatment group and the two comparison groups on the PS, with some participants in the comparison groups getting significantly worse. The fact that the PS's Overreactive ($n = 3$) factor had the most participants with reliable change is noteworthy. Harsh discipline practices are one of the most frequently cited parenting factors associated with CM (U.S. Department of Health & Human Services, 2012) and insecure/disorganized attachment (Baer & Martinez, 2006; Kochanska, Barry, Stellern, & O'Bleness, 2009). Further, maternal substance abuse is associated with harsh discipline (Child Welfare Information Gateway, 2009; Tarter et al., 1993). Thus, 3 participants in this study improved most reliably on a parenting factor frequently associated with CM, attachment insecurity, and parental substance abuse.

Participants also had reliable change on the Laxness factor of the PS. Nearly all ($n = 7$) participants improved on this factor. Lax parenting is characterized by "not following through and giving in to child misbehavior" (Lorber & Slep, 2005, p. 561). Although not as well validated as the harsh-parenting literature, lax parenting is associated with child behavior problems and maternal substance abuse (Lorber & Slep, 2005; Mayes & Truman, 2002). In many cases of CM, both lax and harsh discipline practices are present, as parents vacillate between both ineffective parenting practices (Rodriguez, 2010). Thus, some of the participants in this study improved on both problematic parenting practices.

These changes in parental discipline practices also are of particular interest because, unlike other parenting programs, COS-P does not teach or directly address discipline techniques; instead, COS-P addresses the parent-child relationship and encourages parents to "always be bigger, stronger, wiser, and kind" (Hoffman et al., 2006, p. 1019) in their relationships with their children. This finding has been supported by other researchers, who have found that parenting programs that contained instructions on parental emotional communication skills and positive

parent–child interactions had larger effect sizes, as compared to programs that focused on discipline practices, problem solving, cognitive/academic skills, or social skills (e.g., Kaminski, Valle, Filene, & Boyle, 2008).

Treatment group participants also showed small mean improvements in their attributions and emotion regulation, and some had reliable change, although none of these factors had a significant number of participants with improved scores. Social information processing theory and intervention data suggest that an individual's emotions and cognitions are precursors to their aggressive behavior (Dodge, 2011); therefore, it is plausible that even the small changes in participants' emotional regulation and attributions can yield positive changes in parental discipline practices. This is consistent with recent findings on social information processing interventions, which suggest that adding social information processing components (e.g., anger management and attribution retraining) to group-based parenting programs consistently strengthens the effect sizes of the parental discipline practice outcomes (Wiggins, Sofronoff, & Sanders, 2009).

For parents who fully engage in COS-P (i.e., treatment group), the findings of the current study lend preliminary support to COS-P's effectiveness at impacting three parenting factors associated with CM, particularly parental discipline practices. This is notable because it was unclear if COS-P in its condensed version could impact change as effectively as could the more intensive COS intervention that had 20 weeks of group and individualized treatment and dyadic interactions that were videotaped and painstakingly reviewed by the facilitators. It also supports other recent researchers' findings showing that shortened versions of a home-visiting model of COS also were effective with high-risk infant–mother dyads (Cassidy, Woodhouse, Sherman, Stupica, & Lejuez, 2011).

These results lend exploratory support to COS-P's effectiveness at reaching the program's explicit goals of improving caregiver emotion regulation, attributions, and parental discipline practices, at least with some mothers in residential treatment for substance abuse at the end of the eight-session program. Although overall participant scores indicated mean improvements on all the parenting measures, a few full-dose treatment participants did not show any improvements from pre- to posttest. Thus, further exploration is needed to determine what factors prevented improvements for these full-dose participants.

Background Variables That May Influence the Impact of the COS-P Program

RQ4 pertained to how participants' backgrounds impacted their experiences of the COS-P program. The treatment group was separated into two subgroups: (a) participants who had reliable change (i.e., those who had change that was greater than chance) on the quantitative measures and (b) those who did not. The participants in the reliable change group had qualitatively noticeable differences on four background variables (educational level, self-reported personal history of CM, time in treatment, and social desirability). In other words, having more education, no personal history of CM, less time in the residential program, and lower social desirability scores were associated with larger changes on the quantitative measures. In contrast, having less education, a personal history of CM, and more time in the residential program were associated with smaller changes on the quantitative measures.

The first two background-category findings are in line with current research on CM. Regarding participant education levels, researchers have consistently found that higher parental education levels are a protective factor against CM (Child Welfare Information Gateway, 2012). Participants with higher education levels may have been able to pick up the COS-P content more quickly than may have the participants with lower education levels. Participants with lower education levels may benefit by having more time with the COS-P curriculum. The developers of COS-P contend that this is a universal parent curriculum that is specifically designed for wide dissemination across broad populations, and they give facilitators the leeway in determining how fast or how slow to go with the material (Cooper et al., 2009). However, the current study examined the curriculum based on an eight-session format, so even though the researcher/facilitator could have slowed down the curriculum and extended the program, she was interested in seeing how the curriculum in its original form impacted participants in their applied setting.

The results also indicate that mothers with personal histories of CM had less reliable change than did those who did not self-report a personal history of CM. Researchers have determined that having a parental history of CM is often, but not always, associated with later CM with one's own offspring (Appleyard et al., 2011; Egeland et al., 1988). Researchers also have discovered that having a personal history of CM can impact stress reactivity, mental health, and adult attachment, which can lead to more inaccuracies in identifying their child's emotions (Child Welfare Information Gateway, 2008a; Leerkes & Siepak, 2006). For example, Dodge (2011) measured social information processing patterns in children exposed to CM in the first 5 years of life. He found that these children had biased social information processing patterns that predicted aggression years later in early adulthood. Thus, it is possible that participants with a history of CM may have more ingrained social information processes that require programs with more than eight sessions (e.g., those that provide more time and practice with the material) and/or require individualized follow-up as seen in the original, longer COS intervention. The developers of COS-P note that the curriculum is not a therapeutic intervention, as is the original COS; instead, it is framed as a parent-education program that can be used as a starting point for more in-depth therapeutic interventions (Cooper et al., 2009). Therefore, the authors might contend that caregivers with more pronounced needs would need more therapeutic follow-up to address specific parent-child attachment needs.

The finding that having less time in the residential treatment program was associated with more reliable change may be due to the programmatic structure at the agency. The state agency where the COS-P took place has three levels of treatment. First, there are 5 days per week of treatment for the first 80 days in the program. After successful completion of the 80 days, residents are then transitioned to 3 days of treatment and 2 days of work or school placement, which typically lasts for another 24 days. Finally, residents are able to pursue work or school full-time. For many residents, the first phase of residential treatment is intense and often is the first time that they have parented their child while not under the influence of their addictive substance. It is the impression of the researcher/facilitator that many program participants are often intensely interested in knowing how to be an effective parent at the beginning of their treatment, which may be due to a desire to make up for time that they were not available to their children. Thus, they may have been more committed to attending the COS-P program. Residents who have made

it to the later phases of treatment may be less vested in learning new parenting skills as their focus becomes the transition to work.

Finally, the finding that the non-RCI group had higher mean social desirability scores, as compared to the RCI group, may call into question the validity of the comparisons. If the non-RCI group's self-report scores on the pretests and posttests were more biased, then the RCI calculations also would be biased. Although neither groups had particularly high MC scores, the increase in social desirability scores in the non-RCI group may have influenced the findings.

Given that this research question reviewed only eight background variables in a very limited sample, all results should be interpreted with caution. It is possible that other demographic factors that were not explored in this study accounted for the lack of change in the non-RCI group, such as the mother's years in active addiction, comorbid psychopathology diagnoses, and/or levels of social support.

At times, attachment researchers have debated whether a long (52 weeks) or a moderate length (≤ 16 weeks) in duration attachment interventions are more successful at impacting attachment security and maternal sensitivity (Bakermans-Kranenburg et al., 2003; Berlin, 2005), yet Greenberg (2005) argued "that the issues of more or less cannot be understood in the abstract, but only as contextualized within populations" (p. 332). Researchers must examine parenting programs within and between populations to determine which factors affect treatment outcomes. Although this is a small, exploratory review of background variables in one high-risk population, it may guide future attachment-program researchers as they determine which subgroups may need more intensive treatments. At this point, the results of this study suggest that some subsets of high-risk populations (i.e., those with lower education levels and personal histories with CM) may need more than eight sessions and/or individual follow-up sessions with the COS-P material to garner more reliable clinical change.

Limitations

Given that this was an exploratory study with a small sample size, several limitations must be noted. First, there were potential threats to internal validity because the mothers were in a treatment program that provides a myriad of services, and there was no control group in the study to control for these confounds. It is possible that just being in a supportive residential program accounted for the changes across time. Thus, causation cannot be inferred from the results. Given that the study utilized a small, convenience sample rather than a randomized sample, the study's results cannot be generalized to a broader population.

Second, in action research methodology, the researcher acknowledges that bias exists and takes steps to prevent it while also understanding that there always will be some bias inherent in every study (Riel, 2010). There were several places where bias may have been introduced during the COS-P program study. As the researcher also was the group facilitator, subtle bias could have influenced the researcher's/facilitator's responses to the participants during the COS-P sessions and biased the participants' responses during data collection.

A third limitation of this study was that it relied on quantitative self-report measures and secondary demographic data to examine the program outcomes in the participants rather than using any observational assessment methods. Thus, we do not know if the COS-P program actually changed any parenting behaviors in day-to-day parent–child interactions.

Finally, it is unknown how potential participants who elected not to participate in the study differed systematically from those who did participate. Two participants who started the study abruptly left the residential program near the beginning of the COS-P program and moved across the state; therefore, we do not know how these participants differed from the other participants who stayed in the residential treatment program. We also do not know how other similar populations would respond to the COS-P program, such as mothers who are in outpatient (vs. residential) substance-abuse treatment and fathers who are in substance-abuse treatment.

Clinical Implications

This study's findings have several implications for infant mental health providers, parent educators, substance-abuse group facilitators, and other practitioners who work with similar populations. First, practitioners who work with parents have further preliminary evidence that the COS intervention broadly, and the COS-P program specifically, are viable options for high-risk parents. Given that COS-P is cost-effective, has a shorter facilitator-training requirement, and has an easy-to-use, manualized DVD format, as compared to the original 20-week COS intervention, COS-P is an important program to add to the list of attachment-based parenting programs. COS-P also is the only group-based attachment program available in a manualized, multilingual format, which dramatically increases its ability to be disseminated to a broader audience. COS-P's flexible scheduling offers providers the opportunity to tailor the program to various community subpopulations.

Given that substance abuse is among the most common parenting factors associated with CM (Goldman et al., 2003), substance-abuse counselors and programs need access to manualized parent-education programs for mothers and fathers who need support in their parenting. COS-P could be an important option for these community settings. Given the high rates of insecure attachment in children from these families, researchers have argued that parents in substance-abusing families need attachment-based programs (Suchman et al., 2006). Although this study did not measure child attachment changes over time, the COS-P model may have implications for child attachment security and therefore, long-term developmental outcomes for children in high-risk families.

Future Research

Future research could build on the exploratory findings in this study. First, researchers could address the threats to internal validity in the current study. For example, increasing the sample size and adding randomized selection and assignment to a control and a treatment group could increase the confidence in the findings. Given that residential substance-abuse treatment programs vary widely and are often limited in size, this may require a large-scale study across several residential treatment programs.

Second, future researchers could add other pretest and posttest measures to determine if the reliable change seen in the participants holds across other relevant types of measures. For example, observational measures of the participants' parent-child interactions both before and after the COS-P program could be added. Further, adding attachment measures such as the Ainsworth Strange Situation Protocol (Ainsworth, Blehar, Waters, & Wall, 1978) to the current social information processing measures may help elucidate the connections between social information processing and attachment theories (Dykas et al., 2011). Adding measures using biomarkers for stress and emotion regulation also could provide valuable information on the impact of the COS-P program.

To address potential bias in this study, future research studies could examine the COS-P program with a separate group facilitator and researcher. Researchers with a larger, grant-funded study could use separate researchers and COS-P facilitators across a broad number of cultures and populations to determine COS-P's effectiveness.

Finally, it would be worthwhile to add longitudinal follow-up of group participants to determine if these exploratory findings hold over time. Although more validation is needed, researchers have determined that parenting interventions can be effective at promoting sustainable changes in child and parent outcomes and reducing the rates of CM within participant samples (Mikton & Butchart, 2009; Wiggins et al., 2009). However, there have been no longitudinal studies on any of the COS interventions. Researchers need to confirm if COS-P and other COS programs can maintain the intervention gains over time and determine if they can reduce rates of CM.

Conclusions

Without treatment, children who are maltreated are at an increased risk to become adult clients with a myriad of mental health and substance-abuse issues, who then are at an increased risk to perpetuate CM on their own children. To address this paramount, intergenerational, public health issue, researchers and practitioners must remain vigilant and continue to test parenting programs that address the parenting factors associated with CM. Although the attachment field has made substantial progress over the past 20 years in developing and evaluating evidence-based attachment programs (Greenberg, 2005), the availability of effective, group-based attachment programs has lagged. Given the well-documented importance of attachment security for healthy, long-term developmental outcomes for children, having attachment-based parenting programs that are manualized with easy-to-use formats is critical for broad dissemination (Greenberg, 2005). It also is critical that researchers examine attachment-based programs under "real world conditions" (Greenberg, 2005, p. 337) so that we can understand how these programs work for high-risk parent and child populations in community settings. The exploratory findings from this study suggest that COS-P has the potential to positively impact the parenting factors associated with CM in mothers at risk for CM, particularly parental harsh-discipline practices. Like the original COS intervention, COS-P is a promising parenting program for CM prevention.

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