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Review of Interventions for Parental Depression from Toddlerhood to Adolescence

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Abstract

Because of the recurrent course, significant burden, and intergenerational impact of depression, there is a great need for interventions for depressed parents and their children. This article reviews eight interventions that 1) aim to impact the functioning and well-being of 18-month to 18-year old children of depressed parents and 2) have been evaluated in controlled studies. The interventions are described and the empirical evidence of their efficacy is reviewed and critiqued. Existing research points to several promising intervention strategies, such as psychoeducation about parental depression, addressing parenting in adult depression treatment, promoting positive parent-child interactions, and teaching coping skills to children. Common limitations of the research in this area are small sample sizes, homogenous samples, and lack of replication. Implementation problems within the mental healthcare system are highlighted. Multi-component interventions seem to be a promising approach to address the complex impact parental depression has on children and the parent-child relationship. This review illustrates the need for more research on intervention models that can be implemented with children at various developmental levels.

Keywords

Parental depression; interventions; prevention; children

INTRODUCTION

Parental depression can have a significant impact on parents' functioning, the parent-child relationship, and children's adjustment throughout their lifespan. As a result, it is critical to develop and implement interventions that alleviate current psychopathology in parents and that can reduce and prevent psychiatric disturbance in their children. Much of the research in this area has focused on interventions with mothers with postpartum depression and their infants. A recent review of that work concluded that mother-infant psychotherapies and home-based interventions that target the mother-infant bond are efficacious in ameliorating the negative effects of maternal depression on infants [1]. This paper extends that review to research on interventions aimed at improving well-being in children from toddlerhood to adolescence whose parents are depressed.

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Extensive research documents the pernicious impact of parental depression on children's psychosocial functioning. Children of depressed parents are at a high risk for exhibiting developmental delays, social difficulties, and externalizing and internalizing problems [2-4]. Specifically, children of depressed mothers have an increased risk of childhood Major Depressive Disorder (MDD), Conduct Disorder (CD), and anxiety disorders, such as Specific Phobia and Panic Disorder [5]. By the age of 20, the children of depressed parents have a 40% chance of experiencing a major depressive episode and this rate increases to 60% by the age of 25 [6]. As adults, offspring of depressed parents show more impaired functioning in the domains of work and family than offspring of non-depressed parents [7]. Although most research has focused on depressed mothers, there is evidence indicating that depression in fathers also has a deleterious impact on children [8-9].

Given the significant impact of parental depression on children, there is a great need for interventions that aim to treat and prevent psychiatric dysfunction in children of depressed parents. To date, few interventions have been developed for preschool and school-age children of depressed parents. This article reviews the existing interventions that have been evaluated in controlled studies. The major goals of this review are 1) to identify interventions that show promise in reducing or preventing negative outcomes in children of depressed parents and 2) to generate recommendations for future research in this area.

LITERATURE SEARCH

We conducted a computerized literature search of Medline and PsycINFO using the following keywords: (maternal depression or parental depression) AND (intervention or prevention) AND (children or adolescents). The literature search included published articles in the English language up until November 2008. The literature search yielded 80 abstracts in Medline and 97 abstracts in PsycINFO. Reference lists from various published articles relevant to this topic were also examined. An intervention study was included in this review if it met the following criteria: 1) an aim was to affect children's functioning; 2) the children ranged from toddlers to adolescents (18 months to 18 years); 3) the parents had a depressive disorder or elevated depressive symptoms; 4) the study included a control or comparison group; and 5) the manuscript presented child outcomes. Most references identified through the Medline and PsycINFO search were excluded because they did not report on an intervention study, focused on infants but not older children, did not report on child outcomes, and/or did not include a control or comparison group. Through this search, 19 articles focusing on 8 interventions were identified that fit the review criteria. Table 1 provides details about the intervention studies including the country where the study was conducted, the intervention type, sample demographics (i.e., sample size, age range of children, race and socioeconomic status), inclusion criteria, and assessment timepoints. Below, we describe these interventions and the empirical evidence supporting their efficacy. The interventions are ordered based on the developmental age of the children starting from toddlers to adolescents.

INTERVENTIONS FOR CHILDREN OF DEPRESSED PARENTS

Interventions for toddlers and young children focus on enhancing the parent-child relationship, promoting children's cognitive stimulation and development, teaching effective discipline and management of children's behavior problems, and/or promoting positive beliefs about parenting.

Toddler-Parent Psychotherapy

Cicchetti, Toth, and Rogosch and their colleagues developed Toddler-Parent Psychotherapy (TPP) for depressed mothers and their toddlers. TPP aims to improve parenting and, thereby, promote secure attachment and healthy development in toddlers. TPP includes joint therapy

sessions for mother-toddler dyads. TPP therapists use several methods to promote positive relationships between mothers and their children. First, by providing empathy, respect, and positive regard, therapists provide a corrective emotional experience that helps mothers to 1) become more accepting of themselves and their children, 2) develop a more positive views of their parenting abilities, and 3) feel supported as they try out new approaches to interacting with their children. Second, by observing and commenting on naturally occurring events (such as child tantrums and mother's emotional responses), therapists help mothers to recognize their interpretations of their children's behavior and the effect of these interpretations on their children. Third, the intervention helps mothers to identify and correct distorted perceptions of their children's behavior. In the published studies of TPP, mother-toddler dyads participated in weekly sessions from the start of the intervention (when target children were approximately 18 to 20 months old) until the target children reached the age of 3.

Mothers (who had experienced a major depressive episode at some point after their child's birth) and their toddlers were recruited through clinician referrals, newspaper advertisements, and notices placed in medical offices and on community bulletin boards. Mothers and their toddlers were randomly assigned to TPP or a no-intervention control group. The TPP and control groups were also compared to a non-depressed comparison group consisting of mothers who had not experienced depression and their toddlers.

Three papers have reported on the efficacy of TPP with overlapping samples. Two papers reported significant benefits of TPP in randomized controlled evaluations of its effects on toddler's attachment [10,11]. TPP significantly reduced the proportion of toddlers with insecure attachments relative to the experimental control group. At baseline, toddlers of depressed mothers were more likely to show insecure attachment than toddlers in the non-depressed comparison group; however, these differences disappeared following TPP. Cicchetti, Rogosch and Toth [12] found that TPP also improved toddler's cognitive functioning relative to the controls. Similar to the attachment findings, toddlers whose mothers had a history of depression scored lower on cognitive testing than toddlers in the non-depressed comparison group at baseline; however these differences also disappeared following TPP. Thus, by fostering positive parent-child relationship, TPP may prevent the negative consequences of maternal depression on young children.

These studies of TPP used strong research designs, including random assignment to the intervention or control group, a non-depressed comparison group, and assessment of a variety of outcomes (questionnaires, observations, and standardized assessments) from multiple perspectives. One important limitation is the homogeneity of the study sample. Mothers who participated in the study had to have at least a high school education and could not be reliant on public assistance. About 90% of the mothers in the experimental conditions were married, more than 90% were of European American race/ethnicity, and most were of high SES. Thus, it will be important to determine whether the positive benefits of TPP extend to more diverse families, especially families that are coping with additional stressors linked to poverty.

Group Cognitive-Behavioral Therapy

Verduyn and colleagues [13] developed a group cognitive-behavioral therapy (GCBT) for mothers and their young (2 1/2 to 4 year old) children with an aim to reduce maternal depression symptoms and child behavioral problems. GCBT consists of 16 weekly sessions with six to eight families. Mothers participate in a group that includes cognitive therapy for depression, psychoeducation about children's development, parent behavior training, goal setting for focused change, and practice of skills outside the group. The cognitive therapy component focuses on cognitions that directly relate to parenting. The parent behavior training includes enhancing the mother-child relationship through child-centered play in addition to teaching

reinforcement of positive behaviors, praise and attention, and dealing with negative behaviors through strategies such as time out. Children participate in the play sessions.

GCBT was evaluated in a trial with two comparison conditions: a) mother support group (i.e., attention placebo) and b) no-intervention [13]. All mothers with children between two and a half to four years of age from a community registry were sent questionnaires and mothers who reported high levels of depressive symptoms and high levels of behavioral problems in their children were asked to participate in the trial. Findings revealed no significant differences between the three conditions on maternal depression severity and parent report of child behavior problems post-intervention and at 6 month and 12 month follow-ups. Analyses of within condition changes demonstrated significant improvements in child behavior for GCBT from baseline to post-intervention, which were maintained at 6- and 12-month follow-ups. Mothers in both the GCBT and support group showed reductions in depression severity from baseline to post-intervention that were maintained at 6- and 12-month follow-ups. These findings suggest that there may be some benefit for the GCBT.

One strength of GCBT is the inclusion of components that focus on parenting and psychoeducation about child development. Other strengths of this research are the inclusion of a large community sample of mothers and use of both attention placebo comparison and no treatment comparison conditions. A limitation of the study is the large refusal or withdrawal of mothers with high levels of depression symptoms from participation in the group; only 37% agreed to participate. In addition, the researchers were unable to randomize participants to the no treatment condition during the first wave of recruitment.

Cognitive-Behavioral Family Intervention

Sanders and McFarland [14] developed a cognitive-behavioral family intervention (CBFI) that is based on efficacious treatments for child externalizing behaviors and adult depression. The focus of CBFI is to simultaneously work on the parent-child relationship and the parent's depressed mood. CBFI aims to reduce potential family conflict, improve children's behavior, and decrease the risk of mothers' attrition from parent training treatment. CBFI consists of 12 sessions (8 in the clinic and 4 in the home) and includes two intervention components: behavioral family intervention (BFI) and cognitive behavioral treatment (CBT) for the parent's depression. The BFI component includes behavioral parent training skills that promote positive parenting behaviors and effective management of child misbehavior. The CBT component focuses on increasing family activities, identifying and interrupting child related dysfunctional cognitions, using relaxation techniques, and using cognitive coping statements to address distress and negative cognitions.

CBFI was compared to the BFI component in a randomized clinical trial with mothers with MDD, their spouses, and children aged 3-9 years (mean age = 4.4 years) with Oppositional Defiant Disorder (ODD) or CD. Both interventions demonstrated a similar impact on reducing mothers' depression and children's behavioral problems. Specifically, in both interventions, mothers' depressive symptoms and automatic thoughts decreased from baseline to post-intervention. Mothers' perceptions of social support and parenting competence increased from baseline to post-intervention. The benefits on mothers' symptoms, social support, and parenting competence were maintained at 6-month post-intervention. Similarly, in both interventions fathers' depressive symptoms decreased and fathers' parenting competence increased from baseline to post-intervention. However, the benefits for fathers were not maintained at 6 months post-intervention. Additionally, mothers' reports indicated that children's behavioral problems decreased in both interventions from baseline to post-intervention and these benefits were maintained at 6 months post-intervention. Observational measures also demonstrated that children's negative behaviors decreased from baseline to 6 months post-intervention.

There are several strengths of the intervention including the multiple components for critical domains such as parental depression and child externalizing disorder. In addition, to address the generalizability of the skills learned, part of the intervention is conducted in the home with both parents. Inclusion of observational measures to examine outcomes is a major strength because it reduces concerns about biases that may result from relying solely on parental report measures. Because both interventions had similar effects, it is not clear whether CBFI is more beneficial than BFI alone.

Interventions for children and young adolescents focus on many of the same goals as interventions for young children such as strengthening the parent-child relationship and promoting effective discipline. In addition, interventions for children and young adolescents promote children's own coping and resilience skills, provide psychoeducation about parental depression and its effects on children, increase communication within the family, and/or treat the depressed parent.

Preventive Intervention Project

Beardslee and colleagues developed a cognitive psychoeducational primary prevention model aimed at families with a parent diagnosed with MDD or Bipolar disorder and their children between the ages of 8 to 14. Parents are recruited from health care plans, psychiatric hospitals and general medical centers. The Preventive Intervention Project (PIP) consists of 6 to 10 sessions. The initial sessions are conducted with parents while the remaining sessions involve individual sessions with the children and family sessions. The parent sessions are designed to 1) increase parents' knowledge about symptoms and causes of childhood and adult depression and 2) provide information about how to foster resiliency in children. The family session focused on helping the family communicate about depression and the effects on the family.

There are several core components to PIP. First, all family members are assessed, thus functioning of all family members is known. Second, PIP provides psychoeducation about mood disorders and the risk and protective factors for children. Third, this psychoeducation is linked with the family members' life experience of depression. Fourth, PIP promotes discussion of the family's understanding of depression with an emphasis on decreasing blame and guilt. Finally, PIP helps families to develop future plans, such as increasing children's engagement in interests and activities at school and within the community.

Beardslee and colleagues have also developed a lecture prevention program. This program also consists of psychoeducation about mood disorders and fostering resiliency in children. It is implemented in two sessions by a group format for the parents.

Several papers have reported on evaluations of the PIP compared to the lecture program; most of which include the same sample. Families were randomized to PIP or the lecture intervention. Following both interventions, parents reported increased discussion and knowledge about depression [15,16]. Post-intervention, families in PIP reported greater communication than families in the lecture intervention [16,17]. Compared with the lecture intervention, PIP improved parents' reports of children's behavior, family communication, and understanding of parental depression for up to 4.5 years post-intervention [18-21]. Similarly, children in PIP reported greater understanding of depression than children in the lecture condition post-intervention, and at 1.5 and 4.5 year follow ups [21,22, 37]. Improvements in children's internalizing symptoms and understanding of parental depression endured through 4.5 years of follow-up in both conditions [20,21]. Findings also revealed a positive association between the change in children's understanding of parental mood disorders and parental report of child-related behavior and attitude changes [20-22]. Of the 122 children without history of MDD upon entering the study, seventeen were diagnosed with MDD up to 4.5 years after implementation of the intervention and the numbers within each condition were similar

suggesting that PIP and the lecture condition were equally effective in preventing the development of depression [21].

The intervention has been adapted for a low income, ethnic minority population [23]. The modifications included: 1) increased time and effort to build a therapeutic alliance; 2) home visitation; 3) flexibility with schedule; 4) additional meetings to address survival needs and problems; 5) advocacy; 6) use of problem-solving to cope with stress and parenting concerns; 7) emphasis on child-related issues and lack of parenting support; and 8) reconceptualization of resilience to be relevant to the families, including a focus on building self-understanding, promoting friendships, and participating in activities outside of the home.

The adapted intervention was evaluated with families recruited through health and community centers, social service agencies, and word of mouth. Families were randomly assigned to PIP or the lecture intervention. Findings showed that the adapted intervention was acceptable for the families. Both groups reported increases in family communication and understanding of parental depression, with greater improvements in PIP than in the lecture intervention [23]. These findings are consistent with the results of previous studies with predominantly white, middle and upper class families.

PIP has several notable strengths, such as the intervention's role as an adjunct to parent's treatment, the inclusion of both parents and children, and the flexibility for adaptation for each family and for diverse populations. In addition, empirical evidence is available from long-term follow-ups with good retention rates and some efficacy outcomes have been replicated with a small sample of low-income, ethnic minority families. One limitation is that children's adjustment and psychological functioning were not reported for the low-income and ethnic minority sample. Additionally, since the comparison group appears to be an active intervention, it is unclear how efficacious PIP is relative to usual care.

Cognitive-Behavioral Group Therapy—Ha and Oh [24] developed a cognitive-behavioral group therapy (CBGT) for mothers with elevated depressive symptoms whose children were in treatment for psychosocial adjustment difficulties. CBGT includes three major components covered in a total of 8 sessions. The psychoeducation component, adapted from Beardslee and colleagues' interventions, teaches mothers about the effects of depression on themselves and their children. The cognitive component teaches cognitive restructuring techniques (identifying negative and biased interpretations, generating more reasonable interpretations of events) and helps mothers to apply these techniques to situations involving their children. The parenting skills component teaches behavioral parenting strategies (instructing children effectively, applying rewards and appropriate consequences for problematic behavior). Through these different components, the CBGT aims to 1) improve mother-child relationships and mothers' feelings of control over their children's behavior, 2) reduce mothers' experience of parenting stress, negative automatic thoughts (especially negative interpretations of children's behavior) and depressive symptoms, and 3) reduce children's behavioral problems.

The CBGT was evaluated in a small study using a non-randomized wait-list control design. Recruitment was conducted through hospital child psychiatry departments and outpatient clinics. Mothers' and children's adjustment was measured before the intervention and post-intervention, at which point the wait-list group received referrals for parent education. A follow-up assessment was conducted 3 months post-intervention with participants in the CBGT condition only. Analyses comparing the two conditions through post-intervention indicated that the CBGT significantly reduced mothers' reports of parenting stress, negative automatic thoughts, and depressive symptoms relative to the control group. The CBGT also improved mother-child interactions and mothers' (but not fathers') reports of children's behavioral

problems. The follow-up assessment indicated that (in the CBGT group), mothers' depressive symptoms, mothers' parenting anxiety, and children's behavioral problems continued to be lower than at baseline.

A major strength of CBGT is the inclusion of several promising intervention components. Study limitations include the lack of random assignment and the very small sample size; there were only 17 families in each condition. Thus, it will be important to replicate these findings with a larger sample using a randomized controlled design.

Parent Education Group

Sanford and colleagues [25] developed a parent education group for parents with MDD and their partners. The parent education group incorporates family psychoeducation and parent training models. It aims to increase: 1) knowledge about depression and its impact on the family, 2) spousal support, 3) positive family communication and 4) positive parenting strategies. The intervention consists of eight weekly two-hour sessions with parents alone or with a partner. Each session focuses on a particular issue of families with parental depression and includes socialization, didactic teaching, viewing videotapes of parenting situations, and homework tasks.

The parent education group was compared to a wait list comparison. In addition, effects were assessed on one child between the ages of 6-13 from each family. At post-intervention, parents with MDD who were in the parent education group reported higher levels of family functioning than parents with MDD in the comparison group. There was a marginally significant benefit of parent education relative to control on reports of family conflict, parenting disagreements, and parenting competence among parents with MDD. There was also a marginally significant benefit of parent education relative to control on partners' depressive symptoms. Surprisingly there were no differences found in depression knowledge between groups. Child outcomes (i.e., depressive symptoms, peer relationships, participation in activities, school problems) also did not differ by condition.

The strengths of this intervention include the integration of psychoeducation and parenting interventions and the potentially increased feasibility of implementing a parent group compared with interventions that include both parents and children. The major limitation of the study is the lack of retention; 27% participants did not complete the post-intervention assessment and 43% were lost by the 8 weeks post-intervention. There was a selective bias in which parents with greater depression severity were more likely to drop out of the intervention than the wait list comparison. Overall, parents with greater depression and single parents failed to complete the study. As a result, the generalizability of the findings is limited especially considering the small sample size.

Interpersonal Psychotherapy for Depressed Mothers

Swartz and colleagues [26,27] developed an individual interpersonal psychotherapy for depressed mothers whose school-age children are in treatment for psychiatric disorders. The therapy (IPT-MOMs) uses three overlapping intervention approaches. The first session focuses on building engagement. The session includes motivational interviewing techniques. These techniques are designed to enhance the client's motivation for change and to identify and resolve barriers to treatment. The session also includes ethnographic interviewing techniques designed to increase the therapist's understanding of the client's cultural background. The remaining eight sessions are based on brief interpersonal therapy, adapted to focus on parenting a child with psychiatric difficulties. The program acknowledges the mothers' love for her child and validates her for bringing her child in for appropriate treatment. Major goals of the program include helping mothers to understand the difficulties of parenting a child with a psychiatric

illness, to understand the importance of taking care of themselves, to develop new parenting strategies, and to interact with their child's mental health team effectively. In addition, the therapists are in contact with the child's mental health team in order to facilitate an alliance with the child's therapist and to help address family issues [26].

A recent efficacy study evaluated IPT-MOMs as an adjunct to child therapy. Families were recruited through pediatric mental health clinics. Mothers of children (ages 6-18) who were in therapy were screened for depressive disorders. Mothers with MDD were then randomly assigned to the IPT-MOMs intervention or to a usual care control. Mothers and children were assessed at baseline, post-intervention, and a follow-up approximately 3 months following the intervention. IPT-MOMs improved mothers' depression and anxiety symptoms and global functioning (relative to usual care) at post-intervention. Improvements in mothers' depressive symptoms and global functioning were maintained at follow-up. Although there was no intervention effect on children's symptoms at post-intervention, children in the IPT-MOMs condition showed greater improvement than controls on depressive symptoms and overall functioning at follow up [27]. The pattern of findings suggests that IPT-MOMs improves mothers' functioning which, in turn, promotes children's well-being.

This study used a strong research design, including random assignment to condition, assessment of mothers' and children's well-being, and evaluation of effects through 6 months of follow up. Limits to the study include the small sample size and high levels of attrition and missing data; the authors note that 40% of children are missing for some measures at some assessments.

Interventions for older adolescents focus on promoting adolescents' coping skills and reducing depressive cognitions and symptoms, as the risk for MDD increases dramatically during this period. One intervention

Coping with Depression

Clarke and colleagues developed a group cognitive-behavioral intervention, the Adolescent Coping with Depression Course (CWD), for adolescents (13-18 years old) with depressive disorders. They also developed an adaptation of this program, the Coping with Stress Course (CWS), for adolescents with high depressive symptoms but sub-threshold for MDD diagnoses. Although these interventions were originally designed for general use with adolescents with depressive disorders and elevated symptoms, they have recently been evaluated with adolescents with depressed parents.

CWD teaches a variety of cognitive-behavioral skills designed to reduce and prevent depression, such as cognitive-restructuring, relaxation, increasing engagement in pleasant activities, and communication and conflict resolution. CWD consists of 16 two-hour group sessions for adolescents and three informational meetings for parents. The CWS consists of 15 one-hour group sessions for adolescents and three informational meetings for parents. The CWD and CWS parent meetings teach parents about the topics and skills covered in the adolescent course so that parents can understand and support their adolescents' use of the skills. Clarke and colleagues evaluated the CWD with depressed adolescents whose parents had received treatment for depression within the past year [28]. Parents were recruited through their Health Maintenance Organization (HMO) and their adolescents were invited to complete a screening assessment. Families with a depressed adolescent were randomized to CWD or to a usual care control that, for most participants, included outpatient mental health visits and medication. CWD did not lead to significantly greater improvement than usual care in this study. However, the majority of adolescents in both conditions recovered from depression following the intervention phase, suggesting both conditions did well and there may have been little room for an added benefit of CWD.

Clarke and colleagues conducted a parallel study of the CWS with adolescents with high sub-threshold depressive symptoms [29]. Recruitment and screening procedures were similar to the CWD study except that adolescents with sub-threshold depressive symptoms (rather than depressive disorders) were invited to participate. Families were randomized to CWS or usual care control condition. This study revealed significant benefits of CWS. Adolescents who participated in CWS were significantly less likely to develop depressive disorders for two years following the intervention. The CWD and CWS intervention studies used strong designs, including random assignment to condition and diagnostic interviews to assess effects on psychiatric disorder. A large, multi-site evaluation of the CWS intervention is underway.

The CWD and CWS programs have many strengths, including targeting adolescents' cognitions and coping styles that may increase risk for depression. Nonetheless, the parent intervention component is very brief and does not focus specifically on parental depression or the effects of parental depression on the family. Similarly, the adolescent and parent interventions do not address parental depression explicitly. Even greater benefits may be obtained by combining CWD/CWS with intervention components that focus more specifically on the effects of parental depression on the family.

DISCUSSION

This review identifies several strategies that can be used in psychiatric care for depressed parents and their children. Identifying and treating parents' depression is a crucial first step. A recent systematic review that examined the effects of treating parental depression on children's adjustment showed some evidence of an association between improvement in parental depression and improvement in children's emotional and behavioral symptoms [30]. Nevertheless, due to the recurrent nature of depression and mixed evidence for benefits from parental treatment alone on child outcomes, interventions that focus on both the depressed parent and children are needed in psychiatric settings. The studies reviewed suggest several approaches that may be beneficial.

Therapy for adult depression can be expanded to focus on parenting experiences. For example, therapists can use cognitive-behavioral techniques similar to those employed by Ha and Oh [24], Sanders and McFarland [14], and Verduyn and colleagues [13] to help parents to identify and challenge negative cognitions about their children and parenting, interpret their children's behavior more realistically, and cope more effectively with the day-to-day challenges of parenting. This therapeutic strategy may improve parents' depression as well as children's functioning.

Studies by Beardslee and colleagues [17,20,21] studies, as well as Sanford and colleagues [25], highlight the importance of educating families with parental depression about depression and its impact on children. This psychoeducation can be easily transported to treatment settings. Interventions that focus on improving relationships between parents and their children may be especially helpful, particularly when parental depression has lasted a long time or is interfering greatly with parenting. For parents of very young children, therapists may facilitate the development of secure attachment by working closely with the parent-child dyad [10,11]. For parents of older children and adolescents, therapists can facilitate conversations about how depression affects the family and build communication between parents and children, as these strategies may increase empathy, reduce children's self-blame and anger, and strengthen relationships within the family [16,17,18,19].

A variety of other strategies may be helpful as well. For example, interventions that teach behavioral parenting techniques can help parents to attend more to children's positive behavior and to discipline their children more effectively, thereby reducing risk for conduct disorder

and other behavioral problems [13,14,24,25]. Interventions that teach coping skills directly to children may be especially important for reducing and preventing depression in children of depressed parents [28,29].

Most of the interventions reviewed used a combination of strategies, which is appropriate given the variability in how depression affects families and the broad range of difficulties that can be associated with parental depression. In selecting components, it may be especially important to consider the stressors the parent and family are experiencing, the severity of parents' symptoms, the level of impairment in parenting, the children's developmental level and the children's psychological adjustment. For example, interventions that teach coping skills to children may be most helpful for late elementary through high school age children with psychological symptoms or temperamental vulnerabilities, or who are exposed to high levels of stress.

Limitations of Research

Although the findings from existing studies are promising, it is too early to draw conclusions about the effectiveness of interventions that are designed to promote well-being in children of depressed parents. Only a handful of intervention studies exist and there are many limits to most of these studies. Most studies use very small samples, and most of these samples are fairly homogenous, composed primarily of European American families of middle to upper socio-economic status.

The evidence for the effectiveness of interventions relative to no intervention or usual care is limited. Five interventions were compared to no-intervention or usual care using randomized controlled designs [10,13,25,27,29]. One intervention was compared to no-intervention control in a non-randomized design [24]. The other interventions were evaluated in comparison to alternate interventions [13,14,18]; as findings from those studies suggested similar improvements in both conditions on many outcomes, it is hard to know whether improvements are due to the interventions or to other factors (e.g., repeated assessments or the passage of time). In addition, there is little information about the long-term benefits of most interventions because the follow-up periods are quite brief.

Systems Issues

Given the substantial evidence that children of depressed parents are at increased risk for a variety of psychological and behavioral difficulties, it is striking how few interventions target these children. The lack of studies likely reflects the practical difficulties in implementing interventions for depressed parents and their families. There are many challenges in this area of work. Intervention studies are difficult to implement in general. Parents who have depressive disorders or high levels of depressive symptoms may have difficulty initiating and sustaining treatment for themselves and their children. This may be reflected in the high rates of attrition found in certain studies [24,25,27].

Interventions that target children of depressed parents don't fit easily in the existing mental health care services system. In the U.S., there is often a separation between adult and child/adolescent psychiatric treatment and, as a result, interventions including both depressed parents and their children do not have a natural home. One possibility is to include interventions for parental depression that aim to impact child outcomes within adult psychiatric services. Finland may provide a good model for this approach; it has adopted the PIP for use within adult psychiatric services throughout the country [31]. The intervention is called the Effective Family Programme (EFP) and is implemented with all parents who are being treated for psychopathology. EFP also includes self-help materials, discussion with parents about their children which is implemented by a health care provider who does not need expertise in child

development, and a network meeting assessing for family social service needs. Although outcome data has not been published, the delivery of EFP provides an excellent illustration of how the role as a parent and a focus on children can be integrated into treatment for adults with depression.

Another possibility is to include interventions for depressed parents and their children within child and adolescent psychiatric services. Mental health providers who treat children and adolescents are accustomed to interactions and intervention strategies that involve the parents of their patients. Likely a family would be involved in this system when a child or adolescent is already exhibiting clinical levels of emotional distress or behavioral problems. IPT-MOMs provides an excellent model of an intervention that focuses on parental depression as an adjunct to child psychiatric treatment [26,27]. Additionally, Chronis and colleagues [32] adapted the CWD course for mothers of children with Attention-Deficit Hyperactivity Disorder who had attended a behavioral summer treatment program. This intervention demonstrated successful parent and child outcomes. However, the inclusion of interventions for children of depressed parents within child psychiatric services may also limit their utility to the subset of children who have psychological disorders and who are also in treatment. Other approaches are needed to prevent psychological disorders in children of depressed parents and to reach children with psychological disorders who are not receiving psychiatric care.

Future Directions

Future directions include larger scale studies of these interventions with diverse samples and long term follow up on child outcomes. In addition, the development of different models of intervention for depressed parents and their children from toddlerhood to adolescence is warranted. Multi-component interventions seem to be an especially promising approach to address the complex and multiple effects parental depression has on children as well as parent-child relationships and parenting. A few studies of multi-component interventions have recently been completed. For example, both the Keeping Families Strong intervention [33] and the Protecting Families Program [34] are multi-component interventions that blend psychoeducation, parent training, cognitive behavioral skills training for children of depressed low-income parents in treatment and their school aged children. The Keeping Families Strong intervention was not tested in a controlled study and so is not included in this review. Findings from the Protecting Families Program trial have not been published yet. In conclusion, although the research on interventions for parental depression has demonstrated some benefit for both parent and child outcomes, further research on the existing interventions is needed. Due to the burden and intergenerational impact of parental depression, it is imperative that interventions focused on this population are implemented and transported into practice settings.

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Table 1
Summary of Intervention Studies for Parental Depression

Intervention	Toddler-Parent Psychotherapy (TPP)	Group Cognitive-Behavioral Therapy (GCBT)	Cognitive-Behavioral Family Intervention (CBFI)	Parenting Psychoeducation Group
Article(s)	a) Cicchetti et al., 1999 [10] b) Cicchetti et al., 2000 [12] c) Toth et al., 2006 [11]	Verduyn et al., 2003 [13]	Sanders & McFarland, 2000 [14]	Sanford et al., 2003 [25]
Country	U.S.	United Kingdom	Australia	Canada
Intervention Type	Dyadic psychotherapy	Group CBT for parents	Multi-component CBT family intervention	Parenting Psychoeducation group
Sample Size	a) 108 mothers and their toddlers b) 158 mothers and their toddlers c) 130 mothers and their toddlers	119 mothers and their children	47 families	44 families
Children Age Range	a) & c) approximately 20 months at start of intervention to 3 years at end of intervention b) approximately 18 months at start of intervention to 3 years at end of intervention	2.5-4 years	3-9 years	6-13 years
Race/SES	a) 95% white; 74% in highest two SES levels on Hollingshead's four factor index; 52.8% of mothers were college graduates or had advanced degrees b) 92.4% white; 73.4% in 2 highest SES levels according to Hollingshead's four factor index; 53.8% of mothers were college graduates or had advanced degrees c) 92.9% white; 72.7% in 2 highest SES levels according to Hollingshead's four factor index; 54.5% of mothers were college graduates	15 - 26% were single mothers across conditions; 67.6 - 83.3% was educated to 16 years of age across conditions	Mean sociodemographic disadvantage was low.	27% upper middle class; 50% middle class; 23% lower-middle class
Inclusion Criteria	a), b) & c) Parent: history of MDD at some point since birth of their child; at least a high school education; could not be on public assistance. Child: None besides age	Parent: score of 15 or greater on the Beck Depression Inventory; must live with their child; English is their first language; and no other major psychiatric disorder besides depression. Child: no major developmental problems; and behavior problems 8 or greater on the Behavior Screening Questionnaire	Parent: MDD Child: CD or ODD	Parent: MDD diagnosis by referring physician; currently under medical care for MDD; not currently manic, psychotic or acutely suicidal; able to participate in a group child: none besides age
Assessments (Time)	a), b) & c) Pre- and post-intervention	Pre- and post-intervention and 6- and 12-month follow-up	Pre- and post-intervention & 6 months post-intervention	Pre- and post-intervention and 8 weeks post-intervention
<u>Intervention</u>	<u>Preventive Intervention Project (PIP)</u>	<u>Cognitive-Behavioral Group Therapy (CBGT)</u>	<u>Interpersonal Psychotherapy for Depressed Mothers (IPT-MOMs)</u>	<u>Coping with Depression (CWD)</u>
Article(s)	a) Beardslee et al., 1992 [15] b) Beardslee et al., 1993 [16] c) Beardslee et al., 1996 [318] d) Beardslee et al., 1997a [19] e) Beardslee et al., 1997b [17] f) Beardslee et al., 1997c [22] g) Podorefsky et al., 2001 [23] h) Beardslee et al., 2003 [20] i) Beardslee et al., 2007 [21]	Ha & Oh, 2006 [24]	Swartz et al., 2008 [27]	a) Clarke et al., 2001 [29] b) Clarke et al., 2002 [28]

Intervention	Toddler-Parent Psychotherapy (TPP)	Group Cognitive-Behavioral Therapy (GCBT)	Cognitive-Behavioral Family Intervention (CBFI)	Parenting Psychoeducation Group
Country	U.S.	Korea	U.S.	U.S.
Intervention Type	Family based psychoeducation	Parent psycho-education, CBT, & behavioral parenting group	Individual Psychotherapy	Group CBT for adolescents & group parent informational sessions
Sample Size	a) 7 families b) 12 families c) 28 families d) & e) 37 families f) 36 families g) 16 families h) 93 families i) 105 families	34 mothers	47 families	a) 123 adolescents b) 472 adolescents
Children Age Range	a), b), & c) 8-14 years d), e), f), h), & i) 8-15 years g) not described	5-12 years	6-18 years	13-18 years
Race/SES	a) top 2 SES on Hollingshead-Redlich classification b) & i) not provided c) mean of 2.34 Hollingshead social class (range 1-4) d) & e) predominantly white middle class f) mostly middle class and Caucasian g) 100% ethnic minority, low-income h) top 2 SES on Hollingshead-Redlich classification; 77% with income > \$40,000; 93.6% White	Not provided	79% Caucasian; income-26.5% <\$15,000, 47% between \$15,000-50,000 & 26.5% >\$50,000	a) 88.5% white; 32.2% of parents were college graduates; 89.6% of parents were employed b) 90.8% white; 23.3% of parents were college graduates; 74.7% of parents were employed
Inclusion Criteria	a) Parent: history of affective disorder in recent past, no schizophrenia or organic brain damage; no current drug/alcohol addiction, treating professional; no current life crisis. Children: not currently seriously disturbed. b) Parent: MDE or Manic episode within last year; no schizophrenia or organic brain damage; no current drug/alcohol addiction; treating professional; no serious family crisis. Child: not currently seriously disturbed or in treatment for psychiatric disorder c) Parent: MDE or Manic episode within last year, no schizophrenia; no substance abuse; no marital crisis. Child: not currently ill; never treated for depression d) Parent: MDE or manic episode within 18 month; no schizophrenia; no current severe marital crisis or other crises, current marital or family therapy more than once a month; no current substance abuse. Children: never affectively ill; never treated for an affective disorder; not currently in treatment e) & f) Parent: MDE or manic episode within 18 months; no schizophrenia; no current severe marital	Parent: elevated depressive symptoms, elevated parenting stress Child: in treatment for psychosocial adjustment problem	Parent: 18-65 years old; current MDD; score of 15 or greater on the Hamilton Rating Scale for Depression; biological or adoptive mother <i>and</i> custodial parent; must currently be living with child; not at serious risk for child abuse or neglect; no substance abuse within the preceding 6 months; not actively suicidal; no psychotic disorder; no borderline or antisocial personality disorder; not unstable medical condition that could affect assessment of mood; not currently in individual therapy. Child: receiving treatment for internalizing or externalizing disorder	a) Parent: 30-65 year old HMO plan members with current or recent (past 12 months) depression; live close to study center. Adolescent: high levels of depressive symptoms; no current depression diagnosis b) Parent: 30-65 year old HMO plan members in current or recent (past 12 months) with current or recent (past 12 months) depression; live close to study center. Adolescent: current diagnosis of depression

Intervention	Toddler-Parent Psychotherapy (TPP)	Group Cognitive-Behavioral Therapy (GCBT)	Cognitive-Behavioral Family Intervention (CBFI)	Parenting Psychoeducation Group
	crisis or other crises; not currently in marital or family therapy more than once a month; no current substance abuse. Child: never treated for affective disorder g) Parent: depression diagnoses. Child: not provided h) Parent: mood disorder episode within 18 months no serious current substance abuse or dependence, no current schizophrenia, no current severe marital or life crises, not currently in marital or family therapy more than twice a month. Child: never diagnosed or treated with mood disorder i) Parent: mood disorder episode within 18 months, no serious current substance abuse or dependence, no current schizophrenia, no current severe marital or life crises, not currently in marital or family therapy more than twice a month. Child: no current or past MDD			
Assessments (Time)	a), b), e) & g) Pre- and post-intervention c) 6-8 weeks post-intervention, 12-18 months post-intervention, 2.75 - 3 years post-intervention d) Pre- and post- intervention and 1.5 years after enrollment f) Pre-intervention and 1.5 years after enrollment h) 1 year and 2.5 years post-intervention i) 4.5 post intervention	Pre- and post-intervention; 3months post-intervention with intervention group only	Pre- and post-intervention and approximately 3 months post-intervention	a) & b) Pre- and post-intervention and follow-ups at 12 and 24 months post-intervention

Notes: SES=Socioeconomic status, CBT=Cognitive Behavioral Treatment, MDD=Major Depressive Disorder, CD=Conduct Disorder, ODD=Oppositional Defiant Disorder, MDE= Major Depressive Episode, HMO=Health Maintenance Organization.