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## Treatment of Anxiety and Depression in the Preschool Period

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### Abstract

**Objective**—Empirical studies have now established that clinical anxiety and depressive disorders may arise in preschool children as early as age 3.0. As empirical studies validating and characterizing these disorders in preschoolers are relatively recent, less work has been done on the development and testing of age-appropriate treatments.

**Method**—A comprehensive literature search revealed several small randomized controlled trials (RCTs) of psychotherapeutic treatments for preschool anxiety and depression. The literature also contains case series of behavioral and psychopharmacologic interventions for specific anxiety disorders. However, to date, no large-scale RCTs of treatment for any anxiety or depressive disorder specifically targeting preschool populations have been published.

**Results**—Several age-adapted forms of cognitive behavioral therapy have been developed and preliminarily tested in small RCTs, and appear promising for a variety of forms of preschool anxiety disorders. Notably, these adaptations centrally involve primary caregivers and utilize age-adjusted methodology such as cartoon-based materials and co-constructed drawing or narratives. Modified forms of Parent Child Interaction Therapy (PCIT) have been tested and appear promising for both anxiety and depression. While preventive interventions that target parenting have shown significant promise in anxiety, these methods have not been explored in area of early childhood depression. Studies of the impact of parental treatment on infants suggest that direct treatment of the youngest children may be necessary to affect long-term change.

**Conclusions**—Recommendations are made for clinical treatment of these disorders where psychotherapy is the first line of intervention.

### Keywords

preschool; treatment; depression; anxiety

## Validation of Depression and Anxiety Disorders in Preschoolers

Over the last 2 decades, numerous independent empirical studies have shown that clinical depressive and anxiety disorders can arise as early as the preschool period of development.

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In contrast to the older established literature and common clinical lore, the idea that these symptoms when arising in young children would be non-specific or developmentally transient has also been largely refuted by available data. A substantial body of literature now demonstrates that several discrete *DSM-IV* depressive and anxiety disorders can be identified in preschool children.<sup>1-6</sup> These disorders are characterized by the same core symptom constellations known in older children, although some developmental adjustments to the criteria have been recommended in specific disorders.<sup>5,7,8</sup> While only a few epidemiological studies utilizing sensitive semi-structured interviews are available to inform the prevalence rate of preschool disorders, rates for anxiety and depression have been estimated at 9% and 2% respectively, similar to the rates reported in school-age children.<sup>9,10</sup> In addition the rates and pattern of co-morbidity in these preschool onset disorders are also similar to those known in the school age period.<sup>3</sup> Early identification of mental disorders has been increasingly emphasized based on promising evidence for more robust treatment effects during a period of relatively greater developmental change and associated neuroplasticity.<sup>11,12</sup> Based on these data, the principle of “watchful waiting” is no longer the standard of care for anxiety and depression in early childhood. This article provides a review of the available treatment literature on these early childhood disorders and recommendations for clinicians about how to proceed with evaluation and treatment informed by the currently available empirical database.

## Assessment

Although adequately powered empirical investigations in early childhood mental health have gained momentum only more recently, general techniques for the age-appropriate assessment of mental disorders in infants and preschoolers have been established and in use for many decades.<sup>13,14</sup> Specialty mental health clinics focusing on the assessment and treatment of infants and preschoolers were established and numerous case reports published many years prior to the publication of the Diagnostic Classification 0-3 (DC 0-3) system in 1994.<sup>15-18</sup> Several useful updated guides are now available detailing principles and techniques for the assessment of early childhood mental disorders utilizing newly available measures and methodologies.<sup>19</sup> Key principles of early childhood assessment that differentiate it from standard assessment methods used in older children include the need for multiple observations of the child over time with different caregivers (when applicable). This principle therefore requires that early child mental health assessments involve more time than the standard for older children. In addition, the use of the caregiver-child dyadic context and play as the medium of observation is also critical and unique to this age group. That is, the mental status exam of the young child should be conducted as a dyadic play observation with a primary caregiver, a well justified approach based on the central importance of relationship-specific behavioral problems in early childhood and greater state-related variation in behavior.<sup>20</sup> The use of the dyadic relationship's context to evaluate the young child, and observation of the child in play interaction with caregivers, are the central and perhaps most important developmental tenants of an age-appropriate preschool mental health assessment. Given the increased importance of context specificity of behavioral problems in early childhood, preschool/daycare teacher reports and if possible observations are also very important and must be considered as a part of a comprehensive evaluation of the young child. The assessment of developmental competencies, a component of all child assessment, is particularly important in early childhood when the developmental trajectory is steep and developmental delays commonly accompany emotional and behavioral problems. All of these principles reflect the need for developmentally sensitive approaches to obtain an accurate view of the young child's mental state and functioning. In addition, consideration of how symptoms might manifest differently, accounting for the unique life experience of the young child (where for example play is the central activity), is also critical and has been a key component of the nosological work conducted to date in preschool populations.

Examples of this are that death or suicidal themes may not be verbally expressed but instead are evident in play or that anhedonia is evidenced by the inability to enjoy daily play activities as is the norm at this developmental period.

### **Validation of Preschool MDD**

Significant progress has been made in the identification and validation of depressive disorders in young children. The database demonstrating the validity of clinical depression in preschool children has grown significantly over the last two decades. Building on the early studies of Kashani *et al.*, larger empirical investigations that make use of advances in measurement have demonstrated a stable and specific symptom constellation, discriminant validity from other preschool onset psychiatric disorders, homotypic continuity and increased family history of related disorders.<sup>3,4,10,21–23</sup> In addition biological correlates such as alterations in stress hormone reactivity have also been detected in depressed preschoolers.<sup>24</sup> More recently evidence of alterations in functional brain activity similar to that known in depressed adults has been detected in school age children who experienced a preschool episode of depression and among depressed preschoolers themselves (Gaffrey MS, Barch DM, Singer J, Shenoy R, Luby JL, unpublished data, 2013).<sup>7,25,26</sup>

### **Validation of Preschool Anxiety Disorders**

In the area of anxiety disorders, with the sole exception of PTSD, there has been less focused investigation of the validation of specific anxiety disorders in young children. A relatively larger body of work has investigated the validity and informed the age-adjusted criteria for posttraumatic stress disorder (PTSD).<sup>8</sup> In other anxiety disorders arising in preschoolers, the database is restricted to descriptions of anxiety disorders in clinically referred preschoolers or smaller exploratory studies of specific disorders.<sup>15–17,27</sup> Larger studies have looked at the structure of preschool anxiety symptoms more broadly suggesting that the sub-types as defined in older children also apply to preschool populations.<sup>28–30</sup> Several epidemiological studies have identified anxiety disorders in young children and Bufferd *et al.*, have recently reported both heterotypic and homotypic continuity of anxiety from preschool into school age.<sup>9,10,31,32</sup> To facilitate early identification in primary care settings, is now highly feasible to screen for preschool anxiety and depression using age appropriate and validated checklists, specifically the Preschool Feelings Checklist for depression (PFC),<sup>33</sup> and the Revised Preschool Anxiety Scale.<sup>34,35</sup>

Despite progress in the clinical characterization and validation of preschool depression and anxiety, treatments for the early childhood forms of these disorders have only more recently begun to be empirically explored. In contrast, there is a relatively large body of empirical data on the treatment of depression and anxiety in school-age children and adolescents including several well-powered multi-site investigations that address psychotherapy and pharmacotherapy both singly and in combination.<sup>36,37</sup> The focus of this report will be on the treatment of anxiety and depression in preschool aged populations and studies that specifically target treatments for children between the ages of 3–6 will be summarized.

## **Treatment of Anxiety Disorders**

### **Behavioral Inhibition and Risk/Prevention for Early Childhood Anxiety Disorders**

Of relevance to the treatment of early onset anxiety disorders, there has been a great deal of investigation in the domain of prevention and the detection of early signs of risk for anxiety disorders. The construct of “behavioral inhibition” (BI), a behavioral style evident as early as the toddler years, has been shown to be a stable across early childhood, associated with characteristic alterations in physiology, and predictive of risk for later anxiety disorders.<sup>38,39</sup> BI is an objectively measurable trait as early as the toddler period that is observed in

experimental settings in which novelty is introduced. BI is evidenced by avoidance of the novel or unfamiliar stimuli, high levels of clinging to the caregiver, decreased vocalization and in some cases physical withdrawal from the novel stimulus.<sup>39</sup> Several longitudinal studies have linked early childhood BI to higher risk for later childhood anxiety disorders.<sup>40</sup> BI is one of the most well-established and well studied precursors of early childhood anxiety disorders. Importantly, small but promising longitudinal studies suggest that early preventive intervention in young children who demonstrate BI may alter the risk trajectory towards anxiety disorders.<sup>41</sup>

### Parenting Style and Transmission of Anxiety

BI, as well as other anxious traits, has been shown to have both genetic and environmental determinants.<sup>42</sup> However, of importance to early intervention, psychosocial parent-child relational mechanisms of transmission of anxiety have been identified. Observational studies have reported characteristic parenting patterns in the parents of anxious children, a group that is often suffering from clinical anxiety disorders themselves. A dynamic in which the parenting practices of anxious parents serve to unwittingly reinforce and exacerbate the anxiety of an anxious offspring has been observed and documented.<sup>43</sup> Several key relational dynamics appear to be operational in these high-risk dyads. One is that parents model fear and avoidance behaviors for the child. They may also reinforce avoidant coping styles by teaching and modeling heightened threat perception as a function of their own anxiety. Related to this is that anxious parents tend to be highly protective and controlling and thereby may fail to facilitate the young child's autonomy, a central developmental challenge of this period. Based on these dynamics, intervention at the level of parenting has proven quite effective at ameliorating early onset anxiety symptoms in young children.

Rapee *et al.* developed a short-term group program aimed at modifying parenting in high risk inhibited preschoolers.<sup>41</sup> This program consisted of groups comprised of six sets of parents conducted over six 90-minute sessions. The sessions cover psychoeducation about the development of anxiety, parenting techniques to minimize child anxiety, including diminishing over protective parenting, methods to encourage graded-exposure for children, and parental cognitive restructuring. An entire session is devoted to cognitive restructuring techniques targeting the parent's anxiety. In the final session, future challenges including the notion of "risk points" such as starting a new school etc., and the need to continue graded exposures and facilitation of independence are emphasized. This short term group approach has proven remarkably effective to reduce the rates of anxiety symptoms and disorders in young children.<sup>41,44</sup> In this way early parenting interventions may successfully interrupt patterns of parent-child interaction that serve to reinforce and promote anxious patterns of behavior in the young child. The efficacy of such family intervention underscores the need for early identification and relationship-based intervention, and suggests that watchful waiting in these cases is no longer the standard of care.

### Empirically Tested Psychotherapies for Anxiety Disorders

Building on this risk literature, and guided by treatments established for anxiety in older children, to date several developmentally adjusted treatments for early childhood anxiety disorders have been tested in small randomized clinical trials (RCTs) (Table 1). Age-adjusted forms of cognitive behavioral therapy (CBT) have been designed and tested for the treatment of several specific anxiety disorders arising in preschool-aged children. The developmental limitations of the preschool child's capacity to understand cause and effect and their use of "pre-operational" or pre-logical thinking have been cited as a possible contraindication to the use of cognitive behavioral techniques in young children.<sup>45</sup> Despite this, and consistent with post-Piagetian empirical theory and data demonstrating the capacity for reason earlier in development,<sup>46</sup> several age-appropriate adaptations of CBT have proven

effective in children as young as age 3. Further, direct testing of whether preschoolers as young as 3 understand age-adapted CBT techniques have been conducted with positive results.<sup>47</sup>

**Post-Traumatic Stress Disorder**—In one of the first empirically tested adaptations of CBT for young children, Cohen and Mannarino<sup>48</sup> developed and tested a form of CBT for sexually abused preschoolers (SAP) between the ages of 3–6, known as CBT-SAP. This treatment was tested compared to a client centered therapy (CCT), a psychodynamic play therapy approach in which parent and child are seen separately (with individual parent sessions focused on the child’s symptoms). CBT-SAP was found to be more effective than CCT for the treatment of sexually abused preschoolers. While preschoolers who received CCT also significantly improved in weekly ratings, only those who received CBT-SAP showed significant improvements of internalizing and externalizing symptoms on the Child Behavior Checklist (CBCL).<sup>48</sup> Deblinger, Stauffer, and Steer<sup>49</sup> used a similar CBT-based approach in sexually abused children as young as 2 and demonstrated feasibility and efficacy. Prior to these data, trials of CBT for various forms of anxiety were generally restricted to children 5 and older based on the idea that cognitive approaches would be developmentally inappropriate for young children as described above.<sup>45</sup> An essential element to all adaptations of CBT for preschoolers is the integral involvement of the parent, the use of age-adjusted metaphor and imagery through cartoons and drawings, and other approaches that adopt the young child’s worldview and make the treatment developmentally feasible and acceptable for preschoolers.

Scheeringa *et al.* have developed a manualized form of CBT for early childhood Post Traumatic Stress Disorder (PTSD) for children between 3 and 6 years called Preschool Posttraumatic Stress Treatment (PPT).<sup>47</sup> While the treatment appeared feasible and effective for 3 year olds, the authors note that it took this younger group longer to learn the skills and they were less proficient at self-report of anxiety<sup>50</sup>. The treatment was tested compared to a waitlist control condition and demonstrated both initial efficacy as well as enduring effects 6 months post treatment.<sup>50</sup> Key features of this treatment include the use of a cartoon-based narrative to address the trauma and the use of a child and therapist co-constructed book to document the child’s trauma narrative as the treatment progresses. Other unique developmental features are consideration of the trauma experienced by the parent, and the inevitable resistance the parent may have to addressing the child’s trauma due to denial, guilt, and issues in his or her own trauma recovery process. Both parent and child are seen for a part of each session (separately and together) and at later stages in the treatment the parent watches a videotape of the child describing the traumatic event from his or her own perspective. The use of the videotaped account allows the parent to process the child’s experience in a less emotional and more objective setting, thus enhancing the parent’s ability to understand the child’s emotional experience with the assistance and support of the therapist. Using these techniques, this form of CBT addresses the relationship context of the preschooler’s PTSD symptoms and addresses the trauma at a pace and in a manner the young child can process and understand.

**Generalized Anxiety, Separation Anxiety, and Phobias**—Hirshfeld-Becker *et al.* have tested a parent–child form of CBT for the treatment of young children with anxiety disorders.<sup>38</sup> The treatment, entitled “Being Brave: A Program for Coping with Anxiety for Young Children and their Parents,” was adapted from the widely used and well tested “Coping Cat” program developed by Kendall *et al.* for older anxious children.<sup>51</sup> This modified treatment has numerous novel developmental features including several sessions of parent-only psychoeducation to address issues in parenting, the use of graded exposure enhanced by helping the child to understand the need for bravery, and reinforcement for and rehearsal of adaptive coping strategies. Exposure exercises were developmentally modified



to include games and play as well as increased use of positive reinforcement. After the parent-only psychoeducation, the treatment is conducted in a parent-child dyadic format. Young children ages 4–7 with a variety of co-morbid anxiety disorders (generalized anxiety disorder [GAD], separation anxiety disorder [SAD], and social phobia) were randomized to either this treatment or a 6-month waitlist control. Young children who received the active treatment demonstrated significant decreases in anxiety disorders and increases in parent-rated coping for all disorders studied with the exception of GAD. Importantly, gains made in treatment were maintained at a 1-year post-treatment follow-up.

Another approach that has been adapted to treat anxiety in children as young as age four is Parent Child Interaction Therapy (PCIT), developed by Sheila Eyberg, Ph.D. PCIT is a well tested and widely used form of dyadic treatment that was originally designed and tested for the treatment of preschool disruptive disorders.<sup>52,53</sup> Pincus *et al.* have tested a modified form of PCIT for the treatment of preschool anxiety in a pilot RCT with promising results.<sup>54</sup> This treatment adds a bravery directed interaction (BDI) component to the treatment using the “teach and coach” format of standard PCIT. In the BDI teach sessions, parents are given psycho-education about anxiety including how certain parenting styles can reinforce anxiety (through anxious responses to the child’s expression of separation anxiety, for example) and to learn alternative strategies to respond to the child’s expression of intense anxiety. Following this, parent and child work together to develop a fear and avoidance schematic dubbed a “Bravery Ladder” that is used along with a “Reward Stone” to reward the child’s brave behaviors. These latter techniques, in which tangible metaphor and concrete goals are represented, are the kind of developmental adjustments needed for application of a variety of treatment techniques for young children. These studies of several forms of treatment taken together provide strong support for the efficacy of age-adjusted psychotherapeutic approaches for anxious preschoolers with integral involvement of the parent as the first line of treatment in young child populations.

**Selective Mutism**—Other anxiety disorders observed during the preschool period for which there are no empirical studies available but rather single case reports and/or case series of treatments are selective mutism and obsessive compulsive disorder (OCD). Selective mutism is a difficult disorder to treat that often onsets in young children with “shy” temperaments or behavioral inhibition as they enter preschool or daycare settings. To date, there are no prospective RCTs of treatments for selective mutism. Oerbeck *et al.*<sup>55</sup> report a pilot study of a 6-month intervention in N=7 preschoolers, ages 3–5, in Norway. The intervention starts in the home and transitions to the kindergarten setting. With the exception of one neuro-developmentally delayed child who failed to respond, the intervention appeared very promising with all 6 other children treated speaking freely in kindergarten at end point and 1 year follow-up. The intervention involved parent psycho-education and cognitive behavioral techniques. A central technique involved the use of “de-focused communication” a method that encourages the child to speak under less pressured conditions such as sitting next to rather than across from the person they are communicating with, or speaking during a joint attention task or thinking out loud rather than in response to direct questions. In addition a recording of the child’s speech is made to mark progress. This study had no control group, and therefore one cannot rule out that the effects of treatment were due to maturation. Notably, however, all children had sustained symptoms prior to the intervention. A review of the treatment literature for selective mutism notes the lack of controlled trials but suggests that cognitive behavioral and multi-modal approaches appear promising and should now be appropriately tested.<sup>56</sup>

**Obsessive Compulsive Disorder**—Similar to selective mutism, there is very little data to inform the treatment of early childhood Obsessive Compulsive Disorder (OCD). As outlined below a few case series of pharmacological treatments have been reported. One

published study has been conducted that compared two forms of psychotherapy in children ages 5–8 with OCD.<sup>57</sup> This study utilized a developmentally adjusted form of CBT, called “family” CBT, which used age-appropriate education and metaphor, and integrally involves the primary caregiver in a coaching role and to directly address their tendency to comply with the child’s ritualistic behavior. This treatment was compared to a form of relaxation therapy. Findings suggested that family-based CBT was superior to a relaxation therapy in those who completed the treatment (although no differences were detected in an intent-to-treat analysis). Ginsburg *et al.*<sup>58</sup> provide a case series of 7 patients who showed a positive treatment response to an adaptation of CBT that was modified for young children by focusing on the parent–child relationship and addressing the role of parental anxiety in maintaining the child’s symptoms. The involvement of the parent has been noted as key to age-adapted treatments for OCD in young children, given the role of the parent in accommodating and potentially unwittingly maintaining the child’s symptoms.<sup>59</sup> While these case series in young children and small trials that included younger children are of relevance to preschoolers, notably, to date, there have been no RCTs focusing specifically on preschool-aged children with OCD. In a review of the literature, Freeman *et al.*<sup>60</sup> emphasize the need for further empirical testing of developmentally-adapted CBT approaches for early childhood OCD, including consideration for the greater efficacy and possible preventive effects of early intervention.

## Treatment of Depression

In the area of depression, studies of both the etiology and treatment of depression in preschool children remain empirically under-investigated. As preschool-onset major depressive disorder (PO-MDD) has only more recently been validated, and studies of early risk have focused almost entirely on infants,<sup>61,62</sup> very little work has been done on early intervention in depression identified in the young child. Numerous preventive intervention programs focused on the depressed mothers of infants have been employed and have shown great promise,<sup>63,64</sup> but these treatments have not been tested in populations of depressed preschoolers.

## Considerations for Clinical Assessment

Historically, depressive symptoms in young children have most often gone undetected. Numerous factors may contribute to this, including the fact that parents may be less aware of their young child’s internally experienced negative mood states and/or less willing to acknowledge or be vigilant for such a complex symptom in their young child. Further, young children do not often spontaneously self report depressive symptom states. This is in contrast to anxiety which is a symptom that makes itself much more evident based on clear social impairment. Another contributor is that mental health clinicians often do not ask the right questions to unearth the presence of these symptoms in young children and frequently harbor the underlying belief that young children cannot experience depression. The obvious line of inquiry in the mood domain, such as questions about the presence of suicidal ideation, is an uncommon phenomenon in the preschool child. Among the more common and less specific depressive symptoms, tearfulness and crying is often age-appropriate and normative. Both empirical studies and clinical experience suggest that important domains to explore for evaluating the presence of depression in the young child include excessive guilt, decreased energy, anhedonia evidenced by lack of pleasure in activities and play (a symptom that is not normative in a preschooler) and preoccupation with negative play themes.<sup>3,21</sup> Other areas more frequently explored, but not necessarily in the search for preschool depression, are changes in energy, sleep, and appetite. All of these have demonstrated specificity for the diagnosis of depression in the young child<sup>21</sup> and questions along these lines should become a standard part of the psychiatric assessment of the preschool child.

## Empirically Tested Psychotherapy for Depression

While clinical case reports of the treatment of preschool depression are available, to date, there has been little empirical investigation of treatments for the early onset disorder. A large meta-analysis of psychotherapeutic treatments for childhood depression did not include children younger than 7 years of age.<sup>65</sup> The only empirically tested treatment published to date is Parent Child Interaction Therapy Emotion Development (PCIT-ED). PCIT-ED is an adaptation of PCIT, a well-established early intervention for preschool disruptive disorders mentioned above, that has also been modified to treat early childhood anxiety disorders. Standard PCIT is designed to enhance the quality of the parent-child relationship and to teach the parent how to set firm and nurturing limits with the child. This is achieved through two modules: a Child Directed Interaction (CDI), which focuses on helping the parent to follow the child in play, offer positive appraisals, and enhance the parent-child relationship, followed by the Parent Directed Interaction (PDI), which is designed to teach the parent to set firm limits with the child in a non-punitive fashion. PCIT is conducted in a dyadic format and utilizes a teach-coach model that aims to have the parent serve as “the arm of the therapist,” a cost-effective strategy with high potential for long-term benefit beyond the confines of treatment. Studies have shown that the positive effects of standard PCIT endure over many years without booster sessions.<sup>66</sup>

The novel Emotion Development (ED) module (Stalets MM, Pautsch J, McGrath M, Luby J, unpublished manuscript, 2009), developed to address depression and focused on enhancing emotion competence and emotion regulatory skills, utilizes the core techniques of standard PCIT. These techniques include in vivo coaching of the parent during interactions with the child, followed by teaching of the parent and homework between sessions so that learned skills can be honed and maintained. The ED module aims to help the child accurately identify and understand their own emotions and learn to effectively regulate intense emotions. The module targets impairments in emotion regulation shown to be fundamental to early onset MDD, such as intense and persistent negative affect, including the intense and excessive sadness and guilt characteristics of depression in young children.<sup>67,68</sup> In addition, the ED module focuses on enhancing the capacity to experience positive affects, also shown to be impaired in depression.<sup>69</sup> These goals are accomplished through in vivo exercises designed to elicit negative and positive emotions, during which the observing therapist coaches the parent to assist in down or up regulating the child appropriately. Sessions designed to teach the child emotion recognition and relaxation skills are also included. The parent is central to achieving these goals given how psychologically and physically dependent the young child is on the parent at this stage of development. Therefore the ED module focuses on helping the parent to become a more effective external emotion regulator for the child, and to increase the child’s capacity to experience and sustain positive emotions, and better manage and regulate negative emotions. These skills have been called “emotion learning skills.” Variation in the parent’s capacity for emotion learning is hypothesized to mediate the child’s response to treatment.

A small RCT of PCIT-ED compared to a parent group education control condition was conducted for the purpose of demonstrating feasibility. Despite the small sample size and limited power, significant improvements were found in child emotion recognition (based on direct testing of the child), child executive functioning-emotion control (rated by the parent), and parenting stress in the PCIT-ED group as compared to those in an education control group.<sup>70</sup> While significant decreases in depression severity were evident in both groups, only the caregivers who received PCIT-ED had significant decreases in their own depression scores (however this did not reach significance when groups were compared). This is of particular interest given the powerful role of parental depression on child outcomes overall and the possibility of a virtuous cycle in which improvement in the child’s depression



results in improvement in parental depression. Plans to conduct a large-scale RCT of this treatment compared to a waitlist control are now in progress.

### **Treating the Parent: Effects on the Young Child**

Several studies have suggested that treatment of the depressed mother results in amelioration of depression in the child offspring.<sup>71</sup> Other investigations fail to find immediate gains after maternal treatment, but detect improvements in child symptoms at 6 and 12 months after remission.<sup>72</sup> In a comprehensive review of this literature, Gunlicks and Weissman<sup>73</sup> suggest that while improvements in older children can be detected with effective parental depression treatment, effects on infants and toddlers are less evident. Murray *et al.*<sup>74</sup> conducted a large-scale investigation of the effects of maternal depression treatment on infants and toddlers, and demonstrated little effect of the intervention on child outcomes. In a study that builds on and extends the Murray study, Forman *et al.*<sup>75</sup> concluded that while treatment of the mother's depression may be effective, it is insufficient for improving socio-emotional and parent-child relationship outcomes in very young children. While these studies do not directly inform the effects of parental treatment of preschool aged children, an area that appears to be a gap in the literature, they suggest that treatment of the young child directly may be necessary for achieving sustained developmental change. This stands in contrast to the findings for preventing anxiety disorders (reviewed above), in which parenting interventions alone appear to be quite effective in young child populations. However, future studies that directly investigate the effects of parental treatment for depression on outcomes in the preschool child are now needed to directly inform this issue.

### **Psychopharmacologic Treatments of Early Childhood Depression and Anxiety Disorders**

As discussed above, pharmacological interventions are not recommended as the first line of treatment for either depression or anxiety disorders in preschool-age children. This is largely because these agents have not yet undergone the needed empirical testing in preschool-age subjects and their efficacy, safety, and effects on growth and development have not been properly assessed and remain unknown. Consistent with this, there is currently no psychopharmacologic agent that is Food and Drug Administration (FDA)-approved for the treatment of depression or anxiety in preschool children (<6 years of age). Despite this fact, pharmacoepidemiological studies suggest that antidepressants and, more recently, antipsychotics are being prescribed to preschool children with depressive disorders.<sup>76,77</sup> While these data suggest that depressive symptoms are being detected in clinical settings, which is a positive development, there is concern that these treatments are being used as first-line interventions instead of the safer and better tested psychotherapeutic options reviewed above. One probable force in these prescribing trends is likely lack of access to the appropriate psychotherapeutic services, a serious and solvable public health problem that should be the focus of the attention of policy makers.

### **Case Series and Individual Reports of Psychopharmacologic Treatments**

While case series do not provide sufficient evidence to guide treatment, they are included here as they represent the only available information in this domain. A few small studies have been conducted investigating the tolerability and efficacy of the selective serotonin reuptake inhibitor (SSRI), fluoxetine, in preschool-aged children with anxiety disorders. One study used a retrospective chart review to investigate fluoxetine for the treatment of preschool anxiety and/or depressive disorders.<sup>78</sup> Another small open trial treated N=6 preschoolers with OCD with fluoxetine.<sup>79</sup> While efficacy was noted in a sub-set of patients, high rates of adverse events were reported in both investigations (28% in chart review), with the most common being behavioral activation (21% in chart review study). Adverse events

resulted in discontinuation in 18% of subjects in the chart review. Developmental differences in neurotransmitter systems targeted by SSRI medications and developmental differences in the metabolism of these drugs have been cited as likely contributors to the higher rates of adverse events seen.<sup>80,81</sup> Based on these high rates of adverse events in combination with the lack of controlled testing of the efficacy and safety of these agents in depressive and anxiety disorders in preschoolers, they should be used only as a last resort in the case of severe and impairing symptoms when all other available treatments have failed.

## Summary

In this paper, empirical studies of treatments for anxiety and depressive disorders arising during the preschool period of development are reviewed. Evident from this comprehensive literature review is that there is a clear empirical foundation for the diagnosis of depression in preschool populations and a developing data base to inform the diagnosis of preschool anxiety disorders. However, to date, there is a paucity of adequately powered and controlled studies of treatments for these disorders, and an even smaller database to inform the treatment of preschool depression. In both anxiety and depressive domains, promising data from small RCTs are available to suggest that developmentally adjusted forms of CBT and/or PCIT are acceptable and appear effective. For the treatment of a variety of anxiety disorders developmentally appropriate forms of both CBT and PCIT are available. While there is one small RCT of an adapted and expanded form of PCIT (PCIT-ED) for preschool depression, treatments for depression remain underexplored. The available psychotherapy studies are small and few in number, but given their overall safety, they provide a significantly stronger database to guide treatment than any available data on psychopharmacologic treatments for these disorders. However, larger scale RCTs are now needed to confirm efficacy and to estimate effect sizes and mediators and moderators of treatment effects.

Based on this review, it is clear that several available age-adjusted psychotherapies should be tried as the first line of treatment for depression and anxiety among preschoolers. Available case series suggest that pharmacologic interventions may be useful in forms of OCD, but at least one study suggests this should be pursued in combination with CBT. Only when adequate trials of all available psychotherapeutic treatments fail should psychopharmacologic options even be considered only in cases of severe and impairing forms of anxiety and depression in the preschool child. One challenge likely facing clinicians, is the lack of availability of these psychotherapeutic treatments in many communities. While this remains a significant public health problem that must be addressed, it does not justify the use of medications as a substitute for appropriate psychotherapeutic treatment. Clinicians well versed in forms of CBT for older children may find the age-adapted forms relatively easy to learn and utilize.

Despite the small available database of treatments for preschool anxiety and depression all available studies to date have been limited by small samples sizes (Table 1). These small samples make it impossible to accurately estimate effect sizes or to investigate mediators and moderators of change, key questions to evaluate the utility and application of a treatment.<sup>82</sup> Based on this, it is clear that large-scale adequately powered trials of these treatments are now needed. This is of critical importance for the treatment of young children, but may also be of broader significance to the field, as earlier intervention during a time of greater developmental change holds promise to be an area where larger and more enduring treatment effects are possible.

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Table 1

Treatment Studies of Psychotherapies for Preschool Depression and Anxiety

Author	Diagnostic Category	RCT (Y/N)	Sample Size (N)	Form of Treatment	Outcome Measure	Results	Follow-up Data (Y/N)
Hirshfeld-Becker <i>et al.</i> (2010) <sup>38</sup>	Anxiety disorders	Y	N = 64	Parent-child CBT	Structured diagnostic interviews with parents (K-SADS-E) supplemented by the avoidant disorder module from the Diagnostic Interview for Children and Adolescents, Parent Version; laboratory assessments of behavioral inhibition; parent ratings of coping	Active tx resulted in significantly greater decrease in anxiety disorders, increase in coping, and improvements on the CGI-I	Y—gains maintained at 1-year follow-up
Rapee <i>et al.</i> (2010) <sup>41</sup>	High risk for anxiety disorders	Y	N = 146	A 6-session, group-based parent intervention	The Anxiety Disorders Interview Schedule for Children and Parents IV—Parent Version; the Spence Children's Anxiety Scale; and the Temperament Assessment Battery for Children—Revised	Active tx showed lower frequency and severity of anxiety disorders and symptoms	Y—Diagnostic interviews and questionnaire measures were repeated at 12, 24, and 36 months;
Cohen and Mannarino (1996) <sup>48</sup>	PTSD related to sexual abuse	Y	N = 67	CBT adapted for sexually abused preschool children (CBT-SAP)	CBCL, Child Sexual Behavior Inventory, Weekly Behavior Report, Preschool Symptom Self-Report	Active tx had highly significant symptomatic improvement on most outcome measures vs. control	Y—improvements sustained at 6- and 12-month follow-ups
Deblinger <i>et al.</i> (2001) <sup>49</sup>	PTSD related to sexual abuse	Y	N = 54	CBT groups	CBCL, SLC-90 and other PTSD specific measures	Mothers in active tx showed improved parenting and children demonstrated greater knowledge of body safety skills vs. control	Y—gains sustained at 3 month follow-up
Scheeringa <i>et al.</i> (2011) <sup>50</sup>	PTSD	Y	N = 64	Trauma-focused CBT (TF-CBT)	Structured parent-report psychiatric interview (PAPA) and the Adverse Events Checklist (AEC)	Active tx showed significant improvements in symptoms of PTSD	Y—gains sustained at 6 months
Pincus <i>et al.</i> (2008) <sup>54</sup>	Separation anxiety disorder (SAD)	Y	N = 34 (to date)	Modified PCIT with Bravery-Directed Interaction (BDI)	Diagnostic interviews with the parent and child, parent self-report instruments, child self-report instruments, and behavioral observation of parent-child interaction	Active tx showed improvements in SAD severity vs. control group	Y—gains were maintained at 3-, 6-, and 12-month follow-ups
Oerbeck <i>et al.</i> (2012) <sup>55</sup>	Selective mutism (SM)	N	N = 7	A home- and- kindergarten-based intervention	Teacher-reported School Speech Questionnaire (SSQ), CGI	Six children spoke in all kindergarten settings after a	Y—results maintained at 1-year follow-up

Author	Diagnostic Category	RCT (Y/N)	Sample Size (N)	Form of Treatment	Outcome Measure	Results	Follow-up Data (Y/N)
Freeman <i>et al.</i> (2008) <sup>57</sup>	OCD	Y	N = 42	12 sessions of family-based CBT	Scores on the Children's Yale-Brown Obsessive Compulsive Scale and CGI-I	Tx group showed higher rates of remission and large effect sizes vs. controls	N
Ginsburg <i>et al.</i> (2011) <sup>58</sup>	OCD	N	N = 7	A 12-week family-based intervention	Weekly ratings of OC symptoms and family accommodation, measures assessing the severity and impact of OC symptoms and child and family functioning	Active tx resulted in reduction in OC symptoms (6 of 7 responders on CGI-I) and improvements in parental accommodation of child OC behaviors	Y—gains sustained at 1-month follow-up
Luby <i>et al.</i> (2012) <sup>70</sup>	Preschool depression	Y	N = 54	Modified PCIT with Emotion Development (ED) (PCIT-ED)	PAPA, BRIEF-P, EMODIFF	Active tx was significantly more effective on executive functioning and emotion recognition skills vs. control.	N

Note: BRIEF = Behavior Rating Inventory of Executive Function-Preschool Version; CBCL = Child Behavior Checklist; CBT = cognitive behavioral therapy; CGI = Clinical Global Impression Scale; CGI-I = Clinical Global Impressions-Improvement; EMODIFF = Penn Emotion Differentiation Test; K-SADS-E = Schedule for Affective Disorder and Schizophrenia for School-Age Children; OCD = obsessive compulsive disorder; PAPA = Preschool Age Psychiatric Assessment; PCIT = Parent-child interaction therapy; PTSD = posttraumatic stress disorder; RCT = randomized controlled trial; tx = treatment.