

NIEER Policy Paper

Challenging Behaviors: Preschool as a Contributing or Ameliorating Factor?

By

Lisa A. McCabe and Ellen Frede

January 2007

Highly publicized research suggests troubling trends in preschooler's challenging behaviors. In one such study, the number of children removed from preschool classrooms for behavioral problems was found to be 3 times higher in preschool settings than in K through 12 education<sup>1</sup>. Another large scale, prospective study of non-maternal child care found links between early non-maternal care and aggressive behaviors in preschool<sup>2</sup>. Finally, recent research documents teachers' concerns about children not arriving at school ready to learn<sup>3</sup>.

Such examples of widely publicized research in recent years would suggest dire consequences for young children who experience non-maternal care and education in the early years of life. But what is the evidence for young children's challenging behaviors in relation to their preschool experience? Is preschool experience related to increased challenging behaviors, such as aggression, in young children? Or can preschool actually be a positive experience that leads to fewer challenging behaviors? This policy report reviews the research evidence to answer these questions. It also reviews research-proven approaches that reduce challenging behaviors. Finally, policy recommendations are made that can lead to better behavioral outcomes for children in preschool settings.

### **What We Know**

- A challenging behavior is any repeated pattern of behavior that interferes with learning or engagement in social interactions; behaviors that are not responsive to the use of developmentally appropriate guidance procedures; behaviors that include, but are not limited to, prolonged tantrums, physical and verbal aggression, disruptive vocal and motor behavior (e.g., screaming), property destruction, self-injury, noncompliance, and withdrawal<sup>4</sup>.

- Challenging behaviors during the preschool years are one of the strongest predictors of later, more serious problematic behaviors including delinquency, aggression, antisocial behavior, and substance abuse.
- Challenging behaviors are associated with multiple risk factors (including family poverty, negative parenting practices), and often co-exist with other developmental challenges such as language delays.
- Participation in early care and education settings is sometimes linked to higher rates of challenging behaviors, especially in programs of lower quality that do not specifically address the social development needs of young children. These effects tend to peak during the preschool years and are not as prevalent at younger or older ages.
- When preschool is high quality and includes an emphasis on children's social development, it can serve as a long term protective factor for children at-risk for the development of challenging behaviors.
- A variety of evidence-based social development curricula are available for use in early childhood programs. The curricula that are most effective seem to be those that are comprehensive and include direct supports for the teachers who are implementing them.

### **Prevalence, development and trajectory of aggression**

A growing body of research points to links between challenging behaviors in early childhood and later negative developmental and social outcomes. In particular, studies have shown that early behavior problems are associated with delinquency<sup>5</sup>, persistent aggression and antisocial behavior<sup>6</sup>, and substance abuse<sup>7</sup>. Yet, it is important to note that not all children who express problematic behaviors, especially aggression, in early childhood maintain these behaviors over time<sup>8</sup>. Research has recently begun to investigate the possible trajectories of

early onset aggression in order to distinguish between a normative developmental peak in aggression (typically in the toddler and preschool years) from a “fledgling psychopath.”<sup>9</sup> In work with 344 children aged 2 through 5 (and followed for between 42 and 48 months), researchers found that although some children outgrew their disruptive disorder, many did not, thus pointing to the stability of early onset diagnoses<sup>10</sup>. Similarly, work with a group of low-income mother-child dyads found moderate stability in aggression for boys and non-compliance for girls between 1 and 5 years of age<sup>11</sup>. Finally, work from the large-scale NICHD Study of Early Child Care identified five typical trajectories of aggressive behavior. Three of these trajectories involved moderate to high levels of aggression at some point, but only a small portion of children (3% of the participants) followed a path of high and sustained level of aggression from age 24 months to third grade<sup>12</sup>.

Because of the potentially serious consequences of behavior problems in young children, both for the individual as well as the larger society, researchers have also begun to examine the precursors of the development of challenging behaviors. This literature<sup>1</sup> has documented key risk factors for children’s challenging behaviors including poor prenatal environment (e.g. exposure to drugs/alcohol, maternal malnutrition)<sup>13</sup>, family poverty<sup>14</sup>, and negative parenting practices (e.g. harsh discipline, maternal insensitivity)<sup>15</sup>. Research has also revealed that behavioral challenges frequently co-occur in the presence of language delays<sup>16</sup> and often comprise multiple symptoms from several clinical diagnoses including Attention Deficit Hyperactivity Disorder, Oppositional Defiant Disorder, and Conduct Disorder<sup>17</sup>.

### **Child Care experience and aggression—the evidence for a link**

---

<sup>1</sup> See Qi, C. H. & Kaiser, A. P. (2003) Behavior problems of preschool children from low-income families: Review of the literature. *Topics in Early Childhood Special Education* 23(4), 188-216 for a review.

Since the “day care wars” of the 70s and 80s<sup>18</sup>, questions have arisen about the link between participation in non-maternal early care and education settings and challenging behaviors. Although numerous studies have examined the child care-challenging behavior relationship<sup>19</sup>, many of them were small scale, failed to take into account family background factors or quality of care, and offered conflicting findings. In part to address this long standing debate about child care and challenging behaviors, one of the largest child care investigations, the NICHD Study of Early Child Care, was begun in the early 90s<sup>20</sup>. This prospective study of 1,300 children from 10 sites, who were followed from birth through grade school, gathered child care data at multiple time points over the first 5 years of life. Results indicate that 4.5 year old children with more child care experience demonstrated higher levels of externalizing behavior problems (e.g. aggression, disobedience) than did children who spent fewer hours in non-maternal care. This relationship held even in higher quality child care settings. However, some have questioned the generalizability of this finding in part because the variability in quality in this study was not large enough to truly detect meaningful differences<sup>21</sup>. It is also important to note that the higher levels of externalizing behaviors seen at age 54 months were not evident when the same children were younger (age 2 and 3<sup>22</sup>) or once the children were in third grade<sup>23</sup>.

Evidence for a possible link between preschool experience and challenging behaviors also comes from work examining cortisol (a hormone that serves as a measure of stress) rates in children in child care. A review of 9 studies about cortisol and child care found a rise in cortisol in children who are in group care settings (even high quality settings) when compared to children in home care<sup>24</sup>. This finding may be related to the pressures of being in a group setting and dealing with “social threats” for many hours each day. Although it is not yet clear whether these elevated cortisol levels put children at risk for later health problems (the rise may not be

significant enough to cause illnesses known to be related to stress) or whether they relate to significant behavioral challenges, they do suggest that when behavior problems are detected in preschool settings, they may be due, at least in part, to children's difficulty coping with social pressures in a group setting for extended periods of time.

Findings from a longitudinal demonstration program for preschool children also suggest that participation in preschool, even a high quality program, can be related to problematic behaviors in children. In the Abecedarian program, which involved a randomized trial of a comprehensive child care program for African American children from birth through age five, researchers documented an increase in behavior problems in program participants once they reached elementary school when compared to the control children<sup>25</sup>. In response, developers revised the curriculum in subsequent years to include more of a focus on social skill development (in addition to the original emphasis on academic growth) and support for teachers in this developmental area. Once these changes were implemented, the increase in challenging behaviors among program children was not found.

Finally, a recent, large-scale investigation examined a troubling practice with children exhibiting challenging behaviors in preschool settings. In a sample of nearly 4000 preschool classrooms (N=3,898) from across the country (40 states), 10.4% of preschool teachers reported that at least 1 child had been removed from their classroom because of behavior problems in the past 12 months<sup>26</sup>. This high rate (more than 3 times higher than the rate for Kindergarten-grade 12 students) raises concerns about children's challenging behaviors in the preschool setting, and leads to questions of how to improve social skills teaching practices as was done in the Abecedarian Project.

**Preschool experience and aggression—the evidence for preschool as an ameliorating factor**

Although the previous section provides some evidence backing the claim that preschool participation may be related to the development of challenging behaviors, there is also a wealth of research to suggest the opposite; that is, that preschool experience can actually serve as an ameliorating factor for children at-risk for developing challenging behaviors. Some of the most compelling pieces of evidence come from a variety of longitudinal evaluations of high quality early childhood education programs for high-risk children. For example, in the High/Scope Perry Preschool Program<sup>27</sup>, at-risk (e.g. low levels of parent education, low socioeconomic status, low IQ scores), African American children were randomly assigned to either receive the program or serve in the control group. Those in the program group participated in an intensive preschool program for 2 ½ hours, 5 days a week during the school year beginning at either age 3 or 4. The program was taught by highly qualified teachers and also included home visits by teachers each week, as well as parent group meetings. The children in this program evaluation have now been followed through age 40 and one of the strongest findings has been a reduction in adolescent and adult crime rates for boys who participated in the preschool program when compared to the control group. These effects are striking not only because they have endured over the lifetime of the children, but because of the significant community economic savings that accompany lower crime rates<sup>28</sup>.

Similar benefits from early preschool experience are documented by the longitudinal study of the Chicago Child-Parent Centers<sup>29</sup>. This program, which offers preschool and kindergarten programs, continued intervention in early elementary school, and family support services for low-income children, was implemented with 1,500 children. Long term follow-up data with program and control children show that program participants demonstrated lower adolescent crime rates and better social adjustment (in addition to cognitive gains)<sup>30</sup>.

In recent years, large-scale and comprehensive research has been conducted on Head Start (one of the nation's oldest early intervention programs) and Early Head Start (a more recent expansion of the Head Start program to children from birth through age 3). Results from these investigations indicate that these early education programs are effective at addressing the social needs of very young children. In particular, the Family and Child Experiences Survey (FACES) study showed improvement in the challenging behaviors of Head Start children over the program year<sup>31</sup>. Similarly, the national evaluation of the Early Head Start<sup>32</sup> program (involving a random assignment of 3,000 children and families to program or control groups) shows that participants in Early Head Start show less aggression at age 3 than control group children<sup>33</sup>.

Finally, evidence for the potential ameliorating effects of participation in early care and education on the development of challenging behaviors also comes from large studies outside the United States. For example, in a large-scale study of nearly 3,500 Canadian 2- and 3-year-olds, researchers found that aggression was significantly higher in children from high risk families who are *not* in child care when compared to the child care group<sup>34</sup>. These data suggest that child care may be a protective factor for children in high-risk families (e.g. low socioeconomic status, poor family functioning) in that it dilutes the exposure to a high risk environment and increases opportunities for learning not available at home.

### **Evidence-based preschool social skills curricula**

A number of preschool social skills curricula based on research and with evidence of their efficacy are available for use in early childhood programs<sup>2</sup>. Below is a sampling of these

---

<sup>2</sup> Several early childhood curricula with an emphasis on the development of social and emotional skills are popular in early education programs. These include Kaiser and Rasminsky's WEAVAS approach, Hyson's Emotional Development curriculum, Bailey's Conscious Discipline, and Diane Trister Dodge and colleagues' Creative Curriculum. To date, these curricula have not been formally studied for their effectiveness, but do show promise as strategies for addressing children's social and emotional development.

programs and the evidence for their effectiveness. For more information about evidence-based curricula, see reviews by Joseph and Strain 2003 and Bryant et al., 1999<sup>35</sup>.

*Incredible Years: Teacher Training Program* (Webster-Stratton<sup>36</sup>)

The Incredible Years Teacher Training Program<sup>3</sup> involves 36 hours of training (6 monthly 1 day workshops) that focuses on positive management and discipline strategies, and promoting social competence in the classroom. In an evaluation of the program<sup>37</sup>, 14 Head Start centers (61 teachers in 34 classrooms) were randomly assigned to the Incredible Years Program (for parents, teachers, and family services workers) or the control group. Results showed that experimental children demonstrated significantly fewer conduct problems at school than control children. In addition, experimental teachers showed significantly better classroom management skills than control teachers. Similar benefits were documented in an evaluation of the Incredible Years training programs with 159 families of 4- to 8-year-old children<sup>38</sup>. In this study, children in Incredible Years classrooms showed lower rates of noncompliance and aggression than children in classrooms without teacher training.

*Positive Behavior Support*

The positive behavior support is one of the most widely used and well-documented techniques for encouraging prosocial skill development in young children<sup>39</sup>. It typically uses functional assessment (a process for gathering information about the context of the child's challenging behaviors) to maximize its effectiveness and efficiency for meeting the needs of individual children. It is comprised of multiple components including: strategies for teaching a child new skills through guidance, prompting, and reinforcement in naturalistic settings; modifications of the physical and/or social environment to decrease the triggers of challenging

---

<sup>3</sup> The Incredible Years Program also includes a parent training component (called the Basic Incredible Years Parenting Program) that uses parent group meetings to cover topics similar to those in the teacher training.

behaviors; and positive reinforcement (see side bar about the use of “Good Job” in early childhood education) to increase and maintain appropriate behavior and enforce consequences for challenging behaviors. The usefulness of this approach has been documented in a variety of naturalistic settings including homes and classrooms<sup>40</sup>, but rarely with a preschool population. However, preliminary evidence with preschool children shows promise. For example, in one study of Positive Behavior Support for children in community preschool programs, researchers documented its effectiveness for reducing problematic behaviors with two female children identified by teachers as in need of additional support<sup>41</sup>.

#### The “Good Job!” controversy

In recent years, the use of praise in teaching young children has been called into question. Kohn<sup>42</sup> specifically lists 5 reasons why praise may not be developmentally appropriate for young children: 1. It represents manipulation of children in order to maximize adult convenience; 2. It creates “praise junkies”; 3. It steals the child’s pleasure by telling him or her how to feel; 4. It results in less interest, not more; 5. It reduces achievement. The adaptation of these ideas has lead to many early childhood teachers changing the way they interact with young children, including strategies for dealing with challenging behaviors. However, the switch away from “good job” language is not without its criticisms from those in the positive behavior support community. These behavioral intervention advocates contend that Kohn’s arguments misrepresent the positive behavior support field, fail to account for years of research supporting positive behavior techniques when used appropriately, and that he presents non-validated alternative strategies<sup>43</sup>. What both sides of this debate seem to have in common, however, is the need for adults to encourage young children’s development in supportive and meaningful ways.

*Second Step (Committee For Children<sup>44</sup>)*

The Second Step curriculum is a universal intervention program designed to teach children in preschool through middle school empathy, impulse control, and social problem solving skills. Teachers are trained to use large photograph cards of children in various social situations as a basis for teacher modeling and children's role playing. These activities are designed to introduce concepts and allow children to practice new skills. A parent component, where parents are encouraged to reinforce Second Step concepts at home, is also included. Although the curriculum was used as part of a larger Preschool Behavior Project, results from this study have not yet been published<sup>45</sup>. However, research evidence of the Second Step curriculum with second and third grade school children suggests that children in participating classrooms show a decrease in observed aggression and an increase in neutral/prosocial skills. There were no differences in parent or teacher ratings of these behaviors<sup>46</sup>.

*Self Determination Intervention (Serna & Nielsen<sup>47</sup>)*

The Self Determination program uses a story and song format to teach preschool children direction following, sharing, and problem solving. The curriculum was implemented by a master's level university interventionist (with assistance from the teacher) with 53 children in 3 Head Start classrooms over a 12 week period<sup>48</sup>. Two 3-hours sessions were taught each week and were reinforced by teachers in the natural classroom environment and by parents who participated in three training sessions (one for each major skill in the curriculum). Thirty-one children in two other classrooms served as a comparison group. Results from pre- and post-tests showed a significant decrease in behavior problems and an increase in adaptive skills in children who participated in the program.

*Social Emotional Intervention for At-Risk 4-Year-Olds<sup>49</sup> (Denham & Burton)*

In this intervention for preschoolers, teachers are trained to deliver a multi-component program that involves relationship building (between the teachers and children), teaching children emotional knowledge and strategies to control negative feelings, and teaching children interpersonal cognitive problem solving skills using the evidence-based I Can Problem Solve program<sup>50</sup>. The program was implemented over a 32 week period with 70 children in 7 child care classrooms. An additional 60 children from the same programs, but different classrooms served as a comparison group. Results showed that children in the intervention classrooms showed decreases in negative emotion, initiated more positive peer activity, and improved socially (as judged by their teachers) compared to non-intervention children.

### **Important components across curricula**

The previous section gives a sense of the diversity of curricula available for addressing social development in early childhood. Research comparing the effectiveness of one curriculum with another is rare. However, studies to date do suggest some commonalities among the many approaches to addressing children's social needs. First, comprehensive curricula that embed social skills within a larger curriculum appear to be a particularly effective approach for the general preschool population. This approach and its success have been documented in Head Start research showing that programs using integrated curricula (in particular the High/Scope or Creative Curriculum) are higher in quality and the children within these classrooms show more gains in social skills when compared to children in programs not using these comprehensive curricula<sup>51</sup>. Similarly, a longitudinal evaluation of 3 curricular approaches (High/Scope [emphasis on cognitive and social problem-solving with a balance between teacher-directed and child-initiated activities], Direct Instruction [teacher lead focus on academic skills], and Traditional Nursery School [emphasis on free play]) showed that long-term social outcomes for

children in the Direct Instruction group, where an emphasis on social development was lacking, were poor compared to the other two<sup>52</sup>. In particular, children who experienced Direct Instruction demonstrated more behavior problems in high school, and higher rates of being suspended from work or for being arrested by age 23. Finally, research also suggests benefits to programs that include multiple components (e.g. focus on all domains), focus on the quality of children's problem solving responses (as opposed to the quantity of the solutions they generate<sup>53</sup>, and involve families as well as early childhood educators<sup>54</sup>.

High quality preschool programs are critical to meeting the general needs of all preschool children; however, more targeted approaches must be geared towards meeting the needs of children who struggle with behavioral challenges. Fox and Lentini's "Teaching Pyramid<sup>55</sup>" is useful in this context. In this approach, the base of the pyramid suggests typical good practice in the area of social and emotional development such as making expectations clear and providing a balance between active and quiet times and teacher directed and child initiated activities. The next level up ("secondary level") focuses specifically on the needs of at-risk children and includes techniques such as intentional teaching of social problem-solving strategies and other pro-social skills. Finally, the top of the pyramid ("tertiary level") includes more intensive procedures involving family members and a team of behavior experts that are targeted towards individual children with persistent behavior challenges. The point is that there is a need for both general and more targeted strategies, depending on the needs of the individual children in any early education setting.

Related to this differentiated approach is the need for appropriate developmental screening. It is critical to identify at-risk children early so that targeted approaches can be implemented early in a child's life. As Richard Tremblay, a noted researcher in the area of

childhood aggression, points out "...most children learn alternatives to physical aggression during their preschool years. Therefore, this period of childhood is probably the best window of opportunity for helping children at risk of becoming chronic physical aggressors to learn to regulate their comportment" (p. 4)<sup>56</sup>. Recent work on early identification techniques is promising and includes multiple gating procedures to identify children most at-risk<sup>57</sup>. However, more work is needed on early identification techniques to better understand the appropriateness of specific instruments for particular populations<sup>58</sup>.

Technical support for teachers in implementing any strategy is important. In fact, some have suggested that teachers in early childhood education struggle to deal with behavioral challenges in part because of insufficient training that does not include on-going support from supervisors and interventionists<sup>59</sup>. Evidence from small-scale studies supports this claim. For example, in a study of 4 children with autism, rates of positive social interaction increased when teachers received technical assistance and feedback in implementing naturalistic strategies for increasing social interactions<sup>60</sup>. The increase was not as apparent when teachers received the training, but not individualized support for implementing the strategies in the classroom. Similarly, research has documented greater changes in children's positive social behavior in a Head Start classroom where the teacher received a social skills curriculum (McGinnis and Goldstein's Skillstreaming program<sup>61</sup>) along with direct consultation about program implementation when compared to a teacher who only received the curriculum materials, but no curriculum instruction.<sup>62</sup> More generally, even having access to a mental health consultant can be useful for teachers, as demonstrated by the lower expulsion rates in classrooms where teachers received from this support<sup>63</sup>.

## **Policy Recommendations**

1. High quality preschool should be provided so all children have the opportunity to develop positive social skills.
2. Teacher training and technical support in the area of children's social and emotional development and classroom management should be provided.
3. No preschooler should be expelled from his or her early childhood program. This action does not serve the child or family well and ultimately does a disservice to society in that children with challenging behaviors left untreated are likely to become a burden to society in other ways (e.g. school drop out, criminal behavior). With the right supports for teachers, this ultimate form of "discipline" could be prevented.
4. Only curriculum approaches that are derived from research or, ideally, that have been empirically validated should be implemented. For children at risk, targeted interventions should involve multiple levels (parent, child, classroom). For low-risk children, universal, classroom-based curricula should include social skills training in addition to an academic focus.
5. Developmentally appropriate screening for early identification is necessary. This practice insures that primary prevention and intervention can occur at younger ages when interventions are likely to have more of an impact. Provide funding for development of screening instruments and for their use in classrooms.

### **Concluding Remarks**

It is not that the preschool context per se that is "good" or "bad" when it comes to children's challenging behaviors. Just as there is good and not-so-good parenting, there is good and not-so-good early childhood care and education. What is important is that the early childhood education experience be of high quality. For challenging behaviors, this means paying

special attention to the social needs of children spending long hours in the presence of a group of peers. Child care that does not adequately address the social needs of young children runs the risk of contributing to the development and expression of challenging behaviors. Any curriculum implemented in an early childhood education setting needs to include, along with a cognitive and academic focus, an emphasis on the development of social and emotional skills in order to best meet the comprehensive needs of preschoolers and prepare them to be lifelong learners and productive adults.

---

<sup>1</sup>Gilliam, W. (2004). Prekindergarteners Left Behind: Expulsion Rates in State prekindergarten Systems. Available from [www.fcd-us.org/PDFs/NationalPreKExpulsionPaper03.02\\_new.pdf](http://www.fcd-us.org/PDFs/NationalPreKExpulsionPaper03.02_new.pdf). Retrieved November 1, 2006.

<sup>2</sup>National Institute of Child Health and Human Development Early Child Care Research Network. (2003). Does amount of time spent in child care predict socioemotional adjustment during the transition to kindergarten? *Child Development, 74*(4), 976-1005.

<sup>3</sup>Rimm-Kaufman, S.E, Pianta, R.C, & Cox, M.J. (2000). Teachers' judgments of problems in the transition to kindergarten. *Early Childhood Research Quarterly, 15*(2), 147-166.

<sup>4</sup>Fox, L. & Lentini, R. H. (2006). "You got it!" Teaching social and emotional skills. *Young Children, 61*(6), 36-42.

<sup>5</sup>Krueger, R.F., Caspi, A., Moffitt, T., White, J., & Stouthamer-Loeber, M. (1996). Delay of gratification, psychopathology, and personality: Is low self-control specific to externalizing problems? *Journal of Personality, 64*(1), 107-129.; Olson, S. L., Schilling, E. M., & Bates, J. E. (1999). Measurement of impulsivity: Construct coherence, longitudinal stability, and relationship with externalizing problems in middle childhood and adolescence. *Journal of Abnormal Child Psychology, 27*, 151-165.

<sup>6</sup>Kochanska, G. & Knaack, A. (2003). Effortful control as a personality characteristic of young children: Antecedents, correlates, and consequences. *Journal of Personality, 71*(6), 1087-1112; Newman, D. L., Caspi, A., Moffitt, T.E., & Silva, P.A. (1997). Antecedents of adult interpersonal functioning: Effects of individual difference in age 3 temperament. *Developmental Psychology, 33*(2), 206-217; LaCourse, E., Côté, S., Nagin, D.S., Vitaro, F., Brendgen, M., & Tremblay, R.E. (2002). A longitudinal-experimental approach to testing theories of antisocial behavior development. *Development and Psychopathology, 14*(4), 909-924.

<sup>7</sup>Block, J., Block, J.H., & Keyes, S. (1988). Longitudinally foretelling drug usage in adolescence: Early childhood personality and environmental precursors. *Child Development, 59*, 336-355.

<sup>8</sup>Campbell, S.B., Spieker, S., Burchinal, M., Poe, M.D., & the National Institute of Child Health and Human Development Early Child Care Research Network. (2006). Trajectories of aggression from toddlerhood to age 9 predict academic and social functioning through age 12. *Journal of Child Psychology and Psychiatry, 47*(8), 791-800; Sonuga-Barke, E.J.S., Auerbach, J., Campbell, S.B., Daley, D., & Thompson, M. (2005). Varieties of preschool hyperactivity: Multiple pathways from risk to disorder. *Developmental Science, 8*(2), 141-150.

<sup>9</sup>Gresham, F.M., Lane, K.L., & Lambros, K.M., (2000). Comorbidity of conduct problems and ADHD: Identification of "Fledgling Psychopaths". *Journal of Emotional & Behavioral Disorders, 8*(2), 83-94; Lynam, D. (1996). Early identification of chronic offenders: Who is the fledgling psychopath? *Psychological Bulletin, 120*, 209-234.

<sup>10</sup>Lavigne, J.V., Arend, R., Rosenbaum, D., Binns, H.J., Christoffel, K.K., & Gibbons, R. D. (1998). Psychiatric disorders with onset in the preschool years: I. Stability of diagnoses. *Journal of the American Academy of Child and Adolescent Psychiatry, 37*(12), 1246-1254.

- 
- <sup>11</sup> Keenan, K., Shaw, D., Delliquadri, E., Giovannelli, J., & Walsh, B. (1998). Evidence for the continuity of early problem behaviors: Application of a developmental model. *Journal of Abnormal Child Psychology*, 26(6), 441-454.
- <sup>12</sup> National Institute of Child Health and Human Development Early Child Care Research Network. (2004). Trajectories of physical aggression from toddlerhood to middle childhood. In W.F. Overton (Series Editor), *Monographs of the Society for Research in Child Development* 69(4, Serial No. 278). Boston, MA: Blackwell Publishing.
- <sup>13</sup> Ishikawa, S. & Raine, A. (2003). Obstetric complications and aggression. In Tremblay, R.E., Barr, R.G., Peters, R.De.V., (Eds.) *Encyclopedia on Early Childhood Development* [online]. Montreal, Quebec: Centre of Excellence for Early Childhood Development; 2003: 1-6. Available at <http://www.excellence-earlychildhood.ca/documents/IshikawaRaineANGxp.pdf>. Accessed November 1, 2006.
- <sup>14</sup> Kaiser, A. P., Hancock, T. B., Cai, X., Foster, E.M., & Hester, P.P. (2000). Parent-reported behavioral problems and language delays in boys and girls enrolled in Head Start classrooms. *Behavioral Disorders*, 26, 26-41; Kupersmidt, J.B., Bryant, D., & Willoughby, M.T. (2000). Prevalence of aggressive behaviors among preschoolers in Head Start and community child care programs. *Behavioral Disorders*, 26, 42-52.
- <sup>15</sup> National Institute of Child Health and Human Development Early Child Care Research Network, 2004; Kingston, L. & Prior, M. (1995). The development of patterns of stable, transient, and school-age onset aggressive behavior in young children. *Journal of the American Academy of Child and Adolescent Psychiatry*, 34(3), 348-358; Lavigne, J. V., Arend, R., Rosenbaum, D., Binns, H.J., Christoffel, K.K., & Gibbons, R. D. (1998). Psychiatric disorders with onset in the preschool years: II. Correlates and predictors of stable case status. *Journal of the American Academy of Child and Adolescent Psychiatry*, 37(12), 1255-1261.
- <sup>16</sup> Kaiser et al., 2000.
- <sup>17</sup> Gresham et al., 2000.
- <sup>18</sup> Belsky, J. (1986). Infant day care: A cause for concern? *Zero to Three*, 6, 1-9; Clarke-Stewart, A. (1988). The effects of infant day care reconsidered: risks for parents, children, and researchers. *Early Childhood Research Quarterly*, 3, 293-318.
- <sup>19</sup> Baydar, N. & Brooks-Gunn, J. (1991). Effects of maternal employment and child care arrangements of preschoolers' cognitive and behavioral outcomes: Evidence from the children of the national longitudinal survey of youth. *Developmental Psychology*, 27, 932-945; Belsky, J. (1999). Quantity of nonmaternal care and boys' problem behavior/adjustment at ages 3 and 5: Exploring the mediating role of parenting. *Psychiatry*, 62, 1-20; Belsky, J. (2001). Developmental risks (still) associated with early child care. *Journal of Child Psychology and Psychiatry*, 42, 845-859; Field, T., Masi, W., Goldstein, S., Perry, S., & Park, S. (1988). Infant day care facilitates preschool social behavior. *Early Childhood Research Quarterly*, 3, 341-359; Prodromidis, M., Lamb, M., Sternberg, K., Hwang, C., & Broberg, A. (1995). Aggression and noncompliance among Swedish children in center-based care, family day care, and home care. *International Journal of Behavioral Development*, 18, 43-62.
- <sup>20</sup> Belsky, J. (2001). Emanuel Miller Lecture: Developmental risks (still) associated with early child care. *Journal of Child Psychology and Psychiatry*, 42(7), 845-859; National Institute of Child Health and Human Development Early Childcare Research Network, 2003.
- <sup>21</sup> Love, J.M., Harrison, L., Sagi-Schwartz, A., vanIJzendoorn, M.H., Ross, C., Ungerer, J.A., et al. (2003). Child care quality matters: How conclusions may vary with context. *Child Development*, 74(4), 1021-1033.
- <sup>22</sup> National Institute of Child Health and Human Development Early Childcare Research Network. (1998). Early child care and self-control, compliance, and problem behavior at twenty-four and thirty-six months. *Child Development*, 69(4), 1145-1170.
- <sup>23</sup> National Institute of Child Health and Human Development Early Child Care Research Network. (2005). Early child care and children's development in the primary grades: Follow-up results from the NICHD Study of Early Child Care. *American Educational Research Journal*, 42(3), 537-570.
- <sup>24</sup> Vermeer, H. J., & van IJzendoorn, M., H. (2006). Children's elevated cortisol levels at day care: A review and meta-analysis. *Early Childhood Research Quarterly*, 21, 390-401.
- <sup>25</sup> Haskins, R. (1985). Public school aggression among children with varying day-care experience. *Child Development*, 56(3), 689-703.
- <sup>26</sup> Gilliam, 2004.
- <sup>27</sup> Nores, M., Belfield, C.R., Barnett, W. S., & Schweinhart, L. (2005). Updating the economic impacts of the High/Scope Perry Preschool Program. *Educational Evaluation and Policy Analysis*, 27(3), 245-261; Schweinhart, L.J., Montie, J., Xiang, Z., Barnett, W.S., Belfield, C.R., & Nores, M. (2004). *Lifetime effects: The High/Scope Perry Preschool Study through age 40*. Monograph, [www.highscope.org](http://www.highscope.org).

- 
- <sup>28</sup> Nores et al., 2005.
- <sup>29</sup> Reynolds, A. J., Temple, J., Robertson, D., & Mann, E. (2001). Long-term effects of an early childhood intervention on educational achievement and juvenile arrest: A 15-year follow-up of low-income children in public schools. *JAMA: Journal of the American Medical Association*, 285(18), 2339-2346.
- <sup>30</sup> Reynolds, A. J., Temple, J., Robertson, D., & Mann, E. (2001). Long-term effects of an early childhood intervention on educational achievement and juvenile arrest: A 15-year follow-up of low-income children in public schools. *JAMA: Journal of the American Medical Association*, 285(18), 2339-2346.
- <sup>31</sup> Zill, N., Resnick, G., Sorongon, A., Kim, K., O'Donnell, K., et al. (2003). *A whole-child perspective on Head Start reform: Findings on children's cognitive and socio-emotional development from FACES 2000*. Presented at the Biennial Meeting of the Society for Research in Child Development, Tampa, FL.
- <sup>32</sup> Berlin, L.J., O'Neal, C.R., & Brooks-Gunn, J. (2003). Early childhood intervention research initiatives. In J. Brooks-Gunn, A. S. Fuligni, & L.J. Berlin (Eds.), *Early Child Development in the 21<sup>st</sup> Century* (pp. 65-89). New York: Teachers College Press; Brooks-Gunn, J., Berlin, L.J., Leventhal, T., & Fuligni, A. (2000). Depending on the kindness of strangers: Current national data initiatives and developmental research. *Child Development*, 71(1), 257-268.
- <sup>33</sup> Love, J. M., Kisker, E.E., Ross, C.M., Schochet, P.Z., Brooks-Gunn, J., et al. (2002). *Making a Difference in the Lives of Infants and Toddlers and Their Families: The Impacts of Early Head Start, Executive Summary*. Retrieved November 21, 2006 from [http://www.acf.hhs.gov/programs/opre/ehs/ehs\\_resrch/](http://www.acf.hhs.gov/programs/opre/ehs/ehs_resrch/)
- <sup>34</sup> Borge, A.I.H., Rutter, M., Côté, S., & Tremblay, R.E. (2004). Early childcare and physical aggression: Differentiating social selection and social causation. *Journal of Child Psychology and Psychiatry*, 45(2), 367-376.
- <sup>35</sup> Bryant, D., Vizzard, L.H., Willoughby, M., & Kupersmidt, J. (1999). A review of interventions for preschoolers with aggressive and disruptive behaviors. *Early Education and Development*, 10(1), 47-68; Joseph, G.E. & Strain, P.S. (2003). Comprehensive evidence-based social-emotional curricula for young children: An analysis of efficacious adoption potential. *Topics in Early Childhood Special Education*, 23(2), 65-76.
- <sup>36</sup> For complete information about the Incredible Years Training programs, see <http://www.incredibleyears.com/>.
- <sup>37</sup> Webster-Stratton, C., Reid, M. J., & Hammond, M. (2001). Preventing conduct problems, promoting social competence: A parent and teacher training partnership in Head Start. *Journal of Clinical Child Psychology*, 30(3), 283-302.
- <sup>38</sup> Webster-Stratton, C., Reid, M.J., & Hammond, M. (2004). Treating children with early-onset conduct problems: Intervention outcomes for parent, child, and teacher training. *Journal of Clinical Child and Adolescent Psychology*, 33(1), 105-124.
- <sup>39</sup> Fox, L., Dunlap, G., & Powell, D. (2002). Young children with challenging behavior: Issues and considerations for behavior support. *Journal of Positive Behavior Interventions*, 4(4), 208-217.
- <sup>40</sup> Carr, E.G., Horner, R.H., Turnbull, A. P., Marquis, J. G., McLaughlin, D. M., McAtee, M., et al. (1999). *Positive behavior support for people with developmental disabilities: A research synthesis*. Washington, DC: American Association on Mental Retardation.
- <sup>41</sup> Duda, M A., Dunlap, G., Fox, L., Lentini, R., & Clarke, S. (2004). An experimental evaluation of Positive Behavior Support in a community preschool program. *Topics in Early Childhood Special Education*, 24(3), 143-155.
- <sup>42</sup> Kohn, A. (2001). Five reasons to stop saying, "good job!" *Young Children* 56(5), 24-30.
- <sup>43</sup> Strain, P.S. & Joseph, G.E. (2004). A not so good job with "Good Job": A response to Kohn 2001. *Journal of Positive Behavior Interventions*, 6(1), 55-59.
- <sup>44</sup> Committee for Children. (1989). *Second Step violence prevention program*. Seattle: Author.
- <sup>45</sup> Bryant, D. & Kupersmidt, J. (2002). *Results from a classroom and home-based intervention for preschool aggression*. Presentation at Head Start's Sixth National Research Conference, Washington, DC.
- <sup>46</sup> Grossman, D.C., Neckerman, H.J., Koepsell, T.D., Liu, P., Asher, K.N., Beland, K., Frey, K., & Rivera, F.P. (1997). Effectiveness of a violence prevention curriculum among children in elementary school: A randomized controlled trial. *Journal of the American Medical Association*, 277(20), 1605-1642.
- <sup>47</sup> Serna, L. A. & Nielsen, E. (1999). *Self-determination curriculum for preschoolers*. Unpublished manuscript, University of New Mexico, Albuquerque.
- <sup>48</sup> Serna, L., Nielsen, E., Lambros, K., & Forness, S. (2000). Primary prevention with children at risk for emotional or behavioral disorders: Data on a universal intervention for Head Start classrooms. *Behavioral Disorders*, 26(1), 70-84.

- 
- <sup>49</sup> Denham, S.A. & Burton, R. (1996). A social-emotional intervention for at-risk 4-year-olds. *Journal of School Psychology, 34*(3), 225-245.
- <sup>50</sup> Shure, M. (1990). *ICPS problem solving techniques for preschool age children for use by teachers (2<sup>nd</sup> edition)*. Philadelphia: Hahnemann University; Shure, M.B. (2000). *I Can Problem Solve: An interpersonal cognition problem-solving program*. Champaign, IL: Research Press; Shure, M.B. & Spivack, G. (1979). Interpersonal cognitive problem solving and primary prevention: Programming for preschool and kindergarten children. *Journal of Clinical Child Psychology, 2*, 89-94.
- <sup>51</sup> Zill et al., 2003.
- <sup>52</sup> Weikart, D.P. (1998). Changing early childhood development through educational intervention. *Preventive Medicine, 27*, 233-237.
- <sup>53</sup> Youngstrom, E. Wolpaw, J.M., Kogos, J.L., Schoff, K., Ackerman, B., & Izard, C. (2000). Interpersonal problem solving in preschool and first grade: Developmental change and ecological validity. *Journal of Clinical Child Psychology, 29*(4), 589-602.
- <sup>54</sup> Webster-Stratton et al., 2004.
- <sup>55</sup> Fox & Lentini, 2006.
- <sup>56</sup> Tremblay, R. E. Development of physical aggression from early childhood to adulthood. In Tremblay, R.E., Barr, R.G., Peters, R.DeV., (Eds.) *Encyclopedia on Early Childhood Development* [online]. Montreal, Quebec: Centre of Excellence for Early Childhood Development; 2002: 1-6. Available at <http://www.excellence-earlychildhood.ca/documents/TremblayANGxp.pdf>. Accessed November 1, 2006.
- <sup>57</sup> Feil, E.G., Walker, H., Severson, H., & Ball, A. (2000). Proactive screening for emotional/behavioral concerns in Head Start preschools: Promising practices and challenges in applied research. *Behavioral Disorders, 26*(1), 13-25.
- <sup>58</sup> Feil, E.G., Small, J.W., Forness, S.B., Serna, L.A., Kaiser, A.B., et al., (2005). Using different measures, informants, and clinical cut-off points to estimate prevalence of emotional or behavioral disorders in preschoolers: Effects on age, gender, and ethnicity. *Behavioral Disorders, 30*(4), 375-391.
- <sup>59</sup> Strain, P.S. & Joseph, G.E. (2004). Engaged supervision to support recommended practices for young children with challenging behavior. *Topics in early childhood special education, 24*(1), 39-50.
- <sup>60</sup> Kohler, F. W., Anthony, L.J., Steighner, S. A., Hoyson, M. (2001). Teaching social interaction skills in the integrated preschool: An examination of naturalistic tactics. *Topics in Early Childhood Special Education, 21*(2), 93-103.
- <sup>61</sup> McGinnis, E. & Goldstein, A.P. (1990). *Skillstreaming in Early Childhood: Teaching prosocial skills to the preschool and kindergarten child*. Champaign, IL: Research Press Company.
- <sup>62</sup> Farmer-Dougan, V., Viechtbauer, W., & French, T. (1999). Peer-prompted social skills: The role of teacher consultation in student success. *Educational Psychology, 19*(2), 207-219.
- <sup>63</sup> Gilliam, W. (2003).