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A Three-Tier Model of Parent Education in Early Childhood:

Applying a Problem-Solving Model

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Abstract

Young children with developmental disabilities may be at heightened risk for experiencing problem behavior. Evidence suggests that inappropriate behavior in young children may be related to negative parent–child interactions. Parent education and support programs have a long history of utility and effectiveness in reducing negative parent–child interactions and behavior problems. Although these programs may be effective in preventing and resolving childhood behavioral problems, not every family benefits uniformly. This article discusses how a three-tier model of intervention can be applied to parent education for young children with developmental disabilities in the context of early childhood education programs. Furthermore, the authors discuss how a problem-solving model can be used to make decisions regarding intervention provision.

Keywords

parent education; parent training; developmental disabilities; early childhood; three-tier model

Children with intellectual or developmental disabilities are more likely than their typically developing counterparts to develop behavior disorders (Emerson, 2003). Parents or other family members may be negatively affected by the presence of child behavior problems and report higher levels of stress, caregiving burden, and depression than do parents with children with developmental disabilities but without behavior problems (McIntyre, Blacher, & Baker, 2002). Few studies have examined the underlying mechanisms of psychopathology in young children with developmental disabilities, although evidence suggests that behavioral problems either stem from or are exacerbated by negative parenting practices (Patterson, 1976b; Sameroff & Fiese, 2000). Regardless of the cause of behavior problems, children with developmental delays have demonstrated the onset of behavior problems at a young age (Baker, Blacher, Crnic, & Edelbrock, 2002), which suggests the need for early systematic, preventive efforts focused on reducing the risk of future behavior difficulties and family stress (McIntyre, Blacher, & Baker, 2006).

Given the established link between parenting and behavior problems, parent education has been used as an intervention mechanism both for children with developmental disabilities (e.g., Baker & Brightman, 2004) and for children with behavior disorders (e.g., Webster-Stratton, 1984). Unfortunately, not all families respond favorably to these programs (Webster-Stratton & Hammond, 1997). A number of factors have been shown to influence treatment outcomes, including intervention format and intensity (e.g., self-administered, group, individual) and parent (e.g., education, depression) or child factors (e.g., age, severity of problem). These

factors may mediate or moderate treatment outcomes (Beauchaine, Webster-Stratton, & Reid, 2005; Lundahl, Risser, & Lovejoy, 2006; O'Dell, 1985). Because young children with developmental disabilities and their families often experience additional risk factors, they may benefit from comprehensive and flexible early intervention services to support both child and family functioning. Programs that balance the level of intervention intensity with the needs of the family may be especially beneficial, as all children and families may not require the same level of intervention intensity (Warren, Fey, & Yoder, 2007). Interventions that have multiple tiers (e.g., Hemmeter, Ostrosky, & Fox, 2006) and borrow concepts from a problem-solving model (e.g., Deno, 2002) may be especially promising in the context of early childhood settings (Barnett et al., 2006).

Not all young children with developmental disabilities experience behavior problems; however, programs that support parents in positive parenting practices may help mitigate risk for developing future problems. Parent education programs that are integrated into children's early childhood education programs may provide seamless child and family supports in an ecologically valid context that supports both child and family functioning. Varying levels of parent education intensity could be provided depending on the strengths, needs, values, and desires of the family (Trivette & Dunst, 2005).

This article describes a three-tier model of parent education that targets preschool children with developmental disabilities and their parents. By design, this model does not target all preschool children in a true universal prevention approach; rather, the emphasis is on children with developmental disabilities who are already receiving early childhood special education in an inclusive preschool setting. Progress monitoring, in the form of observations of parent-child interactions, is implemented to determine which families require additional support. Although implementing a three-tier model of parent education and support is a novel application of the problem-solving model, three-tier models have been applied to a number of contexts, including early childhood populations (e.g., Hemmeter et al., 2006; VanDerHeyden & Snyder, 2006) and older children with high-incidence disabilities (e.g., Marston, Muyskens, Lau, & Canter, 2003).

Goals of the Article

The primary goals of this article are to (a) describe our conceptualization of a three-tier model of parent education for young children with developmental disabilities and (b) describe how a problem-solving model can be used to make data-based decisions for children and their families in early childhood special education programs.

Rationale for Parent Education and Support

The relationship between parenting and problematic child behavior is often explained using a transactional model (Dodge, 2000; Sameroff & Fiese, 2000). A transactional model suggests that the dynamic interactions that occur between a child and parent predict developmental outcomes. The combination of a vulnerable child (developmental disability) with an unfavorable family context (stress) may contribute to a persistent pattern of problem behavior that is fully mediated by parenting behaviors (Deater-Deckard, 1998). Negative, coercive parenting practices not only exacerbate problems associated with an existing disability or behavior disorder but may contribute to the development of additional behavior problems, such as the oppositional and aggressive behavior associated with childhood onset conduct and oppositional defiant disorders (Patterson, 1976a, 1982; Patterson, Capaldi, & Bank, 1991; Patterson, DeBaryshe, & Ramsey, 1989; Reid, 1993).

Patterson's (1982) coercion model describes a vicious cycle of parent-child dyadic exchanges, maintained by negative reinforcement and escape conditioning, that ultimately may lead to

long-term negative child (and parent) outcomes. With the repetition of these cycles, a rapid acceleration of the acquisition and maintenance of these maladaptive patterns is likely to occur (Patterson, 1976a, 1976b, 1982) along with the development of future antisocial behavior (Patterson, Reid, & Dishion, 1992). It follows that the implementation of prevention and early intervention strategies is critical in providing parents the skills necessary to overcome or correct early child difficulties and manage their day-to-day child-rearing stress. Providing services to families with young children is particularly important, as treatment gains are generally greater in young children when compared to their older counterparts with more severe, pervasive behavioral problems and longer reinforcement histories (Church, 2003; Dishion & Patterson, 1992; Ruma, Burke, & Thompson, 1996). Because young children with developmental disabilities often receive early intervention and/or preschool education and related services, providing parent education within the context of children's ongoing early childhood programs may be especially promising.

Early intervention, as well as prevention, is considered best practices (Richmond & Ayoub, 1993). Policy makers and service providers in health, education, social services, and juvenile justice now recognize the importance of intervening early in children's lives and supporting families before their children's behaviors become so well established that intensive, more costly intervention is needed (Olchowski, Foster, & Webster-Stratton, 2007; U.S. Public Health Service, 2000; VanDerHeyden & Snyder, 2006; Webster-Stratton, 2000). Parent education has been used as an early intervention strategy with families that have children with behavior problems and with families that have children with developmental disabilities.

Hundreds of studies have been conducted demonstrating the effectiveness of parent education in treating a variety of child behavior problems (see reviews in Barlow & Stewart-Brown, 2000; Kazdin, 1997; Lundahl et al., 2006; McMahon, 1999; Reyno & McGrath, 2006; Samper, Anderson, Hartung, & Scambler, 2001; Webster-Stratton & Taylor, 2001). Parent education is grounded in basic and applied concepts of operant theory and behaviorism (Holland & Skinner, 1961) and in the principles of social learning theory (Bandura, 1977). By reducing parents' ineffective parenting techniques and increasing positive skills, parent education aims to decrease negative parent-child interactions and, in turn, increase positive interactions. Parents are prime candidates to be their children's primary change agents due to the many dyadic interactions that occur across multiple environments. In these dyadic exchanges, parents set the standards, roles, expectations, and demands for their children, allowing for multiple opportunities to respond, reinforce, and promote children's positive behaviors (Wierson & Forehand, 1994). Given parents' extensive involvement in their children's social environments, parent education programs are a highly beneficial approach for parents with preschool-age children, allowing for professionals to intervene during a time when the children are still young and negative family interactions are malleable (Patterson et al., 1989). Parent training and education and family counseling are related services that infants, toddlers, and preschool children may be eligible for through Part C or Part B of the Individuals With Disabilities Education Improvement Act (2004).

Although parent education appears to be a promising approach to reduce child behavior problems, not every family benefits uniformly. In fact, even the most well-established interventions for conduct problems are effective for only about two thirds of the participating children, leaving a third of the children's posttreatment behaviors in the clinical range (Webster-Stratton & Hammond, 1997). In the parent education literature, a range of parent and child variables have been identified that moderate treatment effects. Parent variables often include social adversity factors that interfere with parenting. For example, maternal depression, poor social support, marital problems, single-parent status, socioeconomic disadvantage, and negative life stresses have all been identified to moderate treatment outcomes (Beauchaine et al., 2005; Spoth, Redmond, Hockaday, & Shin, 1996). Other factors such as parental cognitive

and physiological dispositions may also mediate or moderate treatment outcomes by influencing the rate of skill acquisition and adherence (Kazdin, 1990; O'Dell, 1985). Certainly not all parents will experience these risk factors; however, considering each family's strengths and support needs may help professionals develop more effective programs regardless of family risk factors.

Other factors, such as transportation, costs, child care, and scheduling conflicts, prevent families from initiating or completing treatment (Webster-Stratton, 1984, 1985). Unfortunately, those families that are expected to benefit the most from parent education (economically disadvantaged or socially isolated) often display limited attendance at clinic-based programs and are less likely to complete treatment (Kazdin, 1990; Webster-Stratton & Hammond, 1990). We argue that parent programs housed in ongoing early childhood special education programs may address many factors that interfere with parents' treatment adherence.

Child characteristics have also been related to treatment outcome. The age of the child has been the most commonly identified factor associated with treatment outcome, with more positive effects demonstrated in younger children (Dishion & Patterson, 1992; Ruma et al., 1996). This finding may be due to the relationship between the severity and chronicity of behavioral problems and the amount of intervention required to produce behavioral improvements (Gresham, 1991). That is, individuals with more severe and/or chronic behavioral problems tend to require more intense intervention. Targeting preschool-age children may be a cost-effective strategy that promotes positive parent and child outcomes.

Parent Education Formats

Flexible programming aimed at supporting families with young children with or at risk for behavior disorders should include consideration of the parent education format adopted by clinicians or other early childhood professionals. A multitude of parent education formats, including self-administered, group-based, and individually administered formats, have been investigated.

Self-Administered Programs

Self-administered parent training may offer an accessible intervention for many families, especially those that have difficulty participating through traditional means. By providing parents with literature, audiovisual material, or computer-delivered information, this mode of delivery requires little to no contact between the professional and the parent. Self-administered intervention has been shown, by some, to be as effective as therapist-directed programs (Markie-Dadds & Sanders, 2006; Nicholson & Sanders, 1999). Webster-Stratton, Kolpacoff, and Hollinsworth (1988), on the other hand, found this mode of intervention delivery to be less effective when compared to a group discussion videotape modeling program. In a follow-up study, Webster-Stratton (1999) recognized the importance of allowing families access to more cost-effective programs and sought to determine which participant variables were associated with positive outcomes in self-administered programs. Results of Webster-Stratton's study suggested that single-mother status, maternal depression, and mother's low mental age were significantly correlated with at least two of the four outcome variables at posttreatment. Therefore, although self-administered intervention may be helpful for some families, others may not respond to this form of intervention and may need additional support.

Group-Based Programs

Using a small-group format (8–12 participants) allows families to receive more therapist attention in comparison to a self-administered format. Although group-based programs require more resources to implement, they are still more cost efficient than individually delivered

intervention. Several group parent education programs have been designed to promote parent competencies and to address and/or prevent conduct problems (see reviews in Brestan & Eyberg, 1998; Webster-Stratton & Taylor, 2001). A collateral benefit of group programs is the support and kinship available from other participants, possibly increasing parental engagement with the intervention and the children's early education program. Greater parental engagement is an important benefit of group formats, especially for those who may be socially isolated (e.g., low-income single mothers), with little support and few friendships (Dumas & Wahler, 1983). Although group-based parent education programs have many advantages, not every family benefits from this approach (Webster-Stratton & Hammond, 1997). Individually administered parent education allows participants to receive the most intensive, flexible, and individualized support.

Individually Administered Programs

There are many advantages to providing parents with individually administered programs over self-administered or group-based programs. In individually administered programs, there is increased flexibility in scheduling sessions and individualizing the content. Therapists who provide individualized sessions can give parents feedback specific to their situations and address parents' questions and concerns in a more individualized, tailored fashion. The primary disadvantage of individually administered programs is the cost. Webster-Stratton (1984) argued that group-based programs were more efficient and effective for many families. As previously discussed, individually administered programs also lack the provision of social support provided by group members. On the other hand, parents were more likely to accept and participate in individually based intervention than in group intervention (Chadwick, Momciloric, Rossiter, Stumbles, & Taylor, 2001). In a meta-analysis examining the variability of treatment effects in terms of participant and treatment characteristics, Lundahl et al. (2006) found individually delivered intervention to be superior to group-delivered intervention for financially disadvantaged groups. That is, families with low socioeconomic status that participated in individually delivered parent programs had larger treatment effects than those that participated in group-delivered programs, which suggests a greater need for more individualized support for these individuals.

Three-Tier Model of Parent Education

Figure 1 describes a conceptualization of a three-tier model of parent education that we are empirically investigating. This model progresses from a least intensive to most intensive treatment, following a primary, secondary, and tertiary prevention framework (e.g., Sugai, Horner, & Gresham, 2002). This framework is similar to a least-to-most prompting procedure that implements increasing levels of support as deemed necessary (e.g., Le Grice & Blampied, 1997; Murzynski & Bourret, 2007). Each intervention level involves promising practices based on research investigations (Hoagwood & Johnson, 2003) to promote positive parenting behaviors and parent-professional relationships. These levels include child and family supports delivered through early childhood special education and related services plus (a) self-administered reading (or audio) materials using proven parenting techniques; (b) group-based parent education; and (c) individualized sessions that involve direct instruction techniques and use modeling, practice, feedback, and reinforcement. Although still an empirical question, using a three-tier model may allow intervention to be more efficacious and still maintain efficiency. This logic stems from the stepped care literature (e.g., Bower & Gilbody, 2005) and the schoolwide positive behavior support literature (e.g., Ervin, Schaughency, Matthews, Goodman, & McGlinchey, 2007). By applying a three-tier model to parent education in early childhood, child and family supports can be individualized and the sequence of intervention could be modified, based on response to intervention. Below is a description of the conceptualized three tiers.

Tier 1: Family-Focused Early Childhood Education Plus Self-Administered Parent Education Materials

All children and families receive appropriate child-and family-focused practices that are provided in the inclusive preschool special education program. Practices that are strength based, build professional–family partnerships (e.g., Trivette & Dunst, 2005), and are individualized based on the child’s needs are implemented for all preschool children with developmental disabilities and their families. In addition, all families are provided with reading material or audio material that address parenting practices to build strong parent–child interactions and positive child development outcomes (e.g., social competence, low levels of problem behavior). Materials are drawn from *The Incredible Years: A Trouble-Shooting Guide for Parents of Children Aged 2–8 Years* (Webster-Stratton, 2005). The self-administered program is part of Carolyn Webster-Stratton’s Incredible Years Parent Series (Webster-Stratton, 2001). The Incredible Years is a well-established program (Brestan & Eyberg, 1998) and has been used effectively for parents with young children with or at risk for behavior problems. Provision of the self-administered materials is facilitated by an early childhood specialist (e.g., teacher, social worker, psychologist) who serves as intake coordinator and has regular family contact.

Tier 2: Group-Based Parent Education

Secondary intervention, in the form of Webster-Stratton’s Incredible Years Parent Training (IYPT) 12-week group-based parent education program, is offered to families that need additional support and strategies for promoting positive child behavior, reducing negative or inappropriate behaviors, and increasing positive parent–child interactions. This group-based program is manualized (Webster-Stratton, 2001) and uses a structured curriculum to provide skill building and support to parents in the areas of developmentally appropriate play, praise, rewards, limit setting, and handling challenging behavior. The IYPT program uses videotape vignettes, discussion, role-play, and didactics to cover each topic area. One early childhood specialist and one consulting psychologist or behavior specialist cofacilitate the program. In our own work, we have provided this program in early childhood education centers and adapted it for use with families with preschool-age children with developmental delay. We have found the modified IYPT to be feasible for parents with preschool-age children with developmental disabilities (McIntyre, 2007a) and more efficacious than usual care in reducing negative parent–child interactions and children’s problem behavior in a randomized controlled trial (McIntyre, 2007b).

Tier 3: Individualized Support and Video Feedback

Tertiary supports are provided to parents who require support beyond group-based education. Individual intervention sessions are provided to parents in a natural environment of their choosing (home or school) and focus on specific areas of difficulty in behavior management, reinforcement delivery, developmentally appropriate play, or other content areas. Sessions are tailored to families’ specific needs and use self-modeling and video feedback. In addition, rehearsal, praise, and/or corrective feedback are facilitated by the consulting psychologist or behavior specialist. These procedures are adopted from the skill-building literature (e.g., Himle, Miltenberger, Flessner, & Gatheridge, 2004). We have used individualized support and video feedback in our work with parent–preschool child dyads (Phaneuf & McIntyre, in press), and a host of other studies use similar procedures for skill building and behavior therapy for children with developmental disabilities and their families (e.g., Bakermans-Kranenburg, Juffer, & van Ijzendoorn, 1998; Embregts, 2000; Girolametto, 2006; Maione & Mirenda, 2006; Reamer, Brady, & Hawkins, 1998).

Using a Problem-Solving Model to Inform Decisions

This three-tier model for parent education utilizes early childhood specialists to complete descriptive intake assessments with all families upon preschool program entry. The intake, among other things, consists of a brief interview that asks parents to describe their children's strengths, areas of concern, likes, and dislikes. In addition, the early childhood specialist asks parents to describe their biggest challenges and joys of parenting. Parents also complete the *Child Behavior Checklist 1½–5* (CBCL; Achenbach, 2000), a standardized measure of common behavior difficulties in toddlers and preschool-age children. Finally, three brief (15-minute) observations of parent–child interactions are collected over the course of three home (or school) visits. Parents and children are asked to play together (10 minutes), clean up (2 minutes), and then work on a structured activity together (e.g., a puzzle; 3 minutes). Parent–child interactions are coded according to positive, promotive parenting behavior (e.g., uses descriptive commenting during play, uses specific-labeled praise) and negative or inappropriate behavior (e.g., allows escape following command, provides attention for child disruptive behavior). Child positive and negative behaviors are also coded. (See Phaneuf & McIntyre, in press, for a more detailed description of the parent–child interaction observation system.)

Three baseline parent–child observations are collected at intake, with two more observations collected following each intervention tier. The proposed Tier 1 intervention is estimated to be delivered in approximately 5 weeks (one chapter or audio segment per week) with the Tier 2 intervention consisting of 12 weeks of 2½-hour sessions (see McIntyre, 2007b; Webster-Stratton, 2001). The Tier 3 intervention is individualized based on specific family concerns. Thus, the number of individualized sessions is determined based on what is feasible and desired by the family and professional. This schedule of data collection strays from traditional progress monitoring as discussed by proponents of problem-solving or response-to-intervention models used with older children (e.g., Marston et al., 2003). The parent–child observation data, along with staff and family input, serve as the basis for making decisions about providing additional parent education and support.

When using a problem-solving model to inform intervention decisions, guidelines that define response and nonresponse (i.e., resistance) to intervention are important considerations. These criteria are often left to practitioners to determine which individuals require additional intervention. Our previous work has demonstrated that, on average, parents with preschool-age children with developmental disabilities reduced their observed inappropriate or negative parent–child interactions to 12% to 22% of intervals following a group-based (Tier 2) parent education program (McIntyre, 2007a, 2007b). Based on these data, we have adopted a 15% rule to identify those that respond to parent education intervention. Following this logic, if a participating family reaches the 15% criterion using self-administered parent education materials alone, further parent education intervention is not immediately provided; however, these families continue to receive family-focused support through the child's early childhood program. This 15% criterion is based on the results of research studies we have conducted; however, the extent to which this criterion has clinical utility with other parent and child populations has yet to be determined.

Our earlier work with parent education to promote positive child interactions (McIntyre, 2007a, 2007b; Phaneuf & McIntyre, in press) has laid the foundation for the conceptualized three-tier model. Families that have participated in these earlier studies do not represent all families with preschool-age children with developmental disabilities; therefore, the generalizability of these findings may be limited to similar samples. For example, all participants in our studies (McIntyre, 2007a, 2007b; Phaneuf & McIntyre, in press) were drawn from upstate New York, and the majority (83%) were White/Caucasian with high school

diplomas (78%). All children were enrolled in inclusive preschool programs and received special education and related services as part of their individual education plans. All children had documented developmental delay, and in some cases, they had specific diagnoses. For example, 40% of participating families had children with autism spectrum disorder. Thus, the participants in these research studies, although recruited through community early education programs, in a number of ways did not necessarily represent all children and families receiving special education preschool services. The families that participated in the aforementioned studies volunteered to participate in research. Because they were volunteer research participants, they may have been more motivated or comfortable working with professionals in this capacity than families that chose not to respond to recruitment efforts. It is likely the case that children and families that participate in research studies do not represent the larger population of children and families, adding to the research–practice divide.

Our goal for this article was to describe a conceptualization of a three-tier model of parent education that could be incorporated in an early education program. The feasibility, efficacy, and efficiency of such an approach have yet to be fully investigated. There is a need for further research to examine relevant issues to tiered models of parent education intervention. First, it is important to determine intervention decision criteria. Related to this issue, it may be possible to streamline parents to a specific level of intervention based on baseline assessments. For instance, a parent with very high levels of observed inappropriate parent–child interactions or a child with severe problem behavior (based on observation or CBCL data) may be moved through the intervention tiers more quickly or may possibly skip tiers. Second, parents' willingness to undergo more involved interventions after participating in less intense supports should be investigated. Third, the overall efficacy, effectiveness, and cost efficiency of such a model should be vigorously explored. Finally, training, supervision, and ongoing staff development in early childhood education programs are important considerations for this work.

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References

- Achenbach, TM. Manual for the Child Behavior Checklist 1½–5. Burlington: University of Vermont, Department of Psychiatry; 2000.
- Baker BL, Blacher J, Crnic K, Edelbrock C. Behavior problems and parenting stress in families of three-year-old children with and without developmental delays. *American Journal on Mental Retardation* 2002;107:433–444. [PubMed: 12323068]
- Baker, BL.; Brightman, AJ. Steps to independence: Teaching everyday skills to children with special needs. Vol. 4th ed.. Baltimore: Brookes; 2004.
- Bakermans-Kranenburg MJ, Juffer F, van IJzendoorn MH. Interventions with video feedback and attachment discussions: Does type of maternal insecurity make a difference? *Infant Mental Health Journal* 1998;19:202–219.
- Bandura, A. Social learning theory. Oxford, UK: Prentice Hall; 1977.
- Barlow J, Stewart-Brown S. Behavior problems and group-based education programs. *Developmental and Behavioral Pediatrics* 2000;21:356–370.
- Barnett DW, Elliott N, Wolsing L, Bunger CE, Haski H, McKissick C, et al. Response to intervention for young children with extremely challenging behaviors: What it might look like. *School Psychology Review* 2006;35:568–582.
- Beauchaine TP, Webster-Stratton C, Reid MJ. Mediators, moderators, and predictors of one-year outcomes among children treated for early-onset conduct problems: A latent growth curve analysis. *Journal of Consulting and Clinical Psychology* 2005;73:371–388. [PubMed: 15982136]

- Bower P, Gilbody S. Stepped care in psychological therapies: Access, effectiveness and efficiency. *British Journal of Psychiatry* 2005;186:11–17. [PubMed: 15630118]
- Brestan EV, Eyberg SM. Effective psychosocial treatments of conduct-disordered children and adolescents: 29 years, 82 studies, and 5,272 kids. *Journal of Clinical Child Psychology* 1998;27:180–189. [PubMed: 9648035]
- Chadwick O, Momciloric N, Rossiter R, Stumbles E, Taylor E. A randomized trial of brief individual versus group parent training for behaviour problems in children with severe learning disabilities. *Behavioural and Cognitive Psychotherapy* 2001;29:151–167.
- Church, J. The definition, diagnosis and treatment of children and youth with severe behaviour difficulties: A review of research. Wellington, UK: Ministry of Education; 2003.
- Deater-Deckard K. Parenting stress and child adjustment: Some old hypotheses and new questions. *Clinical Psychology: Science and Practice* 1998;5:314–332.
- Deno, SL. Problem-solving as best practice. In: Thomas, A.; Grimes, J., editors. *Best practices in school psychology*. Vol. Vol. 4. Bethesda, MD: National Association of School Psychologists; 2002. p. 37–55.
- Dishion TJ, Patterson GR. Age effects in parent training outcome. *Behavior Therapy* 1992;23:719–729.
- Dodge, KA. Conduct disorder. In: Sameroff, AJ.; Lewis, M.; Miller, SM., editors. *Handbook of developmental psychopathology*. Vol. 2nd ed.. New York: Kluwer Academic/Plenum; 2000. p. 447–463.
- Dumas J, Wahler RG. Predictors of treatment outcome in parent training: Mother insularity and socioeconomic disadvantage. *Behavioral Assessment* 1983;5:301–313.
- Embregts PJ. Effectiveness of video feedback and self-management on inappropriate social behavior of youth with mild mental retardation. *Research in Developmental Disabilities* 2000;21:409–423. [PubMed: 11100803]
- Emerson E. Prevalence of psychiatric disorders in children and adolescents with and without intellectual disabilities. *Journal of Intellectual Disability Research* 2003;47:51–58. [PubMed: 12558695]
- Ervin RA, Schaughency E, Matthews A, Goodman SD, McGlinchey MT. Primary and secondary prevention of behavior difficulties: Developing a data-informed problem-solving model to guide decision making at a school-wide level. *Psychology in the Schools* 2007;44:7–18.
- Girolametto, L. It takes two to talk—The Hanen Program for parents: Early language intervention through caregiver training. In: McCauley, R.; Fey, M., editors. *Treatment of language disorders in children*. Baltimore: Brookes; 2006. p. 77–103.
- Gresham FM. Conceptualizing behavior disorders in terms of resistance to intervention. *School Psychology Review* 1991;20:23–36.
- Hemmeter ML, Ostrosky M, Fox L. Social and emotional foundations for early learning: A conceptual model for intervention. *School Psychology Review* 2006;35:583–601.
- Himle MB, Miltenberger RG, Flessner C, Gatheridge B. Teaching safety skills to children to prevent gun play. *Journal of Applied Behavior Analysis* 2004;37:1–9. [PubMed: 15154211]
- Hoagwood K, Johnson J. School psychology: A public health framework I. From evidence-based practices to evidence-based policies. *Journal of School Psychology* 2003;41:3–21.
- Holland, JG.; Skinner, BF. *The analysis of behavior: A program for self-instruction*. New York: McGraw-Hill; 1961.
- Individuals With Disabilities Education Improvement Act. Public Law 108–446. 2004 [Retrieved February 21, 2007]. from <http://www.ed.gov/policy/speced/guid/idea/idea2004.html>
- Kazdin AE. Premature termination from treatment among children referred for antisocial behavior. *Journal of Child Psychology and Psychiatry* 1990;31:415–425. [PubMed: 2318922]
- Kazdin AE. Parent management training: Evidence, outcomes, and issues. *Journal of the American Academy of Child and Adolescent Psychiatry* 1997;36:1349–1356. [PubMed: 9334547]
- Le Grice B, Blampied NM. Learning to use video recorders and personal computers with increasing assistance prompting. *Journal of Developmental and Physical Disabilities* 1997;9:17–30.
- Lundahl B, Risser HJ, Lovejoy C. A meta-analysis of parent training: Moderators and follow-up effects. *Clinical Psychology Review* 2006;26:86–104. [PubMed: 16280191]

- Maione L, Mirenda P. Effects of video modeling and video feedback on peer-directed social language skills of a child with autism. *Journal of Positive Behavior Interventions* 2006;8:106–118.
- Markie-Dadds C, Sanders MR. Self-directed Triple P (Positive Parenting Program) for mothers with children at-risk of developing conduct problems. *Behavioural and Cognitive Psychotherapy* 2006;34:259–275.
- Marston D, Muyskens P, Lau M, Canter A. Problem-solving model for decision making with high-incidence disabilities: The Minneapolis experience. *Learning Disabilities Research and Practice* 2003;18:187–200.
- McIntyre LL. Parent training for children with developmental delay: Adapting Webster-Stratton's Incredible Years. 2007a Manuscript submitted for publication.
- McIntyre LL. Parent training in young children with developmental disabilities: A randomized controlled trial. 2007b Manuscript submitted for publication.
- McIntyre LL, Blacher J, Baker BL. Behaviour/mental problems in young adults with intellectual disability: Impact on families. *Journal of Intellectual Disability Research* 2002;46:239–249. [PubMed: 11896809]
- McIntyre LL, Blacher J, Baker BL. Transition to school: Adaptation in young children with and without developmental delays. *Journal of Intellectual Disability Research* 2006;50:349–361. [PubMed: 16629928]
- McMahon, R. Parent training. In: Russ, S.; Ollendick, T., editors. *Handbook of psychotherapies with children and families*. New York: Kluwer Academic/Plenum; 1999. p. 153-180.
- Murzynski NT, Bourret JC. Combining video modeling and least-to-most prompting for establishing response chains. *Behavioral Interventions* 2007;22:147–152.
- Nicholson RJ, Sanders MR. Randomized controlled trial of behavioural family intervention for the treatment of child behaviour problems in stepfamilies. *Journal of Divorce and Remarriage* 1999;30:156–167.
- O'Dell SL. Progress in parent training. *Progress in behavior* 1985;10:57–108.
- Olchowski AE, Foster EM, Webster-Stratton CH. Implementing behavioral intervention components in a cost effective manner: Analysis of the Incredible Years program. *Journal of Early and Intensive Behavioral Intervention*, 3.4–4.1 2007:284–304.
- Patterson, GR. The aggressive child: Victim and architect of a coercive system. In: Mash, JJ.; Hamerlynck, LA.; Handy, LC., editors. *Behavior modification and families*. New York: Bruner/Mazel; 1976a. p. 267-316.
- Patterson, GR. *Living with children: New methods for parents and teachers*. Vol. Rev. ed.. Champaign, IL: Research Press; 1976b.
- Patterson, GR. *Coercive family process*. Eugene, OR: Castalia; 1982.
- Patterson, GR.; Capaldi, D.; Bank, L. An early starter model for predicting delinquency. In: Pepler, D.; Rubin, KH., editors. *The development and treatment of childhood aggression*. Hillsdale, NJ: Erlbaum; 1991. p. 139-168.
- Patterson GR, DeBaryshe BD, Ramsey E. A developmental perspective on antisocial behavior. *American Psychologist* 1989;44:329–335. [PubMed: 2653143]
- Patterson, GR.; Reid, JB.; Dishion, TJ. *Antisocial boys*. Eugene, OR: Castalia; 1992.
- Phaneuf L, McIntyre LL. Effects of individualized video feedback combined with group parent training on maternal inappropriate behavior. *Journal of Applied Behavior Analysis*. (in press).
- Reamer RB, Brady MP, Hawkins J. The effects of video self-modeling on parents' interactions with children with developmental disabilities. *Education and Training in Mental Retardation and Developmental Disabilities* 1998;33:131–143.
- Reid JB. Prevention of conduct disorder before and after school entry: Relating interventions to developmental findings. *Development and Psychopathology* 1993;5:243–262.
- Reyno SM, McGrath PJ. Predictors of parent training efficacy for child externalizing behavior problems: A meta-analytic review. *Journal of Child Psychology and Psychiatry* 2006;47:99–111. [PubMed: 16405646]
- Richmond, J.; Ayoub, CC. Evolution of early intervention philosophy. In: Bryant, DM.; Graham, MA., editors. *Implementing early intervention*. New York: Guilford; 1993. p. 1-17.

- Ruma PR, Burke RV, Thompson RW. Group parent training: Is it effective for children of all ages? *Behavioral Therapy* 1996;27:159–169.
- Sameroff, A.; Fiese, BH. Transactional regulation: The developmental ecology of early intervention. In: Shonkoff, JP.; Meisels, SJ., editors. *Handbook of early childhood intervention*. Vol. 2nd ed.. New York: Cambridge University Press; 2000. p. 135-159.
- Sampers J, Anderson KG, Hartung CM, Scambler DJ. Parent training programs for young children with behavior problems. *Infant Toddler Intervention* 2001;11:91–110.
- Spoth R, Redmond C, Hockaday C, Shin C. Barriers to participation in family skills preventive interventions and their evaluations: A replication and extension. *Family Relations* 1996;45:247–254.
- Sugai, G.; Horner, RH.; Gresham, FM. Behaviorally effective school environments. In: Shinn, MR.; Walker, HM.; Stoner, G., editors. *Interventions for academic and behavior problems: Vol. II. Preventive and remedial approaches*. Bethesda, MD: National Association for School Psychologists; 2002. p. 315-350.
- Trivette, CM.; Dunst, CJ. DEC recommended practices: Family-based practices. In: Sandall, S.; Hemmeter, ML.; Smith, BJ.; McLean, ME., editors. *DEC recommended practices: A comprehensive guide for practical application in early intervention/early childhood special education*. Missoula, MT: Division for Early Childhood (DEC) of the Council for Exceptional Children; 2005. p. 107-126.
- U.S. Public Health Service. Report of the Surgeon General's Conference on Children's Mental Health: A national action agenda. 2000 [Retrieved July 7, 2006]. from <http://www.surgeongeneral.gov/topics/cmh/childreport.htm>
- VanderDerHeyden AM, Snyder P. Integrating frame-works from early childhood intervention and school psychology to accelerate growth for all young children. *School Psychology Review* 2006;35:519–534.
- Warren SF, Fey ME, Yoder PJ. Differential treatment intensity research: A missing link to creating optimally effective communication interventions. *Mental Retardation and Developmental Disabilities Research Reviews* 2007;13(1):70–77. [PubMed: 17326112]
- Webster-Stratton C. Randomized trial of two parent-training programs for families with conduct-disordered children. *Journal of Consulting and Clinical Psychology* 1984;52:666–678. [PubMed: 6470293]
- Webster-Stratton C. Predictors of treatment outcome in parent training for conduct disordered children. *Behavior Therapy* 1985;16:223–243.
- Webster-Stratton C. Individually administered videotape parent training: “Who benefits?”. *Cognitive Therapy and Research* 1999;16:31–35.
- Webster-Stratton C. The Incredible Years training series. Office of Juvenile Justice and Delinquency Program Juvenile Justice Bulletin 2000 June;:1–22.
- Webster-Stratton, C. The Incredible Years: Parents, teachers, and children training series: Leader's guide. Seattle, WA: Author; 2001.
- Webster-Stratton, C. The Incredible Years: A trouble-shooting guide for parents of children aged 2–8 years. Seattle, WA: Author; 2005.
- Webster-Stratton C, Hammond M. Predictors of treatment outcome in parent training for families with conduct problem children. *Behavior Therapy* 1990;21:319–337.
- Webster-Stratton C, Hammond M. Treating children with early-onset conduct problems: A comparison of child and parent training interventions. *Journal of Consulting and Clinical Psychology* 1997;65:93–109. [PubMed: 9103739]
- Webster-Stratton C, Kolpacoff M, Hollinsworth T. Self-administered videotape therapy for families with conduct-problem children: Comparison with two cost-effective treatments and a control group. *Journal of Consulting and Clinical Psychology* 1988;56:1558–1566.
- Webster-Stratton C, Taylor T. Nipping early risk factors in the bud: Preventing substance abuse, delinquency, and violence in adolescence through interventions targeted at young children (0–8 years). *Prevention Science* 2001;2:165–192. [PubMed: 11678292]
- Wierson M, Forehand R. Parent behavioral training for child noncompliance: Rationale, concepts, and effectiveness. *Current Directions in Psychological Science* 1994;3:146–150.

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Figure 1. Three-Tier Model of Parent Education

Note: All levels involve inclusive preschool special education and related services using a family-focused, strength-based model.