5

Financial Hardship and Parenting Stress in Families with Young Children with Autism: Opportunities for Preventive Intervention

Christopher J. Trentacosta, Jessica L. Irwin,
Laura M. Crespo, and Marjorie Beeghly

Abstract

Children under age 6 years are especially likely to live in households facing serious financial hardship, and economic strain can increase the amount of stress experienced by parents of young children. Parenting stress and financial hardship are especially salient to families with young children with autism spectrum disorder (ASD). This chapter utilizes Conger and Conger's (J Marriage Fam 64:361–373, 2002) family stress model to conceptualize how financial hardship and parenting stress can exacerbate behavior problems among at-risk young children. The chapter also summarizes the literature on financial hardship and parenting stress among families with young children with ASD. The chapter concludes with a discussion of screening and intervention strategies to support low-income families with young children with ASD. An established preventive intervention for low-income families with young children is described. The chapter presents possible modifications to this preventive intervention approach to address the psychosocial needs of economically insecure families with young children with ASD.

Financial Hardship and Parenting Stress in Families with Young Children with Autism: Opportunities for Preventive Intervention

Parenting young children is challenging, and these challenges can be exacerbated by several factors including parenting stress and financial strain. Furthermore, financial strain and parenting stress are linked within families, with financial hardship and economic pressure each playing a role in heightening parents' emotional distress, difficulties with parenting, and children's risk for subsequent maladjustment (Conger & Conger, 2002). Financial hardship is prevalent among families with young children, and children under age 6 years are more likely to live in households facing serious financial hard-

---

C. J. Trentacosta (✉) · J. L. Irwin · L. M. Crespo
M. Beeghly
Wayne State University, Department of Psychology,
Detroit, MI, USA
e-mail: chris.trentacosta@wayne.edu; jessica.irwin@wayne.edu; laura.crespo@wayne.edu; beeghly@wayne.edu

M. Siller, L. Morgan (eds.), *Handbook of Parent-Implemented Interventions for Very Young Children with Autism*, Autism and Child Psychopathology Series,
https://doi.org/10.1007/978-3-319-90994-3_5

ship than older children or adults. Based on a recent estimate, 48% of young children in the United States live in families classified as "low-income" (family income less than 200% of the federal poverty threshold), and 25% of young children live in families classified as "poor" (family income below the federal poverty threshold; Jiang, Ekono, & Skinner, 2015). These statistics translate to approximately 11.1 million young children living in low-income families in the United States.

Parenting stress and financial hardship are especially salient to families with young children with autism spectrum disorders (ASD). The prevalence of ASD, recently estimated as 1 in 68 children (Autism and Developmental Disabilities Monitoring Network, 2014), is similar in lower-income and higher-income populations (Boyle et al., 2011). This means that the population of children with ASD residing within low-income households in the United States is likely to be well over 150,000. In addition, many families who had been economically secure will experience financial hardships due to increased costs and other ramifications of the ASD diagnosis. Given the relatively high likelihood that families with young children with ASD will experience financial hardship and associated family stressors, it is important to understand and address the unique psychosocial needs of these families. In this chapter, we utilize Conger and Conger's (2002) family stress model to conceptualize how financial hardship and parenting stress can exacerbate behavior problems among at-risk young children, including children with ASD. Then, we summarize the literature on financial hardship, factors that often co-occur with low socioeconomic status, and parenting stress among families with young children with ASD. We conclude with a discussion of interventions geared toward supporting low-income families with children at-risk for serious behavior problems. In particular, we describe how an efficacious preventive intervention for low-income families could be adapted to address the psychosocial needs of economically insecure families with young children with ASD.

The Family Stress Model

The family stress model (FSM) was developed by Rand Conger, Katherine Conger, and their colleagues to explain the influences of financial hardship on the lives of rural families facing the economic crisis in agriculture that occurred in the Midwestern United States during the 1980s (Conger, Conger, & Martin, 2010; Conger & Elder Jr., 1994). The FSM posits that financial hardship and resulting economic pressure negatively impact child adjustment via influences on parents' and other caregivers' emotions and behaviors. Parents' negative emotions and problematic relationships that stem from economic stressors adversely affect their parenting strategies, leading to behavioral difficulties among their offspring (Conger & Donnellan, 2007). The FSM was initially validated in longitudinal research with rural parents and adolescents in Iowa (Conger & Conger, 2002). For the most part, subsequent tests of the FSM in other populations have provided evidence that this model is applicable to families with children in different age ranges and across several ethnic, racial, and cultural groups. These follow-up studies of the FSM have focused on several specific populations, including African-American families with school-age children (Conger et al., 2002), Mexican American families with fifth graders (Parke et al., 2004), and low-income families with toddler-aged children in New Orleans, many of whom were impacted by Hurricane Katrina (Scaramella, Sohr-Preston, Callahan, & Mirabile, 2008).

Two modifications and extensions of the FSM are noteworthy. First, the notion of resilience has been incorporated into the FSM because biological, psychological, and social factors might either compensate for or buffer against the negative influence of economic hardship on family processes (Conger & Conger, 2002). For example, in the Congers' sample of rural families in Iowa, high levels of support within the marital relationship attenuated the link between economic pressure and emotional distress (Conger, Rueter, & Elder, 1999). Second, Conger and Donnellan (2007) proposed an interactionist model of the role of socioeconomic conditions on human development that melds social causation perspectives like the FSM and the family investment model (FIM) with social selection perspectives. Similar to the FSM, the FIM posits that families with more economic resources can make greater investments in their children's growth and learning whereas families with fewer resources focus on immediate family needs. Social selection perspectives focus on the idea that connections between socioeconomic factors and children's developmental outcomes may be due to underlying characteristics like personality traits or intelligence. The interactionist model melds the social causation and social selection perspectives by positing that parents' characteristics emanating from their own childhood and adolescence impact the family's socioeconomic conditions (consistent with the social selection process) but that the family's socioeconomic conditions also impact family stress and investment in their children (consistent with the social causation process).

The FSM and the associated interactionist perspective can be applied to processes that unfold within families who have young children with ASD. As is the case with the rural families from Iowa and the cultural minority groups who have been the focus of much of the FSM research, families with young children with ASD are vulnerable to economic pressure resulting from financial hardship. Arguably, these families are particularly at-risk because they have young children and because seeking and receiving adequate treatment for ASD can have significant time and financial costs. Regardless of the source of the strain, financial hardship within families with children with ASD can set in motion a cascade of negative effects in the family that may undermine parenting and exacerbate behavior problems within these already vulnerable children. However, these families might also have important sources of resilience that could compensate for or buffer against the financial hardship. We are not aware of studies that have fully evaluated the FSM in families with young children with ASD, but the following sections provide summaries of what is known about financial hardship and parenting stress among families who have children with ASD.

Financial Hardship

Financial hardship is a fairly common experience among families of children with ASD. In some situations, parenting a child with ASD may contribute to new financial hardships that did not exist prior to the ASD diagnosis. A recent estimate from three national data sets places the annual costs of caring for a child with ASD at $17,081 when tabulating costs for education, health care, therapy, and other services (Lavelle et al., 2014). Although most of these costs are not paid directly by parents, utilizing medical interventions for autism such as medications and having unreimbursed out-of-pocket expenses predicts the likelihood that families experience financial problems (Sharpe & Baker, 2007). In addition, families with lower incomes are especially likely to report financial problems due to autism and related conditions. Caring for a child with ASD can negatively impact the caregivers' employment status and earnings, and these effects are often especially profound for mothers (Baker & Drapela, 2010). On average, mothers of children with ASD earn 35% less than mothers of children with other health issues and 56% less than mothers of typically developing children (Cidav, Marcus, & Mandell, 2012). Fortunately, early intervention can mitigate some of the financial strain and help improve behavioral skills, but families facing new financial hardships often struggle to gain access to necessary support resources.

In other situations, economic stressors may predate the ASD diagnosis (i.e., in cases where children were born into families living in poverty), and this scenario poses unique challenges for identification and treatment. For example, children with ASD who come from lower income or racial/ethnic minority families are more likely to be diagnosed later and to be underdiagnosed (Roux et al., 2012). In many cases, these families are coping with other risk factors that tend to co-occur with low income, and these risk factors may exacerbate family stress and associated child behavior problems. Some of these poverty cofactors include residential and relationship instability, single parenthood, teen parenthood, and low levels of parental education. In studies of young children without ASD, the presence of poverty cofactors such as these predicts behavior problems even after accounting for the impact of family income on behavior problems (e.g., Ackerman, Schoff, Levinson, Youngstrom, & Izard, 1999). In addition, cumulative risk research shows that, as the number of poverty cofactors accumulates, child behavior problems increase (Evans, Li, & Whipple, 2013). During early childhood, higher levels of cumulative risk lead to behavior problems by undermining parent responsivity (Trentacosta et al., 2008), a process that fits with the core mechanisms outlined in the FSM. Moreover, a recent study reports that higher levels of cumulative risk during infancy are linked with difficulties in toddlers' development of self and social cognitive skills such as joint attention and self-recognition, an association that seems to stem from the finding that mothers facing more poverty-related risk factors exhibit lower levels of parenting responsivity (Wade, Moore, Astington, Frampton, & Jenkins, 2015). Although the Wade et al. study focused on a normative sample of children, the findings may have implications for the ASD population because genetically driven social cognitive deficits associated with ASD might be worsened by poverty cofactors that undermine parental responsivity and heighten family stress.

Negative effects of low income and poverty cofactors on family functioning and child adjustment have also been documented among families with children with ASD. In secondary analyses based on data collected in the large, population-based Millenium Cohort Study in the United Kingdom, Midouhas, Yogaratnam, Flouri, and Charman (2013) found that families of children with ASD have higher levels of household chaos and socioeconomic disadvantage than families of children without ASD. Moreover, higher levels of poverty among families of children with ASD are associated with symptoms of psychopathology (conduct problems and emotional problems) above and beyond intellectual ability of the child and low birthweight. In addition, in these analyses, mothers of children with ASD exhibit less maternal warmth, a factor that explains the relationship between poverty and broad psychopathology (Midouhas et al., 2013). Conversely, more maternal warmth predicts fewer conduct problems and less hyperactivity, whereas household chaos predicts more conduct problems (Midouhas et al., 2013).

Similarly, in other research, Flouri, Midouhas, Charman, and Sarmadi (2015) found that children with ASD and comorbid ADHD are at high risk for emotional problems but only if they are from socioeconomically disadvantaged families. The authors conclude that this is likely the result of the accumulation of risk factors. Taken together, results from these studies suggest that poverty and associated contextual risk factors like household chaos and less-optimal parenting quality contribute to behavioral problems in children with ASD. These contextual risk factors may be important targets for preventive intervention designed to mitigate the risk of escalating behavior problems among young children with ASD.

Parenting Stress

Parenting stress is a multifaceted construct that includes parents' negative emotional responses to stressors in the home, their negative views of their children, and their tendency to engage in harsh reactive parenting practices (Deater-Deckard, 2004). Parenting stress is a robust correlate of parents' broader well-being (e.g., Lavee, Sharlin, & Katz, 1996), and it may play a crucial role in exacerbating behavior problems among young children with ASD. Longitudinal research suggests that parenting stress declines across early childhood, with the highest levels of stress observed during toddlerhood (Williford, Calkins, & Keane, 2007). This developmental progression of parenting stress coincides with the normative trajectory of behavior problems that tends to peak during toddlerhood and declines during the preschool period. There are also individual differences in parenting stress across families, and higher levels of parenting stress are associated with more behavior problems and less social competence during early childhood (Anthony et al., 2005). Moreover, the association between parenting stress and child behavioral maladjustment is at least somewhat distinct from the association between observed parenting behavior and children's maladjustment.

The notion of parenting stress is especially germane to families of young children with ASD. This is because deficits in social interaction and communication are characteristic of the disorder and may heighten parenting stress. Learning of the child's diagnosis can be difficult for parents and is often the first major struggle, but autism is a lifelong condition that can lead to chronically elevated stress among parents and caregivers throughout the lifespan (Karst & Van Hecke, 2012). Results from a meta-analytic review confirm that parenting stress is quite common among parents of children with ASD (Hayes & Watson, 2013). Mothers of children with ASD report significantly higher levels of parenting stress than mothers of typically developing children (Brobst, Clopton, & Hendrick, 2008; Davis & Carter, 2008; Kiani, Reza, & Hashjin, 2014; McStay, Dissanayake, Scheeren, Koot, & Begeer, 2013; Phetrasuwan & Shandor Miles, 2009; Quintero & McIntyre, 2010; Rao & Beidel, 2009), children with Down syndrome (Dabrowska & Pisula, 2010; Eisenhower, Baker, & Blacher, 2005), children with developmental delay without autism (Estes et al., 2009), and children with chronic physical health conditions (Gupta, 2007). From the perspective of the FSM, parenting stress may be a key factor among families raising a child with ASD because it links financial hardship and other socioeconomic stressors often encountered by these families with their child's elevated behavior problems. However, we are not aware of studies that have formally tested this association in a population with ASD.

Although research indicates that the severity of the child's autism is predictive of parents' elevated stress levels (Benson & Karlof, 2009), numerous other studies also suggest that this stress is the result of the sometimes intense behavior problems that are common among children with ASD (Abbeduto et al., 2004; Blacher & McIntyre, 2006; Brobst et al., 2008; Estes et al., 2009; Hastings et al., 2005). In a study of families raising children with ASD, children's negative behavioral symptoms are the primary source of parenting stress for mothers, and mothers who report more parenting stress also report more depressive symptoms and lower levels of maternal well-being (Phetrasuwan & Shandor Miles, 2009). Contrasting results are reported by Eisenhower et al. (2005), however. In that study, mothers of children with autism report the highest levels of parenting stress relative to mothers of typically developing children or children with other disabilities even after controlling for children's behavior problems and current cognitive skills.

Poorer well-being among parents of children with ASD extends beyond parenting stress. For example, parents of young children recently diagnosed with ASD report more daily parenting hassles than parents of preschoolers without ASD (Quintero & McIntyre, 2010). They also have more parent-child relationship problems and higher levels of depressive symptoms (Davis & Carter, 2008). Notably, the most consistent predictor of these parental problems is the extent of the child's delays or deficits in social relatedness. In other research, mothers and fathers of children with ASD report three and five times more anxiety and depression, compared to norms for the general adult population (Bitsika, Sharpley, & Bell, 2013). Moreover, the pervasive nature of the defining features of autism makes it especially likely that it will have a significant impact on the lives of the individuals caring for children with ASD in multiple ways. As detailed previously, the strain associated with parenting a child with ASD may disrupt caregiver roles and undermine family relationships, as well as straining financial resources and putting constraints on work and leisure time (Glasberg, Martins, & Harris, 2006; Gray, 1998). Moreover, parents of children with ASD are more likely to experience social isolation and spousal relationship problems, especially if they also lack social support or utilize escape-avoidance coping strategies, such as avoiding others, hoping for miracles, or denying the reality of the situation (Dunn, Burbine, Bowers, & Tantleff-Dunn, 2001).

Despite experiencing substantial stress and poorer psychosocial well-being, parents of children with ASD often show markers of positive adjustment and resilience. For example, mothers of children with ASD report that they have positive relationships with their children in the sense that they do not lack emotional closeness with them or exhibit cold patterns of parent-child interaction (Hoffman, Sweeney, Hodge, Lopez-Wagner, & Looney, 2009). In fact, mothers of children with ASD are more likely to report a close relationship with their child and better coping with parenting tasks than parents of children without ASD (Montes & Halterman, 2007). According to Koegel et al. (1992), the main differences between families of children with ASD and other families are that the families of children with ASD, regardless of children's age or functioning level, or the families' geographical location or cultural orientation, have more concerns regarding the well-being of their child in the future, their child's level of cognitive impairment and ability to function independently, and the likelihood that their child will be accepted in the community. These concerns translate into a greater need for parents to obtain intervention services for their child, which can be very expensive and place great financial strain on families of children with ASD.

Interventions to Support Low-Income Families

It is widely agreed that early screening and family-based intervention are effective ways to reduce morbidity and the lifetime costs associated with ASD (Corsello, 2005). Unfortunately, low-income families often face more barriers to receiving these kinds of services than their higher-income counterparts. The American Academy of Pediatrics (AAP) recently called for universal autism screening so that at-risk children can be identified in a timely way and receive appropriate services (Johnson & Myers, 2007). Despite this recommendation, young children in the United States from impoverished backgrounds face barriers to access to screening. Their families might also be less likely to engage in clinical services for ASD or participate in evidence-based treatments. For example, low-income families of children with ASD are less likely to participate in support groups (Mandell & Salzer, 2007). Unfortunately, little is known about the impact of socioeconomic stressors on participation in evidence-based treatments for ASD because research samples tend to be homogenous (Rogers & Vismara, 2008). Furthermore, studies of parent-mediated treatments for ASD have not considered the role of parent sociodemographic characteristics as moderators of the effectiveness of treatment (Lang, Machalicek, Rispoli, & Regester, 2009).

Studies of behavioral parent training among families who have young children with other behavioral and developmental disorders provide evidence that socioeconomic factors impact treatment engagement and treatment effectiveness. For example, low socioeconomic status and minority group membership predict treatment non-completion during behavioral parent training for young children with oppositional defiant disorder (Lavigne et al., 2010). A recent study of young children with developmental delays also reported that families with higher levels of cumulative risk are more likely to drop out of behavioral parent training (Bagner & Graziano, 2012). Regarding treatment outcomes, a meta-analysis of parent training shows that socioeconomically disadvantaged families tend to benefit from parent training immediately following treatment, at least when child behavior problems were severe (Leijten, Raaijmakers, Orobio de Castro, & Matthys, 2013). However, disadvantaged families benefit less from parent training at follow-up assessments, leading the authors to recommend continued support following intervention for these families. Overall, the evidence suggests that novel and nontraditional approaches to developmental screening and intervention may be warranted to meet the needs of socioeconomically disadvantaged families parenting a child with ASD.

To address the issue of reduced access to screening, Roux and colleagues launched an innovative 2-1-1 Los Angeles County Developmental Screening Project (2-1-1 LA Project; Roux et al., 2012). A primary goal of the project was to provide telephone-based developmental and autism screening to underserved low-income, ethnically diverse children living in the greater Los Angeles metropolitan area. Children were screened for autism using the Modified Checklist for Autism in Toddlers (M-CHAT) and for developmental delays using the Parents' Evaluation of Developmental Status (PEDS). The results of their telephone screening show that a sizable number of underserved children living in poverty are indeed at heightened risk for developmental delays including ASD, indicating need for further evaluation and referral for services. Specifically, over a fourth of the sample (28.2%) were deemed to be at high risk for developmental delay, and over half (56%) were considered to be at moderate-to-high risk. Moreover, of the 1605 children screened for ASD using the M-CHAT, 21.2% were at heightened risk for ASD, although this study did not use the M-CHAT follow-up interview that increases this tool's utility (Robins et al., 2014). Fortunately, the investigators were able to provide follow-up care for the majority of children in their sample, which included referral for diagnostic services, enrichment programs (e.g., early childhood education), and intervention services. The finding from the 2-1-1 LA Project suggest that nontraditional approaches to developmental screening may be warranted in reaching and identifying underserved children at-risk for developmental problems.

Family-based interventions have also been adapted to meet the needs of low-income families with children with ASD. Although there is growing evidence that evidence-based family interventions are effective in improving the cognitive functioning (i.e., IQ, language, and social communication skills) and adaptive behavior of young children with ASD (e.g., Kasari, Gulsrud, Freeman, Paparell, & Helleman, 2012; Landa, Holman, O'Neill, & Stuart, 2011), the efficacy of such interventions for children with ASD from low-resourced families is less well established. To address this gap, Kasari and colleagues conducted a randomized control trial (RCT) to compare the efficacy of two short-term (3-month) interventions for 112 preschool-aged children with ASD and their low-income and/or Medicaid-eligible families. Families were randomly assigned to one of the two interventions (a group-based caregiver education intervention and an individualized caregiver-mediated intervention). The targeted outcomes included core deficits described for children with ASD: joint play (social engagement), joint attention skills, and symbolic play. These outcomes were assessed at three time points: pretest, posttest, and 3 months posttest.

Among their many findings, Kasari et al. (2014) provide compelling evidence for the efficacy of caregiver-mediated intervention for young children with ASD from low-resourced families. Although all children showed improvements in their joint engagement with others and their ability to initiate joint attention with a social partner, children in the caregiver-mediated intervention group exhibited significantly greater improvement in these skills. Moreover, children in the caregiver-mediated intervention were more likely to maintain gains in joint engagement over time (however, children in both groups maintained their gains in initiating joint attention skills). With regard to play skills, children in the caregiver-mediated intervention group exhibited greater improvement in symbolic (but not functional) play skills than children in the caregiver education intervention. Kasari and colleagues suggest that further work is needed to evaluate whether low-income children with ASD generalize these gains to other areas of functioning or maintain these skills over a longer period of time.

The intervention conducted by Kasari and colleagues provides an excellent example of relatively straightforward adaptations to established caregiver-mediated intervention approaches to meet the needs of low-income families. Specifically, the interventions were delivered in the families' homes and neighborhoods, and efforts were made to adapt to families' schedules by conducting sessions at night or on the weekend. In addition, the intervention sessions centered around everyday activities in the home setting that were identified by families as important. Although this approach goes a long way toward meeting the needs of low-income families of young children with ASD, additional therapeutic efforts could focus on offering support for the financial hardship, parenting stress, and associated concerns that often occur in these vulnerable families. These additional efforts would address the recent call to integrate aspects of parent and family functioning into treatments for ASD (Karst & Van Hecke, 2012). The remainder of this chapter describes the Family Check-Up (Dishion et al., 2008), a family-based intervention approach that could be adapted to meet the unique needs of families of young children with ASD.

The Family Check-Up

The Family Check-Up (FCU) model was originally developed to assist youth and their families during the transition to adolescence (Dishion & Kavanagh, 2003). The FCU has since been adapted for several other populations, including low-income families with toddler-aged children (Shaw, Dishion, Supplee, Gardner, & Arnds, 2006). The FCU for toddlers is a home visitation program that combines an emphasis on parenting and the family context that is often found in other home visiting programs for infants (e.g., the Nurse-Family Partnership; Olds, 2006) with a focus on problem behaviors that often occur during the "terrible twos." The FCU is led by a parent consultant; these consultants are typically masters-level mental health professionals with training in child development and parenting interventions.

The FCU involves at least three sessions that typically take place in the family's home. The first session is called the "get-to-know-you" visit where rapport is established between the parent consultant and the child's caregivers. The child's caregivers are asked to share information about their family and their child, including strengths and concerns. The second session is a formal assessment of multiple aspects of the family context, such as family well-being, parenting, and the child's temperament and behavior. Each aspect being assessed includes multiple subdomains. For example, subdomains within the family well-being domain include daily hassles, parental emotional well-being, parenting confidence, and the quality of the relationship between the child's parents and their significant others. For each subdomain, the family's score is classified along an axis ranging from "strength" to "needs attention" based on established norms for the measures. The third session is focused on providing feedback to the parents based on the findings from the assessment session. During this session, the parent consultant uses techniques informed by motivational interviewing (Miller & Rollnick, 2002) to enhance parents' motivation to address areas of functioning that are classified as needing attention or that the parent identifies as areas of concern. The parent consultant also guides caregivers in setting goals and addressing barriers to meeting goals. In some cases, additional visits with the parent consultant are scheduled to help parents meet their goals. For instance, additional visits might provide training to help parents address problematic child behaviors or address aspects of parental psychosocial functioning that could interfere with effective caregiving, such as a low level of social support, parental depression, or conflict between caregivers. The FCU is informed by a health-maintenance model of prevention, and parent consultants continue to visit families on a yearly basis using similar procedures.

Two RCTs provide evidence for the efficacy of the FCU among low-income families with a toddler-aged child. For both trials, mothers and their toddlers were recruited from the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), and families receiving the FCU were compared to demographically similar families in a no-treatment control condition. The first trial was conducted in Pittsburgh, PA, and the sample was limited to families with toddler-aged boys. The results of the first trial show that, relative to families in the control condition, families in the FCU group exhibited improvements in parental involvement and positive parenting and a reduction in child conduct problems after the first 2 years of the program (Gardner, Shaw, Dishion, Burton, & Supplee, 2007; Shaw et al., 2006). The second trial included families of boy or girl toddlers recruited from multiple sites (Charlottesville, VA, Eugene, OR, and Pittsburgh, PA). The results of the second trial also show that the FCU is linked to reductions in multiple forms of child behavior problems, including conduct, emotional, and co-occurring problems. However, the magnitude of the effect size for the reduction in problem behaviors was relatively modest ($d = 0.23$; Dishion et al., 2008). Furthermore, FCU effects on problem behavior were mediated by decreased maternal depression and increased positive parenting (Shaw, Connell, Dishion, Wilson, & Gardner, 2009). What is striking is that both trials led to reductions in child behavior problems even though families randomized to the FCU condition averaged less than four sessions per year.

Subsequent investigations of data collected in the FCU multisite trial have focused on moderators of treatment outcomes and longer-term impacts. The FCU was equally effective for families facing several poverty cofactors such as young parenthood (Gardner et al., 2009). In addition, the program was more effective for families with less educated parents. Follow-up of this sample into elementary school has documented parent-reported reductions in oppositional behavior problems from age 2 through 5 years and teacher-reported reductions in these behavior problems at age 7.5 years for children in the FCU group (Dishion et al., 2014). Moreover, children from intervention families who engaged in multiple check-ups across early childhood showed the steepest declines in oppositional behavior. When children were in elementary school, families in the FCU group also reported more use of formal (e.g., mental health counseling) and informal (e.g., help from relatives) services than families in the control group, and this effect was especially apparent among the families with the lowest socioeconomic status (Leijten et al., 2015). The investigators attribute this effect to the FCU's emphasis on enhancing family members' awareness of the difficulties they are facing and increasing their motivation to seek help in the community.

In summary, the FCU is a time- and cost-effective prevention program targeting child behavior problems and the family context that has been shown to be effective with multiple populations, including low-income families with toddlers. The rigorous research on the FCU supports its classification by the US Department of Health and Human Services as one of seventeen evidence-based early childhood home visiting service models (Avellar et al., 2014). Because the FCU is a flexible approach, it would be relatively straightforward to adapt this approach to meet the diverse needs of low-income families with young children with ASD. Families could be identified for the FCU at the time of the ASD diagnosis or soon thereafter, and a mental health professional (the parent consultant) could meet with the family to establish rapport and assess domains relevant to coping with the ASD diagnosis. These domains could include the family's financial resources, sources of social support, the parents' stress and broader well-being, as well as aspects of the child's functioning, including behavior problems. Then, the parent consultant could meet with the family on a separate occasion to share feedback on the family's functioning within these domains compared to established norms. Each family would have a unique profile of strengths and domains that merit further attention, and sources of strength could be highlighted by the consultant as resources for the family to build upon. Strategies from motivational interviewing could be utilized by the parent consultant to help the parents identify goals to address domains that merit attention. For example, if parenting stress is elevated, the parent consultant could help the parents explore how elevated stress may undermine their efforts to help their child, and the consultant and parents could work together to identify goals related to alleviating stress.

An adaptation of the FCU for families with young children with ASD could also be geared toward helping families explore the pros and cons of the various available treatment options for ASD based on the family's unique profile of strengths and areas of concern. This approach would fit with the recent emphasis on integrating aspects of parent and family functioning into treatments for ASD, and it would also help families process the potentially overwhelming array of treatment approaches (Karst & Van Hecke, 2012). As noted above, because the FCU is informed by a health-maintenance model of prevention, parent consultants continue to visit families on a yearly basis. For families with young children with ASD, the yearly check-up could be especially helpful as parents, the child, and other family members continue to adapt to the diagnosis and face additional transitions and stressors.

Summary and Conclusion

The family stress model describes how financial hardship impacts parents' functioning and children's maladjustment, and the processes leading from hardship to difficulties within the family milieu are especially salient to at-risk families with young children. Moreover, financial hardship and parenting stress are especially common among families with young children with ASD. Research is needed to elucidate how hardship and stress unfold from before the first symptoms of ASD emerge through the point of the ASD diagnosis and subsequent adaptation to the diagnosis. Moreover, modifications are needed to screening and intervention approaches to better meet the needs of low-income families with young children with ASD. Prevention approaches such as the Family Check-Up could be adapted to meet these families' needs. Providing such services could improve families' functioning and help them to better meet the needs of young children with ASD.

References

Abbeduto, L., Seltzer, M. M., Shattuck, P., Krauss, M. W., Orsmond, G., & Murphy, M. M. (2004). Psychological well-being and coping in mothers of youths with autism, Down syndrome, or fragile X syndrome. *American Journal of Mental Retardation, 109*, 237–254. https://doi.org/10.1352/0895-8017(2004)109<237:pwacim>2.0.co;2

Ackerman, B. P., Schoff, K., Levinson, K., Youngstrom, E., & Izard, C. (1999). The relations between cluster indexes of risk and promotion and the problem behaviors of 6- and 7-year-old children from economically disadvantaged families. *Developmental Psychology, 35*, 1355–1366.

Anthony, L. G., Anthony, B. J., Glanville, D. N., Naiman, D. Q., Waanders, C., & Shaffer, S. (2005). The relationships between parenting stress, parenting behaviour and preschoolers' social competence and behaviour problems in the classroom. *Infant and Child Development, 14*, 133–154. https://doi.org/10.1002/icd.385

Autism and Developmental Disabilities Monitoring Network. (2014). *Prevalence of autism spectrum disorder among children aged 8 years*. Atlanta, GA: Centers for Disease Control and Prevention.

Avellar, S., Paulsell, D., Sama-Miller, E., Del Grosso, P., Akers, L., & Kleinman, R. (2014). *Home visiting evidence of effectiveness review: Executive summary*. Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families.

Bagner, D. M., & Graziano, P. A. (2012). Barriers to success in parent training for young children with developmental delay: The role of cumulative risk. *Behavior Modification, 37*, 356–377. https://doi.org/10.1177/0145445512465307

Baker, D. L., & Drapela, L. A. (2010). Mostly the mother: Concentration of adverse employment effects on mothers of children with autism. *The Social Science Journal, 47*, 578–592. https://doi.org/10.1016/j.soscij.2010.01.013

Benson, P. R., & Karlof, K. L. (2009). Anger, stress proliferation, and depressed mood among parents of children with ASD: A longitudinal replication. *Journal of Autism and Developmental Disorders, 39*, 350–362. https://doi.org/10.1007/s10803-008-0632-0

Bitsika, V., Sharpley, C. F., & Bell, R. (2013). The buffering effect of resilience upon stress, anxiety and depression in parents of a child with an autism spectrum disorder. *Journal of Developmental and Physical Disabilities, 25*, 533–543. https://doi.org/10.1007/s10882-013-9333-5

Blacher, J., & McIntyre, L. L. (2006). Syndrome specificity and behavioural disorders in young adults with intellectual disability: Cultural differences in family impact. *Journal of Intellectual Disability Research, 50*, 184–198. https://doi.org/10.1111/j.1365-2788.2005.00768.x

Boyle, C. A., Boulet, S., Schieve, L. A., Cohen, R. A., Blumberg, S. J., Yeargin-Allsopp, M., et al. (2011). Trends in the prevalence of developmental disabilities in US children, 1997–2008. *Pediatrics, 127*, 1034–1042. https://doi.org/10.1542/peds.2010-2989

Brobst, J. B., Clopton, J. R., & Hendrick, S. S. (2008). Parenting children with autism spectrum disorders: The couple's relationship. *Focus on Autism and Other Developmental Disabilities, 24*, 38–49. https://doi.org/10.1177/1088357608323699

Cidav, Z., Marcus, S. C., & Mandell, D. S. (2012). Implications of childhood autism for parental employment and earnings. *Pediatrics, 129*, 617–623. https://doi.org/10.1542/peds.2011-2700

Conger, R. D., & Conger, K. J. (2002). Resilience in Midwestern families: Selected findings from the first decade of a prospective, longitudinal study. *Journal of Marriage and Family, 64*, 361–373. https://doi.org/10.1111/j.1741-3737.2002.00361.x

Conger, R. D., Conger, K. J., & Martin, M. J. (2010). Socioeconomic status, family processes, and individual development. *Journal of Marriage and Family, 72*, 685–704. https://doi.org/10.1111/j.1741-3737.2010.00725.x

Conger, R. D., & Donnellan, M. B. (2007). An interactionist perspective on the socioeconomic context of human development. *Annual Review of Psychology, 58*, 175–199. https://doi.org/10.1146/annurev.psych.58.110405.085551

Conger, R. D., & Elder, G. H., Jr. (1994). *Families in troubled times: Adapting to change in rural America*. New York, NY: Aldine de Gruyter.

Conger, R. D., Rueter, M. A., & Elder, G. H. (1999). Couple resilience to economic pressure. *Journal of Personality and Social Psychology, 76*, 54–71. https://doi.org/10.1037/0022-3514.76.1.54

Conger, R. D., Wallace, L. E., Sun, Y., Simons, R. L., McLoyd, V. C., & Brody, G. H. (2002). Economic pressure in African American families: A replication and extension of the family stress model. *Developmental Psychology, 38*, 179–193.

Corsello, C. M. (2005). Early intervention in autism. *Infants & Young Children, 18*, 74–85.

Dabrowska, A., & Pisula, E. (2010). Parenting stress and coping styles in mothers and fathers of pre-school children with autism and Down syndrome. *Journal of Intellectual Disability Research, 54*, 266–280. https://doi.org/10.1111/j.1365-2788.2010.01258.x

Davis, N. O., & Carter, A. S. (2008). Parenting stress in mothers and fathers of toddlers with autism spectrum disorders: Associations with child characteristics. *Journal of Autism and Developmental Disorders, 38*, 1278–1291. https://doi.org/10.1007/s10803-007-0512-z

Deater-Deckard, K. (2004). *Parenting stress and child development*. New Haven, CT: Yale University Press.

Dishion, T., & Kavanagh, K. (2003). *Intervening in adolescent problem behavior: A family-centered approach*. New York, NY: Guilford Press.

Dishion, T., Shaw, D., Connell, A., Gardner, F., Weaver, C., & Wilson, M. (2008). The family check-up with high-risk indigent families: Outcomes of positive parenting and problem behavior from ages 2 through 4 years. *Child Development, 79*, 1395–1414.

Dishion, T. J., Brennan, L. M., Shaw, D. S., McEachern, A. D., Wilson, M. N., & Jo, B. (2014). Prevention of problem behavior through annual family check-ups in early childhood: Intervention effects from home to early elementary school. *Journal of Abnormal Child Psychology, 42*, 343–354. https://doi.org/10.1007/s10802-013-9768-2

Dunn, M. E., Burbine, T., Bowers, C. A., & Tantleff-Dunn, S. (2001). Moderators of stress in parents of children with autism. *Community Mental Health Journal, 37*, 39–52. https://doi.org/10.1023/a:1026592305436

Eisenhower, A. S., Baker, B. L., & Blacher, J. (2005). Preschool children with intellectual disability: Syndrome specificity, behaviour problems, and maternal well-being. *Journal of Intellectual Disability Research, 49*, 657–671. https://doi.org/10.1111/j.1365-2788.2005.00699.x

Estes, A., Munson, J., Dawson, G., Koehler, E., Zhou, X.-H., & Abbott, R. (2009). Parenting stress and psychological functioning among mothers of preschool children with autism and developmental delay. *Autism, 13*, 375–387. https://doi.org/10.1177/1362361309105658

Evans, G. W., Li, D., & Whipple, S. S. (2013). Cumulative risk and child development. *Psychological Bulletin, 139*, 1342–1396. https://doi.org/10.1037/a0031808

Flouri, E., Midouhas, E., Charman, T., & Sarmadi, Z. (2015). Poverty and the growth of emotional and conduct problems in children with autism with and without comorbid ADHD. *Journal of Autism and Developmental Disorders*, 1–11. https://doi.org/10.1007/s10803-015-2456-z

Gardner, F., Connell, A., Trentacosta, C. J., Shaw, D. S., Dishion, T. J., & Wilson, M. N. (2009). Moderators of outcome in a brief family-centered intervention for preventing early problem behavior. *Journal of Consulting and Clinical Psychology, 77*, 543–553.

Gardner, F., Shaw, D. S., Dishion, T. J., Burton, J., & Supplee, L. (2007). Randomized prevention trial for early conduct problems: Effects on proactive parenting and links to toddler disruptive behavior. *Journal of Family Psychology, 21*, 398–406.

Glasberg, B. A., Martins, M., & Harris, S. L. (2006). Stress and coping among family members of individuals with autism. In M. G. Baron, J. Groden, G. Groden, & L. P. Lipsitt (Eds.), *Stress and coping in autism* (pp. 277–301). New York, NY: Oxford University Press.

Gray, D. E. (1998). *Autism and the family: Problems, prospects, and coping with the disorder*. Springfield, IL: Charles C. Thomas Publisher, Ltd.

Gupta, V. B. (2007). Comparison of parenting stress in different developmental disabilities. *Journal of Developmental and Physical Disabilities, 19*, 417–425. https://doi.org/10.1007/s10882-007-9060-x

Hastings, R. P., Kovshoff, H., Ward, N. J., Degli Espinosa, F., Brown, T., & Remington, B. (2005). Systems analysis of stress and positive perceptions in mothers and fathers of pre-school children with autism. *Journal of Autism and Developmental Disorders, 35*, 635–644. https://doi.org/10.1007/s10803-005-0007-8

Hayes, S. A., & Watson, S. L. (2013). The impact of parenting stress: A meta-analysis of studies comparing the experience of parenting stress in parents of children with and without autism spectrum disorder. *Journal of Autism and Developmental Disorders, 43*, 629–642. https://doi.org/10.1007/s10803-012-1604-y

Hoffman, C. D., Sweeney, D. P., Hodge, D., Lopez-Wagner, M. C., & Looney, L. (2009). Parenting stress and closeness: Mothers of typically developing children and mothers of children with autism. *Focus on*

Autism and Other Developmental Disabilities, 24, 178–187. https://doi.org/10.1177/1088357609338715

Jiang, Y., Ekono, M., & Skinner, C. (2015). *Basic facts about low-income children: Children under 6 years, 2013*. New York, NY: National Center for Children in Poverty, Mailman School of Public Health, Columbia University.

Johnson, C. P., & Myers, S. M. (2007). American Academy of Pediatric Council on Children with Disabilities: Identification of children with autism spectrum disorders. *Pediatrics, 120*, 1183–1215.

Karst, J. S., & Van Hecke, A. V. (2012). Parent and family impact of autism spectrum disorders: A review and proposed model for intervention evaluation. *Clinical Child and Family Psychology Review, 15*, 247–277. https://doi.org/10.1007/s10567-012-0119-6

Kasari, C., Gulsrud, A., Freeman, S. F., Paparell, T., & Helleman, G. (2012). Longitudinal follow-up of children with autism receiving targeted interventions on joint attention and play. *Journal of the American Academy of Child and Adolescent Psychiatry, 51*, 487–495.

Kasari, C., Lawton, K., Shih, W., Barker, T. V., Landa, R., Lord, C., et al. (2014). Caregiver-mediated intervention for low-resourced preschoolers with autism: An RCT. *Pediatrics, 134*, e72–e79. https://doi.org/10.1542/peds.2013-3229

Kiani, F., Reza, M., & Hashjin, H. K. (2014). A comparison study about association of stress and depression in children's mothers with and without autism spectrum disorders (ASD). *International Journal of Pediatrics, 2*, 31–38.

Koegel, R. L., Schreibman, L., Loos, L. M., Dirlich-Wilhelm, H., Dunlap, G., Robbins, F. R., et al. (1992). Consistent stress profiles in mothers of children with autism. *Journal of Autism and Developmental Disorders, 22*, 205–216. https://doi.org/10.1007/bf01058151

Landa, R. J., Holman, K. C., O'Neill, A. H., & Stuart, E. A. (2011). Intervention targeting development of socially synchronous engagement in toddlers with autism spectrum disorders: A randomized controlled trial. *Journal of Child Psychology & Psychiatry, 52*, 13–21.

Lang, R., Machalicek, W., Rispoli, M., & Regester, A. (2009). Training parenting to implement communication interventions for children with autism spectrum disorders (ASD): A systematic review. *Evidence-Based Communication Assessment and Intervention, 3*, 174–190. https://doi.org/10.1080/17489530903338861

Lavee, Y., Sharlin, S., & Katz, R. (1996). The effect of parenting stress on marital quality: An integrated mother-father model. *Journal of Family Issues, 17*, 114–135.

Lavelle, T. A., Weinstein, M. C., Newhouse, J. P., Munir, K., Kuhlthau, K. A., & Prosser, L. A. (2014). Economic burden of childhood autism spectrum disorders. *Pediatrics, 133*, 520–542. https://doi.org/10.1542/peds.2013-0763

Lavigne, J. V., LeBailly, S. A., Gouze, K. R., Binns, H. J., Keller, J., & Pate, L. (2010). Predictors and correlates of completing behavioral parent training for the treatment of oppositional defiant disorder in pediatric primary care. *Behavior Therapy, 41*, 198–211.

Leijten, P., Raaijmakers, M. A. J., Orobio de Castro, B., & Matthys, W. (2013). Does socioeconomic status matter? A meta-analysis on parent training effectiveness for disruptive child behavior. *Journal of Clinical Child & Adolescent Psychology, 42*, 384–392. https://doi.org/10.1080/15374416.2013.769169

Leijten, P., Shaw, D. S., Gardner, F., Wilson, M. N., Matthys, W., & Dishion, T. J. (2015). The family check-up and service use in high-risk families of young children: A prevention strategy with a bridge to community-based treatment. *Prevention Science, 16*, 397–406. https://doi.org/10.1007/s11121-014-0479-x

Mandell, D. S., & Salzer, M. S. (2007). Who joins support groups among parents of children with autism? *Autism, 11*, 111–122. https://doi.org/10.1177/1362361307077506

McStay, R. L., Dissanayake, C., Scheeren, A., Koot, H. M., & Begeer, S. (2013). Parenting stress and autism: The role of age, autism severity, quality of life and problem behaviour of children and adolescents with autism. *Autism, 18*, 502–510. https://doi.org/10.1177/1362361313485163

Midouhas, E., Yogaratnam, A., Flouri, E., & Charman, T. (2013). Psychopathology trajectories of children with autism spectrum disorder: The role of family poverty and parenting. *Journal of the American Academy of Child and Adolescent Psychiatry, 52*, 1057–1065. https://doi.org/10.1016/j.jaac.2013.07.011

Miller, W. R., & Rollnick, S. (2002). *Motivational interviewing: Preparing people for change* (2nd ed.). New York, NY: Guilford Press.

Montes, G., & Halterman, J. S. (2007). Psychological functioning and coping among mothers of children with autism: A population-based study. *Pediatrics, 119*, e1040–e1046. https://doi.org/10.1542/peds.2006-2819

Olds, D. L. (2006). The nurse-family partnership: An evidence-based preventive intervention. *Infant Mental Health Journal, 27*, 5–25.

Parke, R. D., Coltrane, S., Duffy, S., Buriel, R., Dennis, J., Powers, J., et al. (2004). Economic stress, parenting, and child adjustment in Mexican American and European American families. *Child Development, 75*, 1632–1656. https://doi.org/10.1111/j.1467-8624.2004.00807.x

Phetrasuwan, S., & Shandor Miles, M. (2009). Parenting stress in mothers of children with autism spectrum disorders. *Journal for Specialists in Pediatric Nursing, 14*, 157–165. https://doi.org/10.1111/j.1744-6155.2009.00188.x

Quintero, N., & McIntyre, L. L. (2010). Sibling adjustment and maternal well-being: An examination of families with and without a child with an autism spectrum disorder. *Focus on Autism and Other Developmental Disabilities, 25*, 37–46. https://doi.org/10.1177/1088357609350367

Rao, P. A., & Beidel, D. C. (2009). The impact of children with high-functioning autism on parental stress, sibling adjustment, and family functioning. *Behavior Modification, 33*, 437–451.

Robins, D. L., Casagrande, K., Barton, M., Chen, C. A., Dumont-Mathieu, T., & Fein, D. (2014). Validation of the modified checklist for autism in toddlers, revised with follow-up (M-CHAT-R/F). *Pediatrics, 133*, 37–45. https://doi.org/10.1542/peds.2013-1813

Rogers, S. J., & Vismara, L. A. (2008). Evidence-based comprehensive treatments for early autism. *Journal of Clinical Child & Adolescent Psychology, 37*, 8–38.

Roux, A. M., Herrera, P., Wold, C. M., Dunkle, M. C., Glascoe, F. P., & Shattuck, P. T. (2012). Developmental and autism screening through 2-1-1: Reaching underserved families. *American Journal of Preventive Medicine, 43*, S457–S463. https://doi.org/10.1016/j.amepre.2012.08.011

Scaramella, L. V., Sohr-Preston, S. L., Callahan, K. L., & Mirabile, S. P. (2008). A test of the Family Stress Model on toddler-aged children's adjustment among Hurricane Katrina impacted and nonimpacted low-income families. *Journal of Clinical Child and Adolescent Psychology, 37*, 530–541. https://doi.org/10.1080/15374410802148202

Sharpe, D. L., & Baker, D. L. (2007). Financial issues associated with having a child with autism. *Journal of Family and Economic Issues, 28*, 247–264. https://doi.org/10.1007/s10834-007-9059-6

Shaw, D. S., Connell, A., Dishion, T. J., Wilson, M. N., & Gardner, F. (2009). Improvements in maternal depression as a mediator of intervention effects on early childhood problem behavior. *Development and Psychopathology, 21*, 417–439.

Shaw, D. S., Dishion, T. J., Supplee, L., Gardner, F., & Arnds, K. (2006). Randomized trial of a family-centered approach to the prevention of early conduct problems: 2-year effects of the family check-up in early childhood. *Journal of Consulting & Clinical Psychology, 74*, 1–9.

Trentacosta, C. J., Hyde, L. W., Shaw, D. S., Dishion, T. J., Gardner, F., & Wilson, M. (2008). The relations among cumulative risk, parenting, and behavior problems during early childhood. *Journal of Child Psychology and Psychiatry, 49*, 1211–1219.

Wade, M., Moore, C., Astington, J. W., Frampton, K., & Jenkins, J. M. (2015). Cumulative contextual risk, maternal responsivity, and social cognition at 18 months. *Development and Psychopathology, 27*, 189–203. https://doi.org/10.1017/S0954579414000674

Williford, A. P., Calkins, S. D., & Keane, S. P. (2007). Predicting change in parenting stress across early childhood: Child and maternal factors. *Journal of Abnormal Child Psychology, 35*, 251–263. https://doi.org/10.1007/s10802-006-9082-3