



# Systems analysis of associations over time between maternal and sibling well-being and behavioral and emotional problems of children with autism



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## ABSTRACT

Taking a family systems perspective, several research studies have shown that the family context (especially maternal well-being) predicts psychological adjustment in children with autism. This work has mainly focused on dyadic relationships in the family (especially parent–child reciprocal effects). In the present study, we extended a systems perspective in autism family research to a triad involving the child with autism, their mother, and a sibling, and also adopted a longitudinal design. Mothers from 60 families of children with autism reported on their own depression, and the behavior problems and pro-social behavior of their child with autism and a sibling. Results from longitudinal regression models suggested that earlier levels of maternal depression and sibling pro-social behavior did not have an independent effect on the behavior problems or pro-social behavior of children with autism 2.5–3 years later. Earlier levels of sibling behavior problems were associated with increased behavior problems of the child with autism 2.5–3 years later. Although replication is required, these are the first data to suggest that outcomes for children with autism may be affected by their siblings' psychological adjustment. The methodology of longitudinal family systems analysis of triadic relationships has important research and practical implications.

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## 1. Introduction

Family systems theories hypothesize that the well-being of children and adults within a family is likely to be related (Cridland, Jones, Magee, & Caputi, 2014; Seligman & Darling, 2009; Trivette, Dunst, & Hamby, 2010). For autism family researchers, this perspective has led primarily to questions about the putative impact of various characteristics of the child with autism on other family members. Much of this existing research focuses on dyads within the family (Cridland et al., 2014). In particular, the behavior problems of children (and adults) with autism have been found in longitudinal research designs to predict psychological well-being in parents (Hartley, Barker, Baker, Seltzer, & Greenberg, 2012; Herring et al., 2006; Lecavalier, Leone, & Wiltz, 2006; Lounds, Seltzer, Greenberg, & Shattuck, 2007; Peters-Scheffer, Didden, & Korzilius, 2012), and in siblings (Hastings, 2007).

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Longitudinal research designs have provided mixed evidence of the impact of parental well-being on the behavioral and emotional problems of children with autism, despite the fact that models of family process would make this prediction (Patterson, 1982). Evidence from longitudinal studies of the impact of parental well-being on behavior problems of children with autism has been found in the pre-school period (Totsika et al., 2013) and across a wide age range in childhood (Lecavalier et al., 2006), but not in an adolescent/young adult only sample (Baker, Seltzer, & Greenberg, 2011). Longitudinal research with siblings (Hastings, 2007) has suggested no impact of sibling well-being on children with autism's behavioral and emotional problems over time.

The family system is of course more complex than a collection of dyadic relationships. Autism family researchers have also extended their analysis of the well-being of parents and siblings to consider the contributions of more than one other family member. For example, mental health or stress in mothers of children with autism has been associated with both fathers' well-being, and the behavior problems of their child with autism (Hastings, 2003; Hastings et al., 2005). In addition, sibling parent-reported and self-reported psychological adjustment has been explored in relation to both the behavior problems of the child with autism and parental mental health (Hastings & Petalas, *in press*; Petalas et al., 2012). Although these existing research studies are an important step in extending family systems research questions in the field of autism, the reliance on cross-sectional designs is a weakness.

Herring et al. (2006) reported a rare example of a longitudinal analysis of family systems research beyond dyadic relationships. Over 12 months in the pre-school period, Herring et al. found associations between earlier child behavior problems and mothers' but not fathers' stress, but no longitudinal association between their partner's earlier stress level and either later maternal or paternal stress. Herring et al.'s sample was a combined autism and non-autism group (with autism diagnosis as a predictor in the regression analyses). In addition to the lack of longitudinal research studies, family systems research beyond dyads has mainly placed parents or siblings at the center. That is, the psychological adjustment of the child with autism has rarely been explored in relationship to the well-being of more than one other family member.

Outside of autism family research, there has also been limited interest in multi-family member designs being used to address family systems questions especially in the case of triads involving children with disabilities, their siblings, and a parent. Hall, Burns, and Reiss (2007) modeled the behavior problems of children with Fragile X syndrome and their unaffected siblings in association with maternal anxiety and depression. These researchers found evidence consistent with an impact of both children's behavior problems on maternal anxiety and depression, but no association in the reverse direction. Hall et al.'s data were also from a cross-sectional study. Thus, the modeling was consistent with a unidirectional effect of both children on their mother but longitudinal data were not available.

The main aim of the present study was to extend existing autism family systems research and to build on Hall et al.'s (2007) study involving the child, sibling, and mother triad. We adopted a longitudinal design to explore whether maternal mental health (specifically depression) and sibling psychological adjustment (behavior problems and pro-social behavior) might predict the behavior problems and pro-social behavior of children with autism over time. Given that this is the first autism family research study to adopt this longitudinal systems approach, we had no specific expectations about the patterns of prediction that may emerge. Thus, the study was exploratory in nature.

## 2. Method

### 2.1. Participants

Data were gathered on mothers, siblings, and the child with ASD from 60 families at two points in time, 2.5–3 years apart. Demographic data are reported as of the first data collection point. The 60 mothers were all biological parents, and they all described themselves as "white" in terms of ethnicity ("White British"  $n = 59$ ; "Other White"  $n = 1$ ). The mothers were between 28 and 52 years of age, with a mean age of 42.07 years ( $SD = 4.84$  years). Most of the mothers were married or living with a partner ( $n = 53$ ), and seven were single or separated/divorced and not living with a partner. One half of the mothers had a university degree or equivalent (50%), and 65% of mothers were employed outside of the home. One half of the mothers (50%) reported having a total annual family income of £35,000 (approximately \$50,000 US dollars) and over. Forty-one of the families had two children living in the family home (the child with ASD and a sibling), with the remaining 19 families having at least two siblings alongside the child with ASD.

Siblings ( $n = 60$ ) who were closest in age to the child with an ASD, who did not have a disability or psychiatric diagnosis, were invited to participate in the research. Siblings' ages ranged from 4 to 17 years old (mean 10.64,  $SD = 4.45$  years). The gender split was even, with 30 male and 30 female siblings. In terms of relative age, 23 siblings were younger than their brother or sister with ASD, 35 older, and there were two families in which the child with autism and the sibling were twins. Thirty-two of the siblings were the same gender as the child with ASD.

The children with ASD in the families ranged from 4 to 15 years old, with a mean age of 9.78 ( $SD = 2.34$  years). The majority ( $n = 48$ ) was male. Most children were reported by their mothers to have a diagnosis of autism ( $n = 44$ ), and 16 were reported to have an Asperger syndrome diagnosis. On average, mothers reported that the diagnosis had been received three and a half years previously ( $SD = 2.45$  years; range 4 months to 10 years).

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