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Factors associated with depressive symptoms in parents of children with autism spectrum disorders

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ABSTRACT

Parents of children with autism spectrum disorders (ASDs) have higher rates of depressive symptoms than parents of typically developing (TD) children or parents of children with other developmental disorders. The purpose of this study was to examine child and parent sleep as factors associated with depressive symptoms in parents of children with ASDs. Participants included 34 families (17 ASD, 17 TD, 17 mothers and 11 fathers per group). Both objective sleep quantity (actigraphy) and subjective sleep quality were obtained, along with measures of parent depressive symptoms and child daytime behavior. Child sleep quantity was a significant predictor of maternal depressive symptoms, controlling for group and child behavior. Fathers sleep quality was a significant predictor of paternal depressive symptoms, controlling for child behavior and child sleep disturbances. This study suggests that along with child behavior, parent and child sleep variables are associated with parental depressive symptoms. Future studies should continue to use a multi-method measurement approach for sleep, and interventions that target child sleep should include parent sleep and parent daytime functioning as outcome variables.

1. Depressive symptoms in parents of children with autism spectrum disorders

Multiple studies have reported elevated levels of depressive symptoms and psychological distress in parents of children with autism spectrum disorders (ASDs). These differences have been found in parents of children with ASDs compared to parents of children with Down syndrome (Abbeduto et al., 2004; Piven et al., 1991), mental retardation (Weiss, 2002), fragile X syndrome (Abbeduto et al., 2004), developmental delay (Estes et al., 2009), as well as children who are typically developing (Hoffman, Sweeney, Hodge, Lopez-Wagner, & Looney, 2009; Weiss, 2002). Factors associated with these elevations in depressive symptoms and psychological distress have also been examined, with child daytime behavior being the most commonly identified variable (Abbeduto et al., 2004; Allik, Larsson, & Smedje, 2006; Estes et al., 2009; Herring et al., 2006). However, additional variables are needed to explain some of the variance not accounted for by child behavior or other demographic variables (Abbeduto et al., 2004; Hastings, 2003).

Sleep is one potential mechanism that may be associated with parental depressive symptoms. In general, chronic sleep disruption or sleep loss has been associated with increases in symptoms of negative mood (Dinges, Rogers, & Baynard, 2005). Sleep disruptions have also been correlated with psychiatric illnesses (Benca, 2005). In primary care patients, sleep disturbances were found to be the most significant predictor of depressive symptoms (Gerber et al., 1992), while sleep disturbances predicted psychiatric diagnoses in a long-term study of young adults (Breslau, Roth, Rosenthal, & Andreski,

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1996). Thus, it is important to consider the quantity and quality of sleep as a potential variable associated with depressive symptoms in parents of children with ASDs.

2. Sleep in children with ASDs and their parents

Sleep problems are common among children with autism spectrum disorders (ASDs), including prolonged sleep onset, frequent and/or prolonged night wakings (Honomichl, Goodlin-Jones, Burnham, Gaylor, & Anders, 2002; Patzold, Richdale, & Tonge, 1998; Souders et al., 2009; Wiggs & Stores, 2004; Williams, Sears, & Allard, 2004), and/or early morning sleep termination (Hering, Epstein, Elroy, Iancu, & Zelnik, 1999; Patzold et al., 1998; Wiggs & Stores, 2004). For families who have children with ASDs, parent sleep may be disturbed due to the increased supervision required when a child wakes during the night or in the early morning (Hering et al., 1999).

Studies of typically developing children have found that children's sleep disruptions were related to both parent sleep quantity and quality, as well as parent daytime functioning, including mood and parenting stress (Boergers, Hart, Owens, Streisand, & Spirito, 2007; Meltzer & Mindell, 2007). Similar results have been reported in families of children with ASDs, with children's disrupted, inconsistent, or insufficient sleep related to both parent sleep quality and parenting stress (Doo & Wing, 2006; Lopez-Wagner, Hoffman, Sweeney, Hodge, & Gilliam, 2008; Patzold et al., 1998). However none of these studies examined parental depression. In addition, these studies were limited by the inherent bias of a single reporter for all variables (i.e., parent reports on the child's sleep, parent reports on their own sleep, parent reports on their own daytime functioning).

3. A multi-method assessment approach for sleep

The most commonly used methods for assessing sleep are questionnaires and sleep diaries. Questionnaires provide a retrospective report on sleep quantity and quality, while sleep diaries ask participants to prospectively report on sleep quantity and quality. However, as mentioned, both types of measures can result in reporter bias when examining the relationship between sleep and another self-report measure such as depression. In the case of children, questionnaires and sleep diaries are also limited by parents not always being aware of exactly what time a child falls asleep or wakes up, or how long a child is awake after sleep onset, especially if the child does not alert the parents. Thus, an objective measure of sleep such as actigraphy should also be included.

An actigraph is a wrist-watch sized device that provides an estimate of sleep-wake patterns based on movement (Ancoli-Israel et al., 2003; Sadeh & Acebo, 2002). There has been a recent increase in studies that have included actigraphy for children with ASDs (Goodlin-Jones, Tang, Liu, & Anders, 2008; Hering et al., 1999; Souders et al., 2009; Wiggs et al., 2004). Notably, most of these studies have found discordance between objectively measured sleep (by actigraphy) and subjectively reported sleep (by parent) (Goodlin-Jones et al., 2008; Hering et al., 1999; Wiggs et al., 2004). However, the construct of sleep quantity (how much sleep someone obtains) is best measured objectively, while the construct of sleep quality is based on subjective report. Thus, it is important to utilize a multi-method measurement approach to capture both aspects of sleep.

In a previous report that included subjects from the current sample and a multi-method approach to sleep, parents of children with ASDs had poorer sleep quality, earlier wake times, and shorter total sleep times (Meltzer, 2008). The present study expands these results by examining child and parent sleep as potential factors associated with parent depression in both mothers and fathers of children with ASDs and typically developing (TD) children. Based on the current literature, it was hypothesized that child sleep and parent sleep would be associated with parent depressive symptoms, even when controlling for child behavior.

4. Method

4.1. Participants

Families of children with ASDs and families of TD children were included in the study if they had a child ages 4–10 years (inclusive). Children with an ASD were required to have a documented diagnosis from a physician or psychologist, as well as a score of >15 (cutoff point for children likely to have autism) on the Social Communication Questionnaire (SCQ) (Rutter, Bailey, & Lord, 2003), a well-validated parent-report screener for autism symptoms. Children in the TD group were required to have a score of <15 on the SCQ. Families in both groups were excluded if either the child or parent had been diagnosed by a physician with obstructive sleep apnea, narcolepsy, or restless legs syndrome, if the typically developing child had any type of chronic physical or developmental disorder, if there was a second child in the home with a chronic physical or developmental disorder, or if the parent was involved with shift work.

A total of 42 families enrolled in the study. However, actigraphy data were not obtained for the parent or child in 8 families (5 ASD, 3 TD; 4 actigraphs had a technical failure, 4 subjects did not wear the actigraph). Since this study examined the relationship between objective and subjective measures, as well as the relationship between child and parent sleep, only families where both the parent and child's actigraphy data were available were included in these analyses. Thus, the final sample for this report includes 34 families. There were no significant differences found for any variables of interest (demographics, subjective sleep quality, child behavior, and parent depressive symptoms) between the reported study sample and families who were missing actigraphy data.