

Sleep in autistic children and impact on parental stress

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ABSTRACT

The aim of this study was to examine the impact sleep quality of autistic children had on parental stress levels. Parental report was collected from five mothers who had children who had previously been diagnosed on the autism spectrum. Parents were recruited from a small sensory gym while their children were participating in class. The modified Children's Sleep Habits Questionnaire (CSHQ) and Parental Stress Scale were utilized to collect data. Consistent with previous research it appeared that sleep problems in autistic children correlated with increased parent stress levels as reported on the Parental Stress Scale. Maladaptive bedtime behaviors had a significant correlation with parent's stress levels compared to other aspects of the modified CSHQ. The results of this study should be utilized with previous research to provide evidence for the inclusion of sleep as an intervention focus for autistic children. Interventions aimed at helping these children improve their quality of sleep could help decrease the amount of stress seen in parents.

Key terms: autism, autism spectrum disorder, ASD, sleep, parent, parent stress.

Introduction

Sleep in Autistic Children and Impact on Parental Stress

Sleep is a necessity for all human beings and is required to adequately function in daily life. Sleep quality can impact one's physical health, quality of life, safety, and mental health.¹ Without adequate sleep, people may have difficulty controlling their emotions and behavior during the day. For children, this may lead to difficulties in school.

Autism Spectrum Disorder (ASD) is a prevalent disorder impacting 1 in 44 children in the United States.² ASD is characterized as a developmental disability caused by differences in the brain that lead to communication, social, and stereotyped behavioral problems impacting the individual's daily life.³ The disorder is described as a spectrum disorder as children can benefit from tiered support in a variety of skill areas. ASD is usually diagnosed in children around age two but can also occur earlier or later in development depending on symptom severity.³ The autism community has started to recognize use of identity-first language (autistic child) to be used instead of person-first language to fully embrace autistic identity. An autistic child can display problems in different settings such as school versus at home. While ASD can significantly impact a child's life, it can also have a unique impact on the lives of the child's parents.

Considering the amount of care autistic children require and the energy parents may expend communicating with their child, Dabrowska and Pisula (2010) found parents of autistic children appear to have a higher level of stress in comparison to parents of children with Down Syndrome (DS) or typical development (TD).⁴ Differences between parents of autistic children and DS included stressors related to dependency ($p > .0001$), life span care ($p < .0001$), and limits

on family opportunity ($p < .0001$).⁴ Having an autistic child appears to lead to additional stress surrounding their care and reliance on a parental figure. Different characteristics and the severity of the child's manifestation of ASD can also impact parental stress. Communication and social skills appear to be significant indicators for higher parental stress levels because of the impact it has on the child-parent bond.⁵ With the increased prevalence of ASD, it will be important to address the connection of stress and sleep in both the autistic child and the parent.

Problem Statement

Poor sleep patterns experienced in autistic children, have been linked to increased behavioral problems during the day.⁶ Autistic children who had poor sleep quality showed an increase in hyperactivity, physical aggression, inattention, and irritability.⁶ This escalation in symptoms exacerbated the parent's stress level leading to more difficulties for both the child and the parent. The relationship between poor sleep of the child, increased problem behaviors, and parent's stress becomes a perpetual cycle. The prolonged stress can create health problems for the parents.

Autistic children often exhibit sleep difficulties which increase maladaptive daytime behaviors and this impacts parental stress leading to poor health outcomes for parents. Increased, prolonged parental stress can be related to decreased health-related quality of life (QoL).⁷ In comparison to parents of children with TD, health related QoL for parents of autistic children was diminished, which may have been impacted by the increased daytime behaviors seen in autistic children who had poor sleep quality. There appears to be a high correlation of stress with the increased number of health-related problems for parents with autistic children. According to Reed et al. (2016), parents of autistic

children also reported a higher amount of physical health problems related to immune function.⁷ High stress can also lead to cardiovascular disease which perpetuates the strain on these parents.⁸

Methodology

This literature review includes scholarly, peer-reviewed articles found from multiple databases. Key words during searches included autism, autism spectrum disorder, parent stress, sleep, family stress, sleep quality, and sensory processing. Sources were included that included scientific information and focused on autistic children and their parents' stress levels. Sources were excluded that focused on autistic adults' sleep quality, sibling stress, or personal reports. Data were summarized in narrative to explore the impact sleep quality in autistic children has on parents' stress levels.

Literature Review

Sleep in Autistic Children and Typical Development

Many studies have looked to examine if quality of life is impacted in a variety of ways in autistic children. The sleep quality of these children is an emerging area of interest. Researchers have begun to investigate the differences in sleep quality and behavior in autistic children and those with typical development (TD). Sounders et al. (2009) conducted a descriptive cross-sectional study to examine the prevalence of sleep problems in autistic children and TD.⁹ Parent report measures and actigraphy, an electronic device measuring objective sleep data, were utilized to gather data. Autistic children showed significant differences on sleep behaviors such as sleep terrors ($p=.009$), bed wetting ($p=.035$), and bruxism ($p=.002$).⁹ The study revealed children in the ASD group had a 66.1% prevalence rate for sleep disturbances, while the children with TD only had a 45% rate.⁹

In a study conducted by Krakowiak, Goodlin-Jones, Hertz-Picciotto, and Croen (2008), similar differences between autistic children and TD were also found.¹⁰ Sleep problems were seen "frequently" ($p<.0001$) or "always" ($p<.05$) in 53% of autistic children compared to 32% of children with TD. Autistic children appeared to sleep on average an hour less than their peers with TD ($p<.0001$). The study also found more autistic children (24%) had problems with onset of sleep compared to children with TD (9%). Night wakings were also more common for the autistic children than the children with TD ($p=.001$).¹⁰ Both studies revealed the significant difference in sleep behavior and quality in children with and without ASD.

Characteristics of Sleep in Autistic Children

Researchers have begun to examine what leads to autistic children having poor sleep quality and what areas of sleep are impacted. The Children's Sleep Habits Questionnaire (CSHQ) is a parent report measure examining nine

domains of sleep behavior such as bedtime resistance and sleep onset delay.¹¹ With many researchers utilizing the CSHQ, similarities between studies have emerged.¹¹⁻¹³ Characteristics of sleep that are problematic for many autistic children are described below.

Sleep Characteristics

When (what time) a child falls asleep and how long it takes them to fall asleep is often included in screenings for sleep problems. Parents of autistic children list sleep onset as one of their major concerns when it comes to their children's sleep habits.¹¹ Autistic children often have problems falling asleep often noted on parental reports on the CSHQ.¹¹ Bedtime resistance is also often observed in autistic children. Malow et al. (2006) additionally found bedtime resistance as a major problem for autistic children who were classified as poor sleepers ($p<.0421$).¹¹ In another study, Liu et al. (2006) reported 56.3% of the autistic children in their study displayed bedtime resistance.¹² These children were also more likely to have problems with insomnia and morning rise. Characteristics associated with bedtime resistance included allergies, hypersensitivity, bedsharing, and father's sleep problems.¹²

Insomnias (56.3%) and parasomnias (53.3%) were also extremely prevalent in autistic children.¹² Conditions such as asthma were associated with elevated scores for insomnias, while younger age, use of medication, and bedtime ritual were linked with frequent parasomnias. Gastrointestinal problems were associated with higher prevalence of insomnias and parasomnias.¹² Factors which did not appear to impact the child's sleep problems included type of ASD, severity of diagnosis, gender, bedtime and rise time, number of family members, environmental factors, married status of parents, and maternal education.¹² Understanding the common sleep characteristics seen in autistic children can help researchers understand what may be causing the increase in sleep problems.

Sensory processing

Autistic children tend to have problems with sensory processing which can lead to increased sleep problems.^{13,14} Both studies have examined the impact a sensory processing problem has on the child's sleep quality. Reynolds et al. (2012) reported 81% of children in their study had a significant score in at least one quadrant on the Sensory Profile.¹⁴ When the child scored in the sensation avoiding quadrant, there was significant correlation with sleep problems ($p=.011$). These children may find it difficult to filter sensory information which can lead to trouble calming down to go to bed and to sensory over-responsiveness.¹⁴ Mazurek and Petroski (2015) also examined sensory processing and sleep in autistic children.¹³ They found significant correlation between sensory over-responsiveness and increased scores on the CSHQ ($p<.001$). This arousal dysregulation may

contribute to the sleep problems witnessed in autistic children. Sensory over-responsiveness may interfere with sleep quality due to the sensory stimuli present during the sleep environment such as noise, light, and temperature.¹³ Sensory processing is often seen in autistic children and further research on its connection to sleep problems is needed.

Anxiety

Anxiety levels in autistic children are also associated with increased maladaptive sleep behaviors. A study was conducted to examine the impact of anxiety on sleep problems. According to Mazurek and Petroski (2015), anxiety appeared to have a significant negative impact on bedtime resistance ($p < .001$), sleep-onset delay ($p < .001$), sleep duration ($p < .001$), sleep anxiety ($p < .02$), and night wakings ($p < .001$).¹³ Anxiety seemed to impact many of the common sleep problems experienced by autistic children. Malow et al. (2006) also examined anxiety levels in autistic children.¹¹ The Child Behavior Checklist (CBCL) was used to examine anxious symptoms expressed by the children per parental report. They found there was a significant increase in anxious symptoms in autistic children who had poor sleep problems ($p < .0156$).¹¹ Anxiety seems to frequently occur in autistic children and appears to relate to decreased sleep quality.

Impact of Sleep Quality on Autistic Children

Daytime behaviors. When a child has decreased sleep quality, they are more likely to display increases in maladaptive daytime behaviors. For autistic children, these increased behaviors may be displayed as frequent and more severe characteristics of ASD. According to Tudor, Hoffman, and Sweeney (2012), “Sleep disturbances, problems with sleep onset, and short sleep duration were associated with all autism symptoms as well as overall autism severity” (p. 258).¹⁵ Children who reported decreased quality of sleep appeared to display more stereotyped behaviors, social impairments, and communication difficulties. The decreased quality of sleep appeared to increase the severity of the characteristics of ASD.¹⁵

Mazurek and Sohl (2016) also examined how decreased sleep impacted how the child behaved during the day.⁶ In their study, the behavioral characteristics of aggression, hostility, inattention, and hyperactivity were examined in 81 autistic children. When investigating these behaviors in relation to scores on the CSHQ, autistic children appeared to show increased maladaptive behaviors. Parents who reported their children had increased daytime sleepiness, also noted increased hyperactivity ($p < .01$). Nighttime awakenings were significantly correlated with increased physical aggression ($p < .0001$), inattention ($p < .01$), and hyperactivity ($p < .05$). Children who had high levels of sleep anxiety appeared to be more irritable during the

day. The study also noted sleep duration and parasomnias negatively impacted all four behaviors.⁶ Children who display sleep quality impairments appear to have increased ASD symptomology severity and increased maladaptive behaviors during the day.^{6,15}

Quality of life. Sleep quality can also negatively impact quality of life (QoL). Delahaye et al. (2014) examined the impact of sleep problems in autistic children on their health-related quality of life (HRQoL).¹⁶ Results from the study indicated lower HRQoL in all domains for autistic children compared to the normative population. Physical functioning, psychosocial function, and total functioning were significantly lower for autistic children ($p < .0001$). The children’s total score on the CSHQ correlated with decreased total and psychosocial scores of HRQoL ($p < .0001$). The child’s sleep duration appeared to have a significant correlation on the total and psychosocial scores of HRQoL ($p < .001$). This decrease in HRQoL present in these autistic children can have an impact on their daily lives. Delahaye et al. (2014) make note of this connection to emphasize the role poor sleep quality can have on the QoL of autistic children.¹⁶

Impact of Child’s Sleep on Parents

Sleep. When an autistic child sleeps poorly, it appears to impact the parent’s sleep quality as well.¹⁷⁻¹⁹ Meltzer (2008) conducted a study examining the difference in sleep of parents with autistic children and TD.¹⁹ Participants included 20 families with autistic children and 15 families of children with TD. Meltzer (2008) examined the sleep of the parents by utilizing the Pittsburgh Sleep Quality Index (PSQI), actigraphy, and sleep diaries.¹⁹ The study revealed parents of autistic children had poorer wake time ($p < .01$) and actual sleep time ($p < .05$) compared to parents with TD children. Fathers of autistic children reported earlier wake times ($p < .01$) and shorter sleep duration ($p < .01$) compared to mothers from the same family.¹⁹ This may be due to factors other than the child’s diagnosis, such as work schedules. Mothers reported significant differences on the scales of actual sleep time ($p < .001$), sleep efficiency ($p < .05$), and longest sleep period ($p < .05$) when compared to mothers of TD children.¹⁹ It is to be expected if a autistic child does not have quality sleep behaviors, it would impact the parent’s sleep as well. Limitations from Meltzer’s study included lack of information regarding the child’s sleep habits to examine if a relationship existed between the child and parent’s sleep quality.¹⁹ Hodge et al. (2013) examined the relationship between child and parent sleep quality and found the quality of a child’s sleep is a significant indicator for impaired maternal sleep ($p < .001$).¹⁸ When a parent has poor sleep habits, they can be at an increased risk for higher stress levels.

Stress level. Parents of autistic children are already at an increased risk of higher stress levels.^{4,5} Since the autistic child has difficulties with sleep quality, the purpose of this

study is to examine if the child's poor sleep quality impacts the increased stress seen in their parents. Levin and Scher (2016) examined the relationship between child's sleep quality and parent's stress level in families with children with and without ASD.²⁰ The autistic children displayed more frequent sleep problems compared to children with TD ($p=.02$). The sleep domains of bedtime resistance, sleep onset delay, sleep duration, sleep anxiety, night wakings, and parasomnias were significantly correlated with increased maternal stress levels.^{17,20} Mothers expressed increased worry about their child's safety during the night compared to mothers of children with TD.²⁰

Hodge et al. (2013) also examined the direct impact of the sleep quality in an autistic child on maternal mental health.¹⁸ Their study examined 180 mothers and their child with half of the participants having autistic children. In this study, the quality of a child's sleep was a significant indicator for maternal mental health and maternal stress ($p<.001$). When examining the participants who had children with TD, there also appeared to be a correlation between the quality of sleep of the TD child and mother leading to higher levels of maternal stress ($p<.001$). Mothers of autistic children in the study also reported they viewed poor sleep quality as minor compared to other aspects of their child's disability as it contributes to their stress level.¹⁸ While it appeared there was a relationship between the child's sleep quality and maternal stress levels, it did not seem sleep problems were major stressors for mothers of autistic children.

Summary

An autistic child appears to have poor sleep habits when compared with children with TD.^{9,10} This decreased sleep quality seems to impact the child's behaviors during the day and overall quality of life.^{6,15} The poor sleep appears to also impact more than just the child, but also impacts parents. Parents of autistic children are already displaying higher stress levels than parents of children with TD.^{4,5} When their child has poor sleep, it appears to impact parents by increasing their stress levels, decreasing their mental health, and impairing their sleep quality.¹⁷⁻¹⁹ This study aims to explore the relationship between the sleep quality of an autistic child and the impact it has on parental stress levels to examine if sleep is a major contributor to parental stress.

Method

Participants

Five families participated in the study. All participants who filled out the questionnaire packet consisted of married mothers of autistic children. Mother's age ranged from 38 to 43 ($M=40.2$). Three of the mothers reported full-time or part-time employment, while two mothers were considered stay-at-home. The children's age ranged from 4.5 to 12

($M=8.3$). All the children were participants in the sensory program and were male.

Questionnaires

The modified Children's Sleep Habits Questionnaire (CSHQ) was created to distinguish sleep differences in autistic children.²¹ It is a parent report measure examining a child's bedtime, sleep behavior, wakings during the night, and morning wake up. The measure consists of 22 items to be ranked on a scale from 0 (never) to 7 (always). The authors found parts of the Children's Sleep Habits Questionnaire to be irrelevant when used with the ASD population. The Modified CSHQ requires additional testing to examine test-retest reliability, validity, and relevance, and to examine its impact on typically developing children. The original CSHQ developed by Owens, Spirito, and McGuinn (2000) has been utilized in many studies to examine sleep in children.²² Psychometric properties of the original CSHQ include .78 internal consistency rate when examining a clinical sample. The measure also had good validity which was confirmed with the clinical sample having significantly higher or worse scores on all subscales compared to the community group ($p<.001$). The original CSHQ also showed stable test-retest reliability.²²

The Parental Stress Scale is a self-report measure examining 18 items about varying aspects of parenthood both positive and negative.²³ Participants rate each item on a five-point scale from 1 (strongly disagree) to 5 (strongly agree). A higher score on the scale correlates with a higher level of stress. The scale has been examined for both parents of children with typical and atypical development. The scale has internal reliability of $r=.83$ and test-retest reliability of $.81$.²³ In a study conducted by Zelman and Ferro (2018), the scale was examined for use with families of children with chronic health conditions.²⁴ Internal consistency reliability was reported as $a=.84$, and the measure reported good validity in comparison with another standardized assessment.²⁴

Procedure

This study received Institutional Review Board (IRB) approval from Bay Path University. Approval from a local community center was sought out as they were running a sensory group for children with and without ASD. The program met daily after school to provide sensory experiences to the children involved. Parents sit outside of the sensory gym and were asked if they would be willing to fill out a few surveys. Parents who consented to the study were given the demographic form, modified CSHQ, and the Parental Stress Scale. Parents returned these forms when they were done to the investigator. Scoring of the Parental Stress Scale and CSHQ were completed by the researcher, and SPSS was used to run a two-tailed Pearson correlation test.

Results

After parent completion of the questionnaire packets, analysis was completed. All the children had their own bedrooms except for one child who shared his room with a twin. Time spent on bedtime routines with the child varied greatly among the participants. Parents reported spending as little as 20 minutes to over an hour with their child to get them to fall asleep. Most participants had a set bedtime routine which may have included putting on pajamas, brushing teeth, reading a story, watching a television show, and showering/bathing. Only one parent reported their child took naps rarely, while the other children never engaged in napping. Three parents reported being concerned about their child's bedtime routine or sleep quality. The modified CSHQ scores can range from 0 to 88. For this study, the average score on the modified CSHQ ranged from 17 to 32 ($M=23.6$). Child's age was not significantly correlated with the child's scores on the modified CSHQ. Child sleep duration also did not appear to impact the parent's reported score on the CSHQ. The bedtime subscale had the highest scores on the modified CSHQ when compared to the subscales of sleep behavior, waking, and morning wake.

When parents were asked about their sleep patterns, three parents reported having a difficult time falling asleep or staying asleep. Scores on the Parental Stress Scale can range from 18-90, with higher scores indicating greater stress. In this study, parent's scores ranged from 41 to 55 ($M=47.6$). Parents agreed with the statement, "The major source of stress in my life is my child(ren)" in four of the five participants. Parents also reported they agreed or strongly agreed (80%) having children has left them with little time and flexibility in their life. The majority of the parents (80%) agreed or strongly agreed they are satisfied as a parent and find their children enjoyable. Parent's scores on the Parental Stress Score were significantly correlated with increased scores on the bedtime subscale of the modified CSHQ ($p<.059$). Parental Stress Scores were not associated with parent age, child age, parent concern, parent sleep, child's total score on the modified CSHQ, or child's sleep duration.

Discussion

From the previous literature, autistic children often have increased sleep difficulties.^{9,10} From the research study, children did show increased difficulties with the bedtime behavior subscale on the modified CSHQ. While the sample size was small, there was evidence to support the presence of sleep difficulties in autistic children. The current study failed to confirm the sleep differences between children with ASD or TD since a control group was not utilized. Children

also did not appear to have decreased sleep duration unlike findings from previously stated research. Since the current study was not focused on children's sleep on their daytime behavior, there were no significant conclusions sleep has an impact on their behavior, but much research has shown a correlation between poor sleep quality in autistic children and an increase in maladaptive daytime behavior.

The current study aimed to examine the relationship between sleep quality in autistic children and the impact it has on parental stress levels. While the participants did not report significant sleep differences in the children, the participants did express a slight increase in parental stress. The participant's score on the Parental Stress Scale was significantly correlated with the child's score on the bedtime behavior subscale. This confirms findings in which sleep quality in autistic children does have an impact on parental stress levels.¹⁷⁻¹⁹ Similar to the findings of Hodge et al. (2013), parents did not appear to rank their child's sleep difficulties as a significant contributor to their stress level, but the majority of participants in this study did appear to find their child's sleep quality concerning.

Limitations

There were limitations in this study. The sample size ($n=5$) was very small and was considered a convenience sample based on which parents brought their children to the sensory program. The participants also consisted of only mothers, and the data cannot be generalized to fathers of autistic children. With such a small sample size, the results can only attempt to support the evidence already published regarding child's sleep and parent stress. The data were also collected by parent report and consisted only of subjective data. Future research would have to include objective data to examine the child's sleep quality and more in depth questionnaires regarding parental stress.

Conclusion

When working with an autistic child, it is also important to include the parent because they often have an increased level of stress. Since sleep is essential and considered an activity of daily living by the American Occupational Therapy Association, it is important for occupational therapy practitioners to address sleep in both the autistic child and their parent. Starting to examine interventions which could help an autistic child receive a better quality sleep may help reduce parental stress. Researchers have begun to examine the positive impact behavioral interventions have on sleep in autistic children. With interventions being developed to improve sleep quality in autistic children, reductions in parent's stress levels may appear decreasing the negative impact stress has on parent's quality of life.

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Appendix B

Questionnaire Packet

Demographic Form

Thank you for participating in this study. Please take some time to fill out this demographic form along with the two attached questionnaires.

1. Age of person filling out this form: _____
2. Relationship to child: _____
3. Marital status: _____
4. Employment status: Full-Time Part-Time Self-Employed Stay-at-Home Unemployed
5. Number of people living in household: _____
6. Children in household: _____
7. Age of child involved in Sensiplay: _____
8. Gender of child: _____
9. Child's grade in school: _____
10. Does the child have any medical diagnoses? _____
11. Does the child have his/her own bedroom? Yes No
12. How long does a bedtime routine take daily? _____
13. How often does the child sleep in his/her own bed? _____
14. What does the child's bedtime routine consist of? _____

15. Are you concerned by your child's bedtime routine or sleep quality? Yes No
16. On average, when do you fall asleep each night? _____
17. When do you begin your bedtime routine? _____
18. Do you have a difficult time falling asleep or staying asleep? Yes No

**CHILDREN’S SLEEP HABITS QUESTIONNAIRE
(ABBREVIATED)**

The following statements are about your child’s sleep habits and possible difficulties with sleep. Think about the past week in your life when you answer the questions. If last week was unusual for a specific reason, choose the most recent typical week. Unless noted, check Always if something occurs every night, Usually if it occurs 5 or 6 times a week, Sometimes if it occurs 2 to 4 times a week, Rarely if it occurs once a week, and Never if it occurs less than once a week.

BEDTIME

Write in your child’s usual bedtime: Weeknights ____ : ____ am/pm

Weekends ____ : ____ am/pm

	7 Always	5-6 Usually	2-4 Sometimes	1 Rarely	0 Never
1. Child goes to bed at the same time at night.	()	()	()	()	()
2. Child falls asleep within 20 minutes after going to bed.	()	()	()	()	()
3. Child falls asleep alone in own bed.	()	()	()	()	()
4. Child falls asleep in parent’s or sibling’s bed.	()	()	()	()	()
5. Child falls asleep with rocking or rhythmic movements.	()	()	()	()	()
6. Child needs special object to fall asleep (doll, special blanket, stuffed animal, etc.).	()	()	()	()	()
7. Child needs parent in the room to fall asleep.	()	()	()	()	()
8. Child resists going to bed at bedtime.	()	()	()	()	()
9. Child is afraid of sleeping in the dark.	()	()	()	()	()

SLEEP BEHAVIOR

Write in your child’s usual amount of sleep each day (combining nighttime sleep and naps):

____ hours and ____ minutes

	7 Always	5-6 Usually	2-4 Sometimes	1 Rarely	0 Never
10. Child sleeps about the same amount each day.	()	()	()	()	()
11. Child is restless and moves a lot during sleep.	()	()	()	()	()

NICHD SECCYD—Wisconsin

	7 Always	5-6 Usually	2-4 Sometimes	1 Rarely	0 Never
12. Child moves to someone else's bed during the night (parent, sibling, etc.).	()	()	()	()	()
13. Child grinds teeth during sleep (your dentist may have told you this).	()	()	()	()	()
14. Child snores loudly.	()	()	()	()	()
15. Child awakens during the night and is sweating, screaming, and inconsolable.	()	()	()	()	()
16. Child naps during the day.	()	()	()	()	()
Write in the number of minutes the nap usually lasts: _____ minutes					

WAKING DURING THE NIGHT

	7 Always	5-6 Usually	2-4 Sometimes	1 Rarely	0 Never
17. Child wakes up once during the night.	()	()	()	()	()
18. Child wakes up more than once during the night.	()	()	()	()	()

MORNING WAKE UP

Write in the time child usually wakes up in the morning: Weekdays _____ : _____ am/pm

Weekends _____ : _____ am/pm

	7 Always	5-6 Usually	2-4 Sometimes	1 Rarely	0 Never
19. Child wakes up by him/herself.	()	()	()	()	()
20. Child wakes up very early in the morning (or, earlier than necessary or desired).	()	()	()	()	()
21. Child seems tired during the daytime.	()	()	()	()	()
22. Child falls asleep while involved in activities.	()	()	()	()	()

Parental Stress Scale

The following statements describe feelings and perceptions about the experience of being a parent. Think of each of the items in terms of how your relationship with your child or children typically is. Please indicate the degree to which you agree or disagree with the following items by placing the appropriate number in the space provided.

1 = Strongly disagree 2 = Disagree 3 = Undecided 4 = Agree 5 = Strongly agree

- ___ 1. I am happy in my role as a parent.
- ___ 2. There is little or nothing I wouldn't do for my child(ren) if it was necessary.
- ___ 3. Caring for my child(ren) sometimes takes more time and energy than I have to give.
- ___ 4. I sometimes worry whether I am doing enough for my child(ren).
- ___ 5. I feel close to my child(ren).
- ___ 6. I enjoy spending time with my child(ren).
- ___ 7. My child(ren) is an important source of affection for me.
- ___ 8. Having child(ren) gives me a more certain and optimistic view for the future.
- ___ 9. The major source of stress in my life is my child(ren).
- ___ 10. Having child(ren) leaves little time and flexibility in my life.
- ___ 11. Having child(ren) has been a financial burden.
- ___ 12. It is difficult to balance different responsibilities because of my child(ren).
- ___ 13. The behavior of my child(ren) is often embarrassing or stressful to me.
- ___ 14. If I had it to do over again, I might decide not to have child(ren).
- ___ 15. I feel overwhelmed by the responsibility of being a parent.
- ___ 16. Having child(ren) has meant having too few choices and too little control over my life.
- ___ 17. I am satisfied as a parent.
- ___ 18. I find my child(ren) enjoyable.

Berry, J. O., & Jones, W. H. (1995). The Parental Stress Scale: Initial psychometric evidence. *Journal of Social and Personal Relationships*, 12, 463-472.

Appendix C Data Analysis

Correlations

Notes	
<p>Output Created Comments Input</p> <p style="margin-left: 40px;">Active Dataset</p> <p style="margin-left: 40px;">Filter</p> <p style="margin-left: 40px;">Weight</p> <p style="margin-left: 40px;">Split File</p> <p style="margin-left: 40px;">N of Rows in Working Data File</p> <p>Missing Value Handling</p> <p style="margin-left: 40px;">Definition of Missing</p> <p style="margin-left: 40px;">Cases Used</p> <p>Syntax</p> <p>Resources</p>	<p style="text-align: right;">28-APR-2018 12:27:07</p> <p>DataSet()
<none></p> <p><none></p> <p><none></p> <p style="text-align: right;">5</p> <p>User-defined missing values are treated as missing.</p> <p>Statistics for each pair of variables are based on all the cases with valid data for that pair.</p> <p>CORRELATIONS</p> <p>/VARIABLES=Parentstresscale CSHQ Bedtime Sleepbehavior waking morningwake Parentage Childage Parentconcern Parentsleep childsleepduration</p> <p>/PRINT=TWOTAIL NOSIG</p> <p>/MISSING=PAIRWISE.</p> <p style="text-align: right;">00:00:00.00</p> <p style="text-align: right;">00:00:00.00</p>

Correlations

		Parentstresscale	CSHQ	Bedtime	Sleepbehavior	waking	morningwake	Parentage	Childage	Parentconcern	Parentsleep	childsleepduration
Parentstresscale	Pearson Correlation	1	.717	.863	-.228	-.133	-.272	-.735	-.019	-.017	-.254	-.286
	Sig. (2-tailed)		.173	.059	.712	.831	.657	.157	.975	.978	.680	.641
	N	5	5	5	5	5	5	5	5	5	5	5
CSHQ	Pearson Correlation	-.717	1	.928	-.351	.210	-.313	-.346	-.092	.508	-.744	-.389
	Sig. (2-tailed)	.173		.023	.562	.734	.608	.568	.884	.382	.150	.517
	N	5	5	5	5	5	5	5	5	5	5	5
Bedtime	Pearson Correlation	.863	.928	1	.020	.290	-.524	-.689	-.301	.329	-.706	-.185
	Sig. (2-tailed)	.059	.023		.974	.836	.385	.217	.623	.580	.183	.786
	N	5	5	5	5	5	5	5	5	5	5	5
Sleepbehavior	Pearson Correlation	-.228	-.351	.020	1	-.117	.206	.678	.293	.244	-.299	-.239
	Sig. (2-tailed)	.712	.562	.974		.851	.740	.208	.632	.692	.625	.699
	N	5	5	5	5	5	5	5	5	5	5	5
waking	Pearson Correlation	-.133	.210	.290	-.117	1	-.765	-.344	-.872	.480	-.784	.490
	Sig. (2-tailed)	.831	.734	.636	.851		.132	.571	.054	.413	.116	.402
	N	5	5	5	5	5	5	5	5	5	5	5
morningwake	Pearson Correlation	-.272	-.313	-.524	.206	-.765	1	.686	.952	.047	.688	-.717
	Sig. (2-tailed)	.657	.608	.385	.740	.132		.201	.012	.940	.199	.173
	N	5	5	5	5	5	5	5	5	5	5	5
Parentage	Pearson Correlation	-.735	-.346	-.689	.678	-.344	.686	1	.580	.126	.309	-.284
	Sig. (2-tailed)	.157	.568	.217	.208	.571	.201		.305	.840	.612	.644
	N	5	5	5	5	5	5	5	5	5	5	5
Childage	Pearson Correlation	-.019	-.092	-.301	.293	-.872	.952	.580	1	-.013	.621	-.793
	Sig. (2-tailed)	.975	.884	.623	.632	.054	.012	.305		.983	.264	.110
	N	5	5	5	5	5	5	5	5	5	5	5
Parentconcern	Pearson Correlation	-.017	.508	.329	.244	.480	.047	.126	-.013	1	-.612	-.510
	Sig. (2-tailed)	.978	.382	.589	.692	.413	.940	.840	.983		.272	.380
	N	5	5	5	5	5	5	5	5	5	5	5
Parentsleep	Pearson Correlation	-.254	-.744	-.706	-.299	-.784	.688	.309	.621	-.612	1	-.125
	Sig. (2-tailed)	.680	.150	.183	.625	.116	.199	.612	.264	.272		.841
	N	5	5	5	5	5	5	5	5	5	5	5
childsleepduration	Pearson Correlation	-.286	-.389	-.185	-.239	.490	-.717	-.284	-.793	-.510	-.125	1
	Sig. (2-tailed)	.641	.517	.786	.699	.402	.173	.644	.110	.380	.841	
	N	5	5	5	5	5	5	5	5	5	5	5

*. Correlation is significant at the 0.05 level (2-tailed).