Comparison of Online and Face-to-Face Parent Education for Children with Autism and Co-occurring Sleep Problems

A majority of children who have autism spectrum disorder (ASD) also have sleep problems. Lack of sleep can make these children's activities of daily life more challenging for themselves, their families, and the people around them. Many of the communication, sensory, and social issues of children with ASD including repetitive behaviors, hyperactivity, and mood disorders contribute to sleep problems (Hollway, Aman, & Butter, 2013; Jeste, 2011). Poor sleep may be related to aggression and oppositional behavior (Mayes & Calhoun, 2009).

Research regarding teaching parents how to help their children sleep has shown improvement in children’s sleep and family functioning (Johnson et al., 2013; Reed et al., 2009). The problem is that these teaching sessions have been conducted through face-to-face small groups and many families live far from an autism center, have difficulty finding someone to watch their child during the sessions, or cannot attend at scheduled times. In consideration of these issues, we decided to investigate whether online classes could show the same advantages for improved sleep as face-to-face classes.

Design

With funding from the Organization for Autism Research, we embarked on a two-year pilot study to compare face-to-face parent sleep classes with online classes to see whether one was more effective. To help us determine this, we asked families to complete sleep diaries and the following questionnaires before and after the program: Child Sleep Habits Questionnaire (CSHQ), Parent Fatigue Assessment, and Pediatric Quality of Life (QOL) Inventory. We also examined data from a parent teaching checklist, a satisfaction survey, and from Actiwatch™ readings. Actiwatches look like FitBits™ that are worn on the wrist and record movement and
light and allow researchers to collect scores for sleep factors like length of sleep and amount of awakenings. We also mailed a demographic survey to the families so that we could note how alike or different the participants in each group were by characteristics such as parents’ education, marital status and child’s sex, age, therapies, and medications. The parent teaching checklist let us know which strategies the parents were actually using to help their children sleep.

We recruited parent participants from autism centers at two hospital developmental clinics and community autism support sites. The primary investigator designed classes based on the work of Reed and colleagues (2009) and made videos that dramatized some of the strategies parents and children could use to help them sleep. We were able to set up a Moodle™ site for the online sessions in a manner that individual’s confidentiality could not be breached. Parents of children with ASD between the ages of 4 to 12 were then assigned to either class based on the child’s age, level of functioning on the spectrum, and parents’ ability to attend either online or face-to-face sessions.

Results

After parents consented and children who were 7 years or older assented (if capable), pre-education intervention surveys and an Actiwatch were mailed in order to establish a baseline for each child’s sleep and the parents’ fatigue and QOL. After both classes were complete, another set of surveys was sent at 4 weeks and at 8 weeks. Thirty-five parents consented to the study and 23 completed their classes and returned all of the surveys. Ten parents completed the online and 13 completed the face-to-face sessions and measures. Some children could not tolerate wearing an Actiwatch and they were still included as study completers.

We used statistical models to look for differences between groups and over time:

- For total the fatigue score we found a significant difference between the groups, with the
online group showing a significant decrease over time in parents’ fatigue. The parents of the face-to-face group did not show significant changes in fatigue over time.

- For child’s wakings on the CSHQ, we also found a significant difference between the groups, with the online group showing a significant decrease in wakings over time while the face-to-face group did not show a significant change over time.
- None of the other variables showed a difference between the groups, but we did find significant changes over time. For both groups, there was an increase in parents’ QOL; a decrease in child’s bedtime resistance, sleep delays, bedtime anxiety, and CSHQ total (lower score = better sleep) and an increase in sleep duration.
- The Actiwatch readings did not show any differences between groups over time.
- The satisfaction surveys were similar between groups except that the face-to-face group was much more satisfied with being able to talk or blog with other parents.

Discussion

For this small sample of families, online methods were as effective for helping parents manage their child’s sleep and improve their QOL as face-to-face methods. In some of our measures, online was even better than face-to-face. Parents were less fatigued and their children woke less during the night. Decreased awakenings was not confirmed by the Actiwatch readings but there are many outside factors that could have influenced our findings. We realized from the satisfaction surveys that we will need to find an online learning platform that makes communicating with other parents easier and more attractive to all participants.

We learned many things in this pilot study. Recruiting and retaining parents was challenging because of major life events (e.g. moving to a different state, deaths in the family, parental separation, or birth of another child). After the first year, we offered a research incentive
(a cash card) to encourage parents to return all of their survey data. Return, postage-paid envelopes were sent with each set of surveys and the Actiwatches. For some parents, completing the surveys, diaries, satisfaction surveys, and monitoring the Actiwatch may have been burdensome. That said, when offering future non-research programs to help parents help their child sleep, they would not face these study burdens. In the meantime, obtaining data is necessary to determine the effects of two different methods.

Another finding of the study was that parents really seemed to enjoy interacting with other parents in the face-to-face classes. Many times parents asked the other parents for their contact information so that they could keep in touch. They seemed to be a great support for each other as demonstrated by their comments during class or breaks. Our hope was that online parents would blog in order to access social support, but this was used infrequently and by only a few participants. The method for blogging in the Moodle site was improved during the study as well, but the upgrade did not increase use. Some parents wanted the sessions to be more of an open discussion than an instructional format. In order to make the findings more comparable, the same format needed to be used in both types of training (in this case, an instructional format needed to be used for both groups). The main researcher kept in contact with the parents to give support, ask about any issues, and to encourage them to contact each other.

Recommendations

Since good sleep is essential to children with ASD and their families, we believe that future studies should be conducted with larger number of participants and in other areas of the country to provide more evidence that online sleep education improves sleep and family functioning. One way to decrease the cost of these studies and parental burden would be to eliminate the use of Actiwatches, but we then would also lose an objective measure of sleep.
The premise of this and other sleep education studies is that children with ASD and poor sleep, along with their families, are in need of intervention to the same degree and at the same time as other therapies. Children may be more receptive to other therapies (such as speech, occupational, physical, behavioral) if they have had a good night’s sleep. Additionally, improved family sleep can alleviate parents’ fatigue and allow them to assist their child’s sleep through use of consistent routines.

One in 68 children in the United States has ASD and up to 80% of these children have sleep problems. Therefore, a sleep education program that is easily accessible to a large number of families and is inexpensive is in everyone’s best interest. Online methods using similar instruction as face-to-face teaching could offer these similar benefits.
References


