PROBLEMATIC SLEEPING BEHAVIOURS

A MANUAL FOR PARENTS OF CHILDREN WHO ARE DIAGNOSED WITH AUTISM SPECTRUM DISORDER WHO ENGAGE IN PROBLEMATIC SLEEPING BEHAVIOURS

By

Chelsea Vineyard

A thesis submitted to the School of Community Services in partial fulfillment of the requirements for the degree of Bachelor of Applied Arts in Behavioural Psychology

St. Lawrence College
Kingston, Ontario
Canada.
April, 2016

The procedures in the staff training manual are meant to be used by agency staff, as part of the broader services they provide, or under supervision of agency staff.
Dedication

To my beloved Grandpa who always believed in me and taught me to believe in myself.
Abstract

It is estimated that sleep problems occur in 63-73% of children diagnosed with Autism Spectrum Disorder (ASD) (Wachob & Lorenzi, 2015). The purpose of the study was to uncover the type of sleeping problems that may occur in children with autism and to provide parents with a resource that can help them deal with their child’s problematic sleeping behaviours. There were seven parents of children who attended the nursery school who participated in the study. All the parents in the study have children who are diagnosed with ASD. Data was collected through the use the Albany Sleep Problems Scale (Durand, 2008). All the participants were asked to fill out the scale based on their child’s problematic sleeping behaviours. The results indicated from the Albany Sleep Problems Scale (Durand, 2008) provided data needed to understand the sleep problems that the children were engaging in. The results showed problems such as: children playing too much before bedtime, children having trouble going to bed, children waking during the night, movement during the night, and children wetting the bed during the night. The problems from the scale were used to create a step-by-step manual for parents to use when dealing with their child’s problematic sleeping behaviours. The titles of the sections in the manual were: Good Sleep Habits, Night Time Routines, How Much Sleep a Child Needs, Waking During the Night, and Difficulty Falling Asleep.
Acknowledgment

I want to take this time to thank the people who were there for me and supported me through not just the time of writing my thesis but the last four years.

I want to thank my parents for being there and cheering me on. I could not have done it without your support and love not just in the last for years but my entire life.

I want to thank my sister Katrina for reminding me to have fun during the stressful times and cheering me on. I cannot wait to show you the same support and love you showed me when you go to university.

Also, I would like to thank my 4th year supervisor Glenna Hunter for guiding me through my final year of my degree. Thank you for being patient, supportive and encouraging throughout this process.

Finally, I want to thank everyone else who were there for me over the last 4 years and helped me make memories I won’t ever forget.
Table of Contents

Dedication ........................................................................................................................................ ii
Abstract ............................................................................................................................................... iii
Acknowledgment ............................................................................................................................... iv
Table of Contents ................................................................................................................................ v
List of Figures ..................................................................................................................................... vii

Chapter I: Introduction .................................................................................................................. 1

Chapter II: Literature Review ......................................................................................................... 4
  Sleep Needs of Children .................................................................................................................... 4
  Effects on Family ............................................................................................................................. 4
  Sleep Interventions ........................................................................................................................ 4
  Bedtime Routine .............................................................................................................................. 4
  Planned Ignoring ............................................................................................................................ 5
  Graduated Extinction ....................................................................................................................... 5
  Faded Bedtime ................................................................................................................................ 6
  Physical Activity ............................................................................................................................ 7
  Scheduled Awakenings ................................................................................................................... 7
  Circadian Rhythm Management ................................................................................................... 7
  Chronotherapy ............................................................................................................................... 8
  Current Study ............................................................................................................................... 8

Chapter III: Method .......................................................................................................................... 9
  Participants ....................................................................................................................................... 9
  Design ............................................................................................................................................. 9
  Setting/Apparatus .......................................................................................................................... 9
  Measures ......................................................................................................................................... 9
    Albany Sleep Problems Scale (ASPS) ......................................................................................... 10
    Social Validity Questionnaire .................................................................................................... 10
List of Figures

Figure 1. All average scores given for questions that indicate higher numbers signify greater problem. 13

Figure 2. All average scores given for questions that indicate low numbers signify a greater problem. 14

Figure 3. All answers given on the Albany Sleep Problems Scale for Yes/No Questions. 15
Chapter I: Introduction

This thesis aimed to uncover the types of problematic sleeping behaviours of children whom have been diagnosed with Autism Spectrum Disorder (ASD). Also, the aim was to provide a resource for parents that may help them to address the problematic sleeping behaviours at home.

It is estimated that sleep problems occur in 63-73% of children diagnosed with ASD (Wachob & Lorenzi, 2015). Though children with autism are at high risk of developing sleep disorders, the disorders need not to be life-long. There are many behavioural strategies used by parents and consultants to decrease children’s behavioural problems before the children become adults. It is important for parents to increase their knowledge of sleep skills strategies that can be used to help their children go to sleep and remain asleep at night without the use of medication.

Sleep is an important aspect for all children’s growth and development. Mazurek & Petroski (2015) state that during the day children can become irritable, non-compliant, have increased severity of stereotypic behaviours, feel drowsy, and are self-injurious when they are not getting enough sleep. The authors say that these behaviours can interfere with the child’s ability to learn and grow physically and mentally. When children have enough sleep at night it allows for brain growth, healing of the body, the ability to function during the day, and stay alert all day without needing a nap (Hanley, 2014).

Sleep is not just an important part of a human’s life but it is a necessity to function (Durand, 2008). Durand (2008) states that when children are first born they need multiple naps during the day and can take them without disruption of their sleep patterns. But as they get older the naps are not needed as much and it is more significant to get a good sleep at night. When it comes to how long children should sleep at night it is important for parents to know their child and know how much sleep their child needs during the night to be able to succeed during the day. Matricciani, Blunden, Rigney, Williams and Olds (2012) suggested that the optimal sleep time is reflective on desirable outcomes for during the day such as health, performance and mood.

Sleeping problems in children can also put a strain on their family and the child’s relationship with family members. This strain can occur if the child does not get a proper amount of sleep at night or is constantly waking up the parents and other family members (Tilford et al., 2015). In households where there are multiple children, there can be more than one up at night. In these types of situations, siblings sleep may be disrupted due to the behaviour of the child with the sleeping problem. This can lead to the family members not getting enough sleep at night and can cause them to be tired the next day. If that process continues over multiple nights, parents and family members can become irritable and unable to function properly. When the child is not sleeping at night, the parents are no longer getting time for themselves and that can cause increased frustration (Tilford et al., 2015). Those aspects can eventually cause strain on the parents’ relationship.

Even after many options have been exhausted to fix the sleeping problem, there is still evidence of problems occurring. Jin, Hanley, and Beaulieu (2013) state that although it has been suggested that sleeping problems decrease with age, after seeing the strength of these problems, the evidence does not support this common perception. When sleeping problems start it is important that they be corrected right away. If they are left until a later time and not dealt with
PROBLEMATIC SLEEPING BEHAVIOURS

properly they will continue to get worse and be more challenging to stop the longer they occur (Jin, Hanley, and Beaulieu, 2013).

Jin et al., (2013) state that the most common concerns around sleep occur because of a lack of night time routine, delayed sleep, night time awakenings, sleep interfering behaviour, and early awakenings. Children can also be deprived of sleep that can occur from: insufficient amounts of sleep, extended time since last sleep, and poor quality of sleep (Jin et al., 2013). These problems could be corrected if dealt with when they begin.

Jin et al., (2013) state that the need for treatments to address sleep problems in children both with and without ASD is overwhelmingly obvious because of the information found from parents about their children. Techniques other than the use of medication to fix these problems have increased (Jin et al., 2013). Parents are using their pediatricians for assistance when it comes to correcting sleep problems. However due to the lack of training they receive pertaining to sleep, they tend to suggest to parents that their children will outgrow the problems; consequently, treatments are not being prescribed (Jin et al., 2013). Due to this issue of not suggesting specific treatments, we are faced with the problem of doctors over prescribing medications in children with disabilities. Parents are now leaning toward the use of behavioural consultants and teams that use techniques that will not adversely affect the children. (Jin et al., 2013).

The data collected to write this thesis derived from a nursery school for children diagnosed with ASD. The early childhood educators were informed before the thesis began that there are many children at the nursery school that engage in problematic sleeping behaviours. Information for the parents about sleeping treatments was needed at the agency, therefore a manual was created to further educate the parents. In order to find out what was needed in the manual, parents were asked to fill out a scale about their child’s sleeping behaviours. Although every child has different sleeping patterns, there are common strategies parents can use to help decrease their child’s problematic sleeping behaviours.

After finding out what these problematic sleep behaviours were, a manual was created for the parents to read. The manual was designed to help the parents deal with and understand their child’s behaviours and how to handle the behaviours when they occur before bedtime, during the night, and in the morning. The motivation for the manual was to increase the parents’ knowledge about sleeping habits in children with and without ASD and to increase the knowledge of the early childhood educators working at the nursery school. The manual also aimed to help the early childhood educators at the agency to give basic information to the parents about sleeping problems. Another objective of the thesis was to find topics that parents struggle to understand and to create a manual that might help them understand that topic more. The manual was also created to provide a resource for the parents so they are able to easily access the required information and get further help from there.

The following four chapters of the thesis project discusses the thesis topic about sleeping problem treatments for children with ASD. It also discusses the research literature on sleeping problems and the treatments used in greater detail. The first chapter is the literature review; this chapter describes research being done on sleeping behaviours of children. It also describes strategies used by behavioural consultants to decrease problematic sleeping behaviours. Next, the method section describes the development of the manual, the participants, setting, measures, and materials. The results chapter of the thesis describes the overall results found from the project.
Finally, in the concluding chapter there is a discussion about the thesis project as a whole. This section states the limitations, and challenges that were encountered while writing the thesis project. That chapter also reviews the contributions the thesis had to the Behavioural Psychology Field.
Chapter II: Literature Review

Autism Spectrum Disorder (ASD) is prevalent in 67-73% of children, and of the children diagnosed with ASD 44-83% has also been diagnosed with sleep disorders (Jin et al., 2013). Sleep problems in children with ASD are most commonly reported as problems with sleep onset and maintenance, night waking, short night sleep duration, long sleep onset and early morning waking (Vriend et al., 2011).

Sleep Needs of Children

There are many recommendations for how much sleep children should be getting to reach their optimal sleep duration. Matricciani, Blunden, Rigney, Williams and Olds (2012) state that optimal sleep duration is important for sleep quality, but there are other factors that contribute such as timing and consistency. They suggested that the optimal sleep time is reflective on desirable outcomes for during the day such as health, performance and mood (Matricciani et al., 2012). They also suggest that sleep needs can vary among children and as long as children are succeeding during the day and are having a consistent routine around sleep then the amount of sleep assigned to a child should be individualized and set by the parents (Matricciani et al., 2012).

Effects on Family

When children participate in problematic sleeping behaviours it can have a spillover effect on their family members or caregivers (Tilford et al., 2015). In a study conducted by Tilford et al. (2015), they looked at the effects children’s behaviours have and how having successful treatment for these behaviours will help their caregiver’s health. The study found that effective treatment for children’s problematic sleeping behaviours and other problematic behaviours could improve their caregiver’s health. Tilford et al. (2015) also found that effective treatments that parents can use are lacking and what does exist is not cost-effective. Tilford et al. (2015) state that there is also a greater understanding of sleep problems needed in children with ASD, and how the sleep problems affect the caregiver’s health.

Sleep Interventions

There are many treatments that can be used to help children who are engaging in problematic sleeping behaviours. Some of the problematic sleep behaviours children engage in are: night awakenings, night terrors, delayed sleep onset, lack of self-soothing skills, abnormal circadian rhythm, yelling out during the night and poor bedtime routines. Some of these treatments used to treat sleeping problems being reviewed in the literature review are: bedtime routines, planned ignoring, graduated extinction, faded bedtime, physical activity, scheduled awakenings, circadian rhythm management, and chronotherapy. The Albany Sleep Problems Scale (Durand, 2008) is also being described on how to use the scale and what information the scale will provide once it has been filled out. The above areas will be reviewed in the following sections of the literature review.

Bedtime Routine

A bedtime routine is used when the child is getting ready to go to bed. Bedtime routines can include brushing teeth, having a bath, having a snack, reading a book, changing into pajamas, and going to the toilet. Mindell, Li, Sadeh, Kwon, and Goh, (2014) state that in their
research it has been shown that routines in general lead to less stressful environments and improve day time behaviours for young children. Durand (2008) suggests that although bedtime routines are important and can help improve positive sleep behaviours, children diagnosed with ASD can become attached to routines and when a change in routine occurs it might result in a tantrum. To avoid this, Durand (2008) proposes that changing the routine order but keeping the same activities each night or each week can assist in helping the child to become as attached to a routine.

Jin et al. (2013) described an effective bedtime routine that used a faded bedtime with response cost procedure that increases appropriate sleep. First, during the treatment the child would get put to bed and told “good night” 30 minutes past the average sleep-onset time found from the baseline data. Second, the child was not allowed to go to bed prior to the scheduled bedtime or sleep past the scheduled wake time. Third, the response cost involved keeping the child awake and away from their bed for an extra hour if the sleep onset delay was more the 15 minutes. This study demonstrated the efficacy of behavioural tactics when dealing with specific sleep problems in children.

Jin et al. (2013) also described a different study that used an effective stimulus control procedure for night time routines and the use of extinction for not attending to the child after the good night has been said. Having a bedtime routine of reading books before bed and not attending to the child after the child had been put to bed was shown to improve overall sleep quality in children that took part in the study. Planned ignoring is another intervention suggested to parents.

**Planned Ignoring**

Planned ignoring or extinction is a treatment recommend to parents when no other treatment has worked and it is their last resort. The planned ignoring is used to decrease calling out during the night and increase self-soothing techniques. Extinction is used when a child starts sleeping in their own bed and wakes up during the night, the child may call out or scream but the parents are asked not to enter their child’s bedroom during the night unless the child is ill or in danger. If the child leaves their room the parents are instructed to take the child back to bed immediately without making eye contact, cuddling or talking to the child.

Knight and Johnson (2014) state that the rationale for extinction is to teach the child appropriate sleeping habits such as self-soothing when waking up during the night. When the child wakes during the night they have trouble falling back to sleep because the conditions they associate with falling asleep are no longer present (stimulus control), such as parental presence or a bottle (Wesikop, Matthews & Richdale, 2005). Over time, children must learn self-soothing habits on their own without their parents restoring the conditions used previously for soothing; then these learnt self-soothing habits could allow for the child to fall back asleep after waking during the night (Wesikop et al., 2005). However, parents struggle with following through and understanding when using extinction with their children because of how upset some children can get when being alone and having to ignore their child’s call (Knight & Johnson, 2014).

**Graduated Extinction**

Graduated extinction is an alternate treatment for night awakenings. Graduated extinction has the same steps extinction does but instead of the parents not going into their children’s
bedrooms ever at night when their child wakes, there is a time delay for when they go in. The parents will wait longer time frames before entering their child’s room to allow for them to learn self-soothing techniques but not allowing them to be traumatized by being alone when upset for a long period of time (Weiskop et al., 2005). The time delay is set at a low amount and increased over time (e.g. 5 minutes, 10 minutes, and 15 minutes). Weiskop et al. (2005) encourage parents to give the child plenty of positive reinforcement during the day regardless of what happened during the night. Parents are also warned about extinction bursts where the child’s targeted behaviours will temporarily escalate (Weiskop et al., 2005).

**Faded Bedtime**

Faded bedtime treatment is another treatment suggested to parents. According to Weiskop et al. (2001), it is used when children do not have extreme sleep problems and are still going to bed at certain time, but the sleep onset is later than it should be (sleep onset means when the child falls asleep not just gets into bed). Parents can record their child’s sleep onset by writing down when the child goes to bed and then again when they see the child has fallen sleep. When using fading, the child’s bedtime is increased 30-60 minutes at night to allow for the child to be more tired when getting into bed (Weiskop et al., 2001). Fading is also done so the child will be tired and learn how to self-sooth and fall asleep on their own easier while increasing the “going to bed” reinforcement. The child will then fall asleep right away when getting into bed and not lie awake in bed alone. The child is then too tired to fight or create aversive conclusions about bedtime (Weiskop et al., 2001). When using a faded bedtime, the child still must not be allowed to sleep at any other time during the day. Weiskop et al. (2001) used faded bedtime to treat sleeping problems in a 5-year-old boy diagnosed with ASD. The child had difficulty falling asleep in his bedroom and would fall asleep most nights on the couch in his mother’s lap. The parents chose to use a faded bedtime routine as well as extinction. The intervention data showed an increase of the child sleeping in his own bed and staying in his bed the whole night (Weiskop et al., 2001).

A study was conducted by Jin et al. (2013) that used a mix of behavioural techniques to decrease problematic sleeping behaviours. The techniques used were a night time routine, faded bedtime and extinction. The study had three participants who all had difficulty with sleeping behaviours. Children were observed from a video feed in each of their bedrooms from the time their parents bid them good night until falling asleep. The sleep onset delay was recorded every night. Sleep-interfering behaviours were also recorded in the time after the bidding of good night had been done. The sleep-interfering behaviours include: talking to themselves, getting out of bed and staying out of bed, sitting up, and engaging in stereotypical behaviours. The children were recorded every 30 minutes for 1 minute to see if they were still asleep. The sleep hours in the goal zone of sleep (i.e., the time frame of hours the parents want the child to go to bed) were divided by the goal amount of the sleep hour’s zone to find the amount of sleep that was acquired at a proper time. The intervention included a nightly routine to get the children on time to bed and for them to know when it was bedtime. The parents were asked to use a faded bedtime to make sure the children were tired and would fall asleep when put into bed and told goodnight. Parents were also told to not re-enter the room unless necessary after the child had been put to bed. For all the children there were more nights during the treatment that sleep goals were met than there were during the baseline and they showed decreases in sleep-onset delay and sleep interfering behaviours.
Physical Activity

Wachob and Lorenzi (2015) demonstrated that the amount of physical activity a child has during the day has an effect on the child’s sleeping habits. There were 10 children diagnosed with ASD volunteered to participate in a study to measure the amount of physical activity they have during the day compared to their sleeping habits and routines. They wanted to see if an increase in physical activity would increase the tiredness of the child when they go to bed. Parents were first asked to complete a questionnaire called Children’s Sleep Habits Questionnaire (CSHQ). Children were asked to wear devices on their right arms for seven consecutive days, except during water activities. Sleep was recorded in two ways, sleep efficiency (the amount of time it takes for the child to fall asleep) and wake after sleep onset. The study found a relationship between daytime activity levels and sleep patterns showing that the more activity children had during the day, the less time they were awake after they fell asleep. This was significantly true with the younger children because they participated in more physically activity then the older children. Wachob and Lorenzi (2015) blamed low level of participation in older children on the increased complexity of the games and the inability for children with ASD to participate to their fullest extent. Overall, the children had consistent activity and sleep patterns throughout the entire week. Wachob and Lorenzi (2015) express that it is significantly important for children to have consistent physical activity to reduce their problematic sleeping behaviours. Limitations for this study were the self-reporting aspect. It is hard to tell if the participants are telling the truth and if the researchers used a video feed method of recording data it would have allowed for more accurate data to be recorded.

Scheduled Awakenings

Night terrors have been shown to be a problem for children diagnosed with ASD (Vriend et al., 2011). Night terrors are a sudden arousal accompanied by signs of intense fear that cause the child to scream or cry. Vriend et al., (2011) described a study in which scheduled awakenings were used to reduce night terrors in children with ASD. The study used scheduled awakenings of the children every 30 minutes before an expected night terror. This allowed for the children to leave the state of sleep they were in long enough for the night terrors to not be presented. They were then able to continue sleeping after being woken. The study showed an increase in total sleep time for the children who participated. Parents can use this treatment with their children easily by recording each night what time the night terrors happen and if there is a pattern (Vriend et al., 2011).

Circadian Rhythm Management

Another method of treatment is circadian rhythm management. A circadian rhythm is how the body functions every day according to an internal clock; the body processes in a 24-hour cycle that responds to such things as light, darkness, body temperature and hormones (Knight & Johnson, 2014). This is how the body knows when it is time to go to sleep and wake up. Children who wake up and go to sleep at the wrong times of day might have a problem with their circadian rhythm and the method of circadian rhythm management aims to reset the sleep-wake cycle to help regulate sleepiness (Knight & Johnson, 2014). A normal schedule for adults consists of 16 hours of wakefulness and 8 hours of sleep at night (Glickman, 2010). Glickman (2010) states an indicator of circadian rhythm disorders is the inability to sleep and wake during the desired times and that it is one of the most common sleep problems found in children with ASD. If parents could understand or track their child’s circadian rhythm cycle they could
possibly then start to manipulate their sleep and get them back on to a more effective and healthier sleep cycle (Glickman, 2010). Some ways parents can do this is changing the child’s bedroom to change with light and darkness. By making sure the room is very dark at night the body can tell it is time to go to sleep and in the morning having lots of light in the room allows for the body to understand when it is time to wake up. This process is not fast acting and may take time to work or cause change in the child’s sleep habits (Glickman, 2010).

**Chronotherapy**

Chronotherapy is a treatment used for children who are awake during the night and asleep during the day and also for children who have extreme sleeping difficulties (Durand, 2008). Chronotherapy involves keeping the child awake later and later every night until the parents have reached the desired time of day the child should be sleeping (Durand, 2008). Durand (2008) gives an example of a child that sleeps during the hours of 2:00 a.m. to noon, however the parents want the child to sleep during the hours of 10:00 p.m. to 6:00 a.m.. The parents must move the bedtime later during the day until the bed time is at 10:00 p.m. This is done progressively over time by moving the bedtime to 5:00 a.m. the first night then 8:00 a.m. the second night until the time comes back around to 10:00 p.m., or the time of night the child is wanted to go to bed. This plan is difficult to execute if there are other children involved or if the parents must be at work during the day because at the beginning the child will need to be sleeping during the middle of the day (Durand, 2008). The child must also not be allowed to sleep any other times of the day. This treatment is not recommended unless all other options have failed and should not be used unless recommended by a professional (Durand, 2008).

**Current Study**

The research described above demonstrates the efficacy of an effective bedtime routine, extinction, circadian rhythm management, chronotherapy, scheduled awakenings and faded bedtime with response cost to decrease sleep interfering behaviours and other problematic night time behaviours in children diagnosed with ASD. The information on these areas was used in this thesis to create a manual to help parents deal with their child’s problematic behaviours at home. When parents get a clear idea of what they need to do to help their children, it should be easier to intervene in their child’s problematic behaviours. The current research seeks to use the benefits of past studies to inform parents of the range of evidence-based techniques that can be used to help them with their child’s problematic sleeping behaviours outside of a clinical setting. The manual made for parents allows them to have a reliable source of information in one place; parents can have access information to multiple sources that has been summarized without having to work to find the most important information. The manual is a “parent friendly” resource based on empirical findings. The Albany Sleep Prolems Scale (Durand, 2008) was used to offer staff and the author a clearer understanding of what problematic sleeping behaviours the children in the nursery school engaged in.
Chapter III: Method

Participants

A total of nine parents were asked to participate in the study and seven parents signed and returned the consent form. All the parents in the study have children who are diagnosed with Autism Spectrum Disorder (ASD) and who attend the nursery school. The children did not have to suffer with sleeping problems for the parents to participate. All parents were asked to fill out the survey and there were no exclusion criteria.

In order to begin research, the consent form was required to be approved by the St. Lawrence College Research Ethics Board (REB). A consent form (Appendix A) for the parents to sign to participate in the project was made that stated all the information the parents needed to know about the project, such as confidentiality information and how the information the parents provided would be used. The consent form and survey were handed out to parents a week prior to when an information session was planned to happen. The information session was planned to be presented by the behavioural consultant at the agency. The consultant was going to talk about common sleep problems in children diagnosed with ASD and interventions that parents can use to help their children. This allowed for parents to read over the consent form and ask questions before the information session occurred. Unfortunately, due to time constraints the information session was unable to occur. Parents were informed to ask the educators about any specific questions they may have about sleep problems. Written consent was obtained before the parents filled out the sleep survey.

Design

The parents were asked to fill out the Albany Sleep Problems Scale (ASPS) (Appendix B) (Durand, 2008). For the scale, the parents were required to rate a statement on a 5-point scale on how that represents their child and the needs they had for their child. The information gained from the survey was graphed by taking all the parent’s answers to each individual questions and comparing their answers. The information from the graphs was used to create a manual for the parents to use when dealing with sleeping problems with their children. Due to time constraints, the manual was not given to parents. However, had the manual been provided, parents would have been asked to fill out a short questionnaire based on the social validity of the manual. The results from the short questionnaire were intended to be used to understand the positive and negative aspects of the manual.

Setting/Apparatus

The scale and consent form were handed out in person to each parent at the nursery school. The manual was used by the parents at their independent homes. Materials needed were a survey for each pair of parents and a pencil to fill out the survey.

Measures

The data collected from the parents was on types of problematic sleeping behaviours that may occur with children who are diagnosed with ASD.
Albany Sleep Problems Scale (ASPS)

The method that was used to collect the data was a survey called the Albany Sleep Problems Scale (Durand, 2008). The scale is a screening tool used to assess sleeping behaviours in children. The scale has 46 questions that can be rated on a 5-point scale, ranging from 0 (never), to 4 (nightly). An example of a question asked is “does your child have a bedtime routine that is the same every evening”. The survey also asks questions that need to be in written form. An example of a question on the survey is “when did the child’s primary difficulty with sleep begin”. Also the scale inquires about the use of a nightly schedule and how many hours the child sleeps at night. There was also a blank section for parents to write further concerns that was taken into consideration when the manual was being made. The scores were graphed against other scores given to see how prevalent the need is for certain information. An example for this is, if a majority of the parents give an answer of 0 (signifying never) for the question “does your child have a bedtime routine that is the same every evening?” then it is apparent that the parents are in need of information about how to make a night time routine. The answers on the scale were reviewed by the student and then compared to the book “A Guide to Improving Sleep for Children with Special Needs: Sleep Better” written by Durand (2008) to understand what each question and answer means. The data (Appendix C) were analyzed by creating a graph and finding the average score given for each question. The questions were then reviewed to understand if the average answer meant it was something the parents were doing right or if it was something the parents needed to know more about. An example of this is if the parents answered an average score of 4 (Signifying nightly) about their child having a regular bedtime routine that would mean that the parents know about bedtime routines; however, if the parents answered an average score of 4 about the child consuming caffeine that would mean the parents need to know about healthy night habits for their child. A list of topics that could be put in the manual based on the scale was made and the top five most important topics seen were chosen.

Social Validity Questionnaire

There was also a social validity questionnaire (Appendix D) the parents were going to fill out after they received the manual. The social validity questionnaire had 10 yes/no questions that takes approximately 3 minutes to complete. Some examples of a question on the Social Validity Scale is “was the manual easy to understand?” and “did the manual answer questions you needed answered?” The information found from the questionnaire was going to be used to assess the helpfulness of the manual, but unfortunately because of time constraints the questionnaire was unable to be filled out by participants. The social validity questionnaire was made by the student for the use of the project.

Procedures

Parents of each child were asked to fill out the Albany Sleep Problems Scale (ASPS) (Durand, 2008) based on their child’s sleeping behaviours. Informed consent was obtained when the ASPS was handed out. The parents were asked to read over the consent form (Appendix A) and if they agreed to participate they were asked to bring in the filled out scale and signed consent form into the nursery school. The consent form and scale were handed out to parents on November 13th, 2015 and the scales were all handed back by November 25th, 2015. The participants had regular contact with the educators and the student, that gave them many opportunities to ask questions about the project before the consent forms and scales were handed back to the student. The scores on the scale were organized and graphed after all the scales were
handed back. And the manual (Appendix E) was started and finished after the graphing of scores was completed.
Chapter IV: Results

The parents were asked to fill out the Albany Sleep Problems Scale (ASPS) (Durand, 2008). For the scale the parents were required to rate a statement on a 5-point scale on how the question represents their child and the needs they had for their child. The average of the data obtained from the survey, presented in Appendix C, was first graphed by taking all the parents answers to each individual questions and comparing their answers. The information from the graphs was then used to create a manual for the parents to use when dealing with sleeping problems with their children.

The results found from the ASPS provided data needed to understand the concerns the parents had and to determine what issues were the highest priorities to address in the manual. Questions on the scale were split into categories according to what their answers meant. The categories were: lower numbers answered signify greater problems, higher numbers answered signify greater problems, and yes/no questions. The criteria for the Likert-scale questions was based on reading the question and determining what the best answer would be out of opposite answers, 0 (never) or 4 (nightly). An example of this is question 1 compared to question 7. Question 1 asked if the child has a fairly regular bed time, if the participant answered “never” then that would mean that the child has trouble with a bedtime schedule and that would be a problem that needs to be addressed in the manual. In question 7 it asked if the child resists going to bed, if the participant answered “never” then that would mean the child does not have trouble getting to bed and there is no problem. All the Likert-scale questions were organized in that way.

Scores on the Questions that Indicate Higher Numbers Signify Greater Problems graph (Figure 1) indicated that questions 3, 6, 7, 10, 31 and 35 were the highest averaged answer given indicating there was a problem with the topics in those questions. This indicated there was a need for the topics to be included in the manual. The questions were chosen as problem areas if they had an average score above 1. Although question 17 had an average of 1.1, the data from the other questions indicated more problem areas. The data from the six questions were then highlighted according to the categories: question 3 indicated a problem with children playing too much before bedtime, question 6 indicated a problem with the children engaging in vigorous activities before bedtime, question 7 indicated a problem with the children going to bed, question 10 indicated a problem with the children waking during the night, question 31 indicated a problem with movement during the night, and question 35 indicated a problem with the children wetting the bed during the night. Questions 35, and 31 were excluded because the topics were seen to be beyond the scope of the manual.
Figure 1. All average scores given for questions that indicate higher numbers signify greater problem.

Scores on the questions that indicate Low Number Signify a Greater Problem graph (Figure 2) indicated that there was no problem with the topics of the questions displayed, indicating there was no need for the topics to be in the manual. Questions would have been selected from this category if their answers had an average score below 1.
Figure 2. All average scores given for questions that indicate low numbers signify a greater problem.

Answers to written questions and yes/no questions (Figure 3) were also excluded based on the inconsistency with answers given by participants and topics of questions such as about use of medication. The use of medications was outside the scope of the manual because the manual is intended to be used for information purposes only and any medical problems should be consulted with their family doctor.
Figure 3. All answers given on the Albany Sleep Problems Scale for Yes/No Questions. Yes answers on the bar graph are indicated in black, and No answers are indicated in white.
A majority of parents described waking during the night as a problematic area for their child. They also described waking early as a problem, but this topic was found to be too complex to describe an intervention for in the manual. This topic was too complex because of the amount of interventions available and none of them being generic enough to describe. In the scale there were topics that no parents found a problem for their child. These topics included feelings of anxiety before getting ready for bed, depressive thoughts (question 40), banging body parts to fall asleep (question 34), and falling asleep without warning during the day (question 23). In the written questions parents indicated sleep problems begin at different ages, parents returning back to work and no answers at all for the question “when did the difficulty begin” (question 44).

The topics for the manual were selected from the graphs. The manual has six sections: Good Sleep Habits, Night Time Routines, How Much Sleep a Child Needs, Waking During the Night, Difficulty Falling Asleep and Parent Friendly Resources. These sections provide an overview of the causes for each problem and the treatment parents can use to help these problems to stop occurring. The manual also describes how to make a night time routine and what were important steps to add to already existing routines.
Chapter V: Discussion

Summary of Study

Research stated above also demonstrated the need for information on sleeping behaviours in children with Autism Spectrum Disorder (ASD). There are many interventions that can be used to help stop problematic sleeping behaviours to occur. The manual interventions were chosen based on the literature review, which indicated that the use of routines has shown to lead to less stressful environments and improved behaviours (Mindell et al., 2014) and that optimal sleep time is reflective on desirable outcomes for during the day (Matricciani et al., 2012). In addition, the literature demonstrated interventions that could not be easily used by parents such as circadian rhythm management and extinction. Finally, the interventions were chosen based on their effectiveness in studies and their effectiveness with the child population.

The study looked at the needs of parents who had children with ASD who engaged in problematic sleeping behaviours. The use of the Albany Sleep Problem Scale (ASPS) (Durand, 2008) enabled participants to identify their needs for information based on their children’s sleeping behaviours. These data enabled the author to create a customized manual to be that fit those needs by highlighting relevant treatments and nighttime routines. In this manner, the present study aimed to help parents better understand their child’s sleeping behaviours and treated the problems that may be occurring. This study fits into the research of sleep problems because it uses interventions being done by professionals and suggest them to parents to implement. This allows for it to be seen if parents can implement certain interventions without help and if the interventions are working for them.

The results from the study suggest that there are numerous high levels of sleep needs for children who are diagnosed with ASD. There were many need areas identified on the scale that suggest that there are multiple problems occurring in each child, not just one. This then indicates that the parents have high needs for information and support. This caused difficulty when it came to producing a manual because of how complex the behaviours were. The parents may need more hands on support in the home to show them interventions and although this is true, the manual will be a good start for parents to use and allow for them to do more research on the topics.

Strengths and Limitations

The manual exhibited multiple strengths and allowed for participants to acquire information on their children’s sleeping behaviours. The data on the scale validated the belief that sleep problems were common in children with autism and confirmed they were occurring in many of the children attending the nursery school. The manual was designed to provide easily accessible information for parents to use on important topics. Although the manual could not cover every topic it provides information on some of the most important topics regarding sleep. The project as a whole provided information to the agency about their clients and let them know about the sleep problems occurring. Furthermore, it allowed for an understanding about how many sleep problems are truly occurring in children with autism, and not just solely based at the agency.

Several limitations were identified in the study. First, the manual could not provide information on three out of six of the main topics the participants presented as a problem in the
Albany Sleep Scale results, therefore parents of the children would not have gotten information on some of the problems that may be occurring. There are also a large number of other sleep problems that may be occurring that the scale did not discuss or that the manual could not provide information on; these topics were omitted from the manual because of the topics complexity and inability to provide brief information on the topic that parents would understand. Second, there were also a number of strategies that could be implemented for some of the sleep problems. Some of the strategies could be hard for parents to implement by themselves and the parents would be in need of a health care professional to implement the strategies for the parents. This in turn did not allow for these topics to be only briefly explained in the manual. Third, the manual was not delivered to parents nor was a follow up social validity questionnaire conducted because of time constraints. No information will then be provided on how helpful the manual was to the parents. Fourth, an information session for the parent did not occur. The session did not occur because of lack of time available parents had to attend. The parents then did not get a chance to voice more problems they may be having at home with their children. Fifth, sleep problems are not simple and can have many functions. This made it difficult to provide strategies that are appropriate for all children and the manual could only provide generic non-contextual information. Sixth, there was a small sample size which limited the findings about the broader population of children on the autism spectrum.

Multilevel Challenges

There are many challenges that are present in the nursery school setting.

A challenge at the client level was that every client is different and has different needs. This is specific to problematic sleeping behaviours. It is hard for health care professionals to give broad information to everyone because it may not help every client. This makes it hard for health care professionals to help everyone because they need to work with each family individually and that takes time that they may not have because of the amount of families in need. To more effectively address children’s, sleep problems health care professionals need to go into the home to understand why the behaviours are occurring and that can take time and resources that are not currently available.

A challenge at the program level was that the educators do not have enough knowledge about sleeping problems in children. When parents come in and ask the educators for help when dealing with the problematic sleeping behaviours their answers are limited. This is not helpful for parents because if they need information quickly they might not be able to get it and have to wait for an information session on the topic to receive answers. This can be fixed by providing the nursery school with more resources about sleep problems to give out to parents.

A challenge at the organizational level was how there are not enough resources to establish sufficient services to support children who have autism. The waitlists for children to receive help are long and it sometimes takes years for children to get into programs and their parents are forced to pay for private ones. The private programs can be expensive, so children’s parents who can’t afford it are left waiting for a program that is funded. There needs to be more programs that can help children and be easily accessible by parents. These programs also need to provide more information on sleep and provide resources to parents while they are on the waiting list for help.
A challenge at the society level is society does not understand enough about ASD. People do not seem to understand what it is like having a child on the autism spectrum and the amount of work parents put into caring for their children. When parents are out in public and their child with ASD is acting a certain way people judge and assume that the parent is not controlling their child. Society needs to understand that parents of children with ASD do a lot for their children, and have a better understanding about their behaviours. If more people understood that it is hard on the parents and it would make it easier for them when trying to deal with the behaviours in public.

**Implications for the Behavioural Psychology Field**

The manual has made a preliminary contribution to the behavioural psychology field by developing a resource for parents. It also provided the agency with information about their clients they would not have gotten before. This information assists in helping their clients further and to help future clients by being knowledgeable about the topic. The manual also provides information on behavioural techniques. If parents use these techniques and find them successful they are more likely to believe in the behavioural psychology field and help the field grow. Furthermore, the project provides us with information that there aren’t enough resources for parents and that health care professionals need to work with parents more on their child’s sleep problems.

**Recommendations for Future Research**

Although the current study provides different techniques parents can use with their children, future studies could provide results from techniques used by parents on children. The nursery school could provide an information session for parents to practice techniques and learn specific information for their child. Participants on the social validity of the manual could also complete a follow-up survey. The information gained from the social validity questionnaire can be helpful to create more information for parents and allow for more information to be added to the manual if needed. Future research could collect data on children’s sleep habits and how they act during the day to see if any connection is occurring. In-home support could also be provided to parents to assist them in implementing the manual effectively and teaching relevant behavioural techniques for their child.
References


Appendices

Appendix A: Consent Form

Principle Investigator (Student): Chelsea Vineyard
Supervisor: Glenna Hunter
Institution: St. Lawrence College
Agency: Thursday’s Child Nursery School

Invitation

You are being invited to take part in a research study. My name is Chelsea Vineyard and I am a student in the Bachelor’s Degree in the Behavioural Psychology program at St. Lawrence College (SLC) completing a placement at Thursday’s Child Nursery School.

What is this research study being done?

As part of this placement, I am completing a research project (called an applied thesis). The development of the thesis project will include a survey called The Albany Sleep Problems Scale (ASPS), to be completed by you based on the sleeping behaviours of your son/daughter. The information obtained through the ASPS will be used to create a manual describing strategies that may be used to address children’s sleep problems. Some topics that may appear in the manual include information regarding how much sleep children require, how to set up a bedtime routine, and what to do when your child wakes up during the night. Your child does not have to have sleep problems for you to participate in the study nor do you have to use the manual after it has been completed. The manual will be distributed by the teachers at Thursday’s Child Nursery School as a paper copy for all parents.

I would like to ask you for your help to complete this project. The information in this form will help you understand my project. Please read the information carefully and ask all the questions you might have before you decide if you want to take part.

This research study is being completed to further understand problematic sleeping behaviours of children diagnosed with Autism Spectrum Disorder. The purpose of the study is also to create a manual for parents to use to address sleep difficulties that their children may have.

The project will be developed under the supervision of Erin Connolly (supervisor at Thursday’s Child Nursery School) and Glenna Hunter (College Supervisor). This project has also been reviewed by the Research Ethics Board at St. Lawrence College.

What will you need to do if you take part?

If you chose to take part in this study you will be asked to fill out The Albany Sleep Problems Scale. This scale has 46 questions that are rated on a 0-4 scale and is anticipated to take 10
minutes to complete. These questions ask about your child’s behaviours around sleep. The information from the scale will be used to create a manual describing techniques to establish healthy sleep habits and to decrease problematic sleeping behaviours in children. A copy of the manual will be given to all participants. Three weeks after receiving the manual you will also be asked to complete a questionnaire based on what you thought of the manual and the techniques suggested.

There is no obligation to use the manual or any of the techniques described. Also, any current or future services received from Thursday’s Child Nursery School will not be affected whether or not you choose to participate.

**What are the potential benefits of taking part?**

The potential benefits of participating in the study are that you will receive a manual that will include strategies that may help you to address your child’s sleep problems.

**What are the potential disadvantages or risks of taking part?**

It is possible that your child’s sleep problems may not be addressed in the manual or that you will feel you require further information or support regarding your child’s particular sleep problems. If this is the case you may wish to consult with your child’s doctor or behaviour consultant. It is important to note that the manual will be designed for information purposes and will not replace medical advice or professional consultation.

**Will the information you collect from me in this project be kept private?**

We will make every attempt to keep any information that identifies your child strictly confidential unless required by law. No names or identifiers will be used. You will be assigned a code number to use on the questionnaires. The consent forms, my project notes and completed questionnaires will be kept in a locked filing cabinet at Thursday’s Child Nursery School. The computer files with the study data will be kept in a password protected file on a secure, password protected computer. All study documents and results will be kept securely for 7 years at St. Lawrence College, and then they will be destroyed. The consent forms will be kept for 10 years past the 18th birthday of the participant (as per professional clinical psychology guidelines). Your name, your child’s name or other identifiers will not be used in any reports, publications, or presentations resulting from this project.

**Do you have to take part?**

Participation in this project is voluntary and you may withdraw your survey answers at any time. If you do chose to withdraw, please speak to me or my supervisor. If you would like to be included in the project, please complete the form at the bottom of this letter and return it to me as soon as possible. This Project has been reviewed by the Research Ethics Board at St. Lawrence College. If you have any questions about participating in research study, please contact the SLC Research Ethics Board at reb@sl.on.ca.

I sincerely appreciate your cooperation. If you would like to receive more information about the
project, please contact me. You may contact my college supervisor, Glenna Hunter, glennahunter@gmail.com, (613)-249-9355 ext. 405 or my agency supervisor Erin Connolly, econnolly@afchildcare.on.ca, (613)-741-3511.

Consent

If you agree to take part in this research project, please complete the following form and return it to me as soon as possible. A copy of this signed document will be given to you for your own records.

NOTE: All information identifying you will be removed from any reports to protect your confidentiality.

_____ I consent to participating in the project conducted by Chelsea Vineyard.

_____ I do NOT consent to participating in the project conducted by Chelsea Vineyard.

_____ I consent for the data collected as part of this project to be presented at a conference.

_____ I consent for the data collected as part of this project to be published in a peer reviewed journal or professional publication.

By signing this form, I agree that:

✓ This study has been explained to me.
✓ All my questions were answered.
✓ Possible benefits and risks have been explained to me.
✓ I understand I have the right not to participate and the right to stop at any time.
✓ I am free now, and in the future to ask any questions about the study.
✓ I understand the manual is not to be used as a professional tool, but as a learning device.
✓ I have been told that my personal information will be kept confidential.
✓ I understand that no information that would identify me will be released or printed without asking me first.
✓ I understand that the data from this study will be presented at the St. Lawrence College Behavioural Psychology Poster Gala, and may be reported at other conferences or published in a scientific journal. No identifying information will be included in these reports
✓ I understand that I will receive a signed copy of the consent form.

____________________________________________________________________________
Participant Name                  Participant Signature                  Date

____________________________________________________________________________
BPSYC Student Name                BPSYC Student Signature                Date
### Appendix B: Albany Sleep Problems Scale

#### ALBANY SLEEP PROBLEMS SCALE (ASPS)

<table>
<thead>
<tr>
<th>Name:</th>
<th>Date of Birth:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Diagnosis:</th>
<th>Sex:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name of Respondent:</th>
<th>Date Adm.:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Instructions:** Select one number that best represents the frequency of the behavior.

- **0 = Never**
- **1 = Less than once per week**
- **2 = One to two times per week**
- **3 = Three to six times per week**
- **4 = Nightly**

1. Does the child have a fairly regular bedtime and time that he or she awakens? [ ] [ ] [ ] [ ]
2. Does the child have a bedtime routine that is the same each evening? [ ] [ ] [ ] [ ]
3. Does the child work or play in bed often right up to the time he or she goes to bed? [ ] [ ] [ ] [ ]
4. Does the child sleep poorly in his or her own bed, but better away from it? [ ] [ ]
5. Does the child consume caffeine in any form? [ ] [ ] [ ] [ ]
6. Does the child engage in vigorous activity in the hours before bedtime? [ ] [ ] [ ] [ ]
7. Does the child resist going to bed? [ ] [ ] [ ] [ ]
8. Does the child take more than 1 hour to fall asleep but does not resist? [ ] [ ] [ ] [ ]
9. Does the child awaken during the night but remain quiet and in bed? [ ] [ ] [ ] [ ]
10. Does the child awaken during the night and is he or she disruptive (e.g., tantrums, oppositional)? [ ] [ ] [ ] [ ]
11. Does the child take naps during the day? [ ] [ ] [ ] [ ]
12. Does the child often feel exhausted during the day because of lack of sleep? [ ] [ ] [ ] [ ]
13. Has the child ever had an accident or near accident because of sleepiness from not being able to sleep the night before? [ ] [ ] [ ] [ ]
14. Does the child ever use prescription drugs or over-the-counter medications to help him or her sleep? [ ] [ ] [ ] [ ]
15. Has the child found that sleep medication doesn't work as well as it did when he or she first started taking it? [ ] [ ] [ ] [ ]
16. If taking sleep medication, does he or she can't sleep on nights without it? [ ] [ ] [ ] [ ]

V. Mark Durand  
When Children Don't Sleep Well: Albany Sleep Problems Scale (ASPS). Copyright © 2007 by Oxford University Press.  
Oxford Clinical Psychology | Oxford University Press

---

### ALBANY SLEEP PROBLEMS SCALE (ASPS)

<table>
<thead>
<tr>
<th>Question</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>17. Does the child fall asleep easily in the evening and awaken too early in the morning?</td>
<td>1</td>
</tr>
<tr>
<td>18. Does the child have difficulty falling asleep until a very late hour and difficulty awakening early in the morning?</td>
<td>1</td>
</tr>
<tr>
<td>19. Does the child wake up in the middle of the night upset?</td>
<td>1</td>
</tr>
<tr>
<td>20. Is the child relatively easy to comfort during these episodes?</td>
<td>Yes</td>
</tr>
<tr>
<td>21. Does the child have episodes during sleep where he or she screams loudly for several minutes but is not fully awake?</td>
<td>1</td>
</tr>
<tr>
<td>22. Is the child difficult to comfort during these episodes?</td>
<td>Yes</td>
</tr>
<tr>
<td>23. Does the child experience sleep attacks (falling asleep almost immediately and without warning) during the day?</td>
<td>1</td>
</tr>
<tr>
<td>24. Does the child experience excessive daytime sleepiness that is not due to an inadequate amount of sleep?</td>
<td>1</td>
</tr>
<tr>
<td>25. Does the child snore when asleep?</td>
<td>1</td>
</tr>
<tr>
<td>26. Does the child sometimes stop breathing for a few seconds during sleep?</td>
<td>1</td>
</tr>
<tr>
<td>27. Does the child have trouble breathing?</td>
<td>1</td>
</tr>
<tr>
<td>28. Is the child overweight?</td>
<td>Yes</td>
</tr>
<tr>
<td>29. Has the child often walked when asleep?</td>
<td>1</td>
</tr>
<tr>
<td>30. Does the child talk while asleep?</td>
<td>1</td>
</tr>
<tr>
<td>31. Are the child's sheets and blankets in extreme disarray in the morning when he or she wakes up?</td>
<td>1</td>
</tr>
<tr>
<td>32. Does the child wake up at night because of kicking legs?</td>
<td>1</td>
</tr>
<tr>
<td>33. While lying down, does the child ever experience unpleasant sensations in the legs?</td>
<td>Yes</td>
</tr>
<tr>
<td>34. Does the child rock back and forth or bang a body part (e.g., head) to fall asleep?</td>
<td>1</td>
</tr>
<tr>
<td>35. Does the child wet the bed?</td>
<td>1</td>
</tr>
<tr>
<td>36. Does the child grind his or her teeth at night?</td>
<td>1</td>
</tr>
<tr>
<td>37. Does the child sleep well when it doesn't matter, such as when on weekends, but sleep poorly when he or she is &quot;tired&quot;?</td>
<td>Yes</td>
</tr>
<tr>
<td>38. Does the child often have feelings of apprehension, anxiety, or dread when he or she is getting ready for bed?</td>
<td>Yes</td>
</tr>
</tbody>
</table>

V. Mark Durand

When Children Don't Sleep Well: Albany Sleep Problems Scale (ASPS). Copyright © 2008 by Oxford University Press.

Oxford Clinical Psychology, Oxford University Press.
### ALBANY SLEEP PROBLEMS SCALE (ASPS)

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>30. Does the child worry in bed?</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>40. Does the child often have depressing thoughts, or do tomorrow's worries or plans buzz through his or her mind when he or she wants to go to sleep?</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>41. Does the child have feelings of frustration when he or she can't sleep?</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>42. Has the child experienced a relatively recent change in eating habits?</td>
<td>Yes No</td>
</tr>
<tr>
<td>43. Does the child have behavior problems at times other than bedtime or upon awakening?</td>
<td>Yes No</td>
</tr>
<tr>
<td>44. When did the child's primary difficulty with sleep begin?</td>
<td></td>
</tr>
<tr>
<td>45. What was happening in the child's life at that time, or a few months before?</td>
<td></td>
</tr>
<tr>
<td>46. Is the child under a physician's care for any medical condition?</td>
<td>Yes No</td>
</tr>
</tbody>
</table>

(If yes, indicate the condition below)

**OTHER COMMENTS:**

---

Copyright © V.M. Durand, 2007.

V. Mark Durand

When Children Don't Sleep: With Albany Sleep Problems Scale (ASPS), Copyright © 2006 by Oxford University Press

Oxford Clinical Psychology, Oxford University Press
## Appendix C: Albany Sleep Problems Scale Data

<table>
<thead>
<tr>
<th>Q</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Average Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>U</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3.9</td>
</tr>
<tr>
<td>E</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>1.7</td>
</tr>
<tr>
<td>S</td>
<td>4</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>T</td>
<td>5</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0.3</td>
</tr>
<tr>
<td>I</td>
<td>6</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>1.2</td>
</tr>
<tr>
<td>O</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>1.3</td>
</tr>
<tr>
<td>N</td>
<td>8</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0.9</td>
</tr>
<tr>
<td>N</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0.7</td>
</tr>
<tr>
<td>U</td>
<td>10</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1.3</td>
</tr>
<tr>
<td>E</td>
<td>11</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>S</td>
<td>12</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0.7</td>
</tr>
<tr>
<td>E</td>
<td>13</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>S</td>
<td>14</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>E</td>
<td>15</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>N/A</td>
<td>No</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td>S</td>
<td>16</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
<td>No</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td>R</td>
<td>17</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>S</td>
<td>18</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>R</td>
<td>19</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>E</td>
<td>20</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>E</td>
<td>21</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>S</td>
<td>22</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>E</td>
<td>23</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>R</td>
<td>24</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0.7</td>
</tr>
<tr>
<td>B</td>
<td>25</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>E</td>
<td>26</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>R</td>
<td>27</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>E</td>
<td>28</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>E</td>
<td>29</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>R</td>
<td>30</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>E</td>
<td>31</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>R</td>
<td>32</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>E</td>
<td>33</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>R</td>
<td>34</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>E</td>
<td>35</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>R</td>
<td>36</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>E</td>
<td>37</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>R</td>
<td>38</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>E</td>
<td>39</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>R</td>
<td>40</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>E</td>
<td>41</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>R</td>
<td>42</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>E</td>
<td>43</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>R</td>
<td>44</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>E</td>
<td>45</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>R</td>
<td>46</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

All scores given on the Albany Sleep Problems Scale by all participants and the average score for each question.
Appendix D: Social Validity Questionnaire

Circle the answer to the question:

1. Was the manual easy to understand?  
   Yes          No
2. Did it have enough information?  
   Yes          No
3. Was the manual organized well?  
   Yes          No
4. Was the information relevant to your child’s sleep problems?  
   Yes          No
5. Have you used any techniques from the manual?  
   Yes          No
6. If no, do you plan on using any of the techniques in the future?  
   Yes          No
7. If yes, have they helped your child’s sleep problems decrease?  
   Yes          No
8. Did the manual answer questions you needed answered?  
   Yes          No
9. Have you used the manual to research new information?  
   Yes          No
10. Would you participate in another study done by a future student?  
    Yes          No

Comments:
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

Thank you for participating in the study!
Appendix E: Manual

Stop Sleeping Problems Before they Start

A MANUAL FOR PARENTS OF CHILDREN WHO ARE DIAGNOSED WITH AUTISM SPECTRUM DISORDER WHO ENGAGE IN PROBLEMATIC SLEEPING BEHAVIOURS

Chelsea Vineyard
Table of Contents

Introductions ................................................................................................................................. 3
How Much Sleep Does a Child Need .......................................................................................... 5
Good Sleep Habits ......................................................................................................................... 6
Bedtime Routines .......................................................................................................................... 7
Waking During the Night .............................................................................................................. 8
Difficulty Falling Asleep .............................................................................................................. 9
Parent Friendly Resources .......................................................................................................... 10

*This manual is for informational purposes only and you should consult your family doctor if there should be any concerns about your child’s sleep problems.*
Introduction

Sleep is not just an important part of human’s lives but it is a necessity to be able to live each day. It is estimated that sleep problems occur in 63-73% of children diagnosed with Autism Spectrum Disorder (ASD). Though children with autism are at high risk of developing sleep disorders, the disorders need not to be life-long. There are many behavioural strategies for parents to use to decrease their children’s behavioural problems. This manual aims to help parents increase their knowledge in strategies to help their children get to sleep easier and remain asleep during the night.

There are six sections in the manual that describe different problems that may occur around your child’s bedtime. The sections are How Much Sleep Does a Child Need, Good Sleep Habits, Bedtime Routines, Waking During the Night, Difficulty Falling Asleep and Parent Friendly Resources.

Each child needs a different amount of sleep during the night to be able to function and succeed during the day. Understanding your child’s needs for sleep is very important when it comes to fixing any of their other sleep problems. This section describes tips for recognizing how much sleep your child needs and a chart to show you the average sleep needed for each age group.

Establishing good sleep habits before bedtime is the first step to promoting healthy sleeping behaviours. This section consists of information on what to feed your child before bed, when children should use screens before bed, how to manipulate your child’s bedroom to create a more welcoming environment for sleep and the use of physical activity during the day to increase tiredness at night.

Bedtime routines are also important for good sleep habits. This section explains why bedtime routines are important and why they can help a child with ASD. It also explains how to make a bedtime routine and what are the best activities to include.
Waking during the night is a big problem described by parents for their children. This sections explains some of the reasons your child may be waking up during the night and what you can do to prevent this from happening.

Some children even have difficulty falling asleep once they are in bed. This section describes causes for this and what you can do to help your child fall asleep faster and have a good sleep once they are in bed.
How Much Sleep Does a Child Need?

Sleep is very important time for our bodies. During sleep we spend time recovering and preparing for the next day and it is important for optimal health. Newborns spend most of their early months sleeping and growing. As children get older they no longer need as much sleep to grow. By the age of 2 toddlers need 11 ½ hours of sleep throughout the day. After the age of 5 most children do not need a nap during the day anymore.

Tips:

✓ Recognize the age appropriate sleeping amount
✓ Maintain a daily sleep schedule and nighttime routine
✓ Make the bedtime the same every night
✓ Observe child and understand signs of sleepiness

There is no magic number of hours of sleep needed for ALL children. Understanding your child’s needs based on their behaviours during the day and night is important to keep in mind when trying to decide how much sleep your child needs.
Good Sleep Habits

No Screens:
- Avoid allowing child to use screens 30 minutes before bedtime (e.g., TV, iPad)
- The screens can disrupt sleep patterns (not falling asleep and then being tired next day).
- The light from the screens can stimulate the brain and when it’s time to sleep the brain should not be stimulated.
- Brain stimulation can cause the child to have trouble falling asleep and relaxing.

No Caffeine:
- Caffeine is naturally occurring in foods.
- Caffeine can be a stimulant to the brain and can cause your child to not be tired for bed.
- When caffeine stimulates the brain it can affect our ability to fall asleep.
- Evaluate the foods your child is eating before bed and make sure they are not getting caffeine 6 hours before bedtime.

Setting up the Sleep Environment:
- Children need to know that Bed = Sleep.
- Keep lighting low in your child’s bedroom to decrease the probability of stimulation from light
- Keep the bedroom at room temperature so your child does not over heat and wake during the night.
- Remove toys from bedroom if you find your child plays with their toys during the night instead of sleeping. This allows for your child to understand it is time to sleep and not play.
- Background noise can be very distracting when falling asleep if you do chose to play sounds for your child at night make sure it soft and even tones.

Exercise and Activity:
- Establishing a daily exercise routine for your child can help increase tiredness at night.
- Exercise too close to bedtime might cause children to have trouble falling asleep.
  - Exercise increases the body’s internal temperature which causes people to be more alert.
  - The body’s internal temperature will decrease 4-6 hours after exercising. If the child goes to bed after that time their bodies temperature can be decreasing and help them fall asleep.
  - Discouraging your child from engaging in physical activity 2 hours before bed.
Bedtime Routines

A bedtime routine is a big part of having good sleep habits. They can help your child understand when it is time to go to bed and can prepare them for sleep. Having a bedtime routine can then possibly make it less of a fight for them to go to bed and stay in bed.

Why they are important:

- Bedtime routines help prepare your child for bedtime.
- Keeping bedtime organized can make it easier for children to understand when it is time to go to sleep.
- Having a bedtime routine can help create healthy habits children can keep using.
- Using a bedtime routine can teach children how to eventually get ready for bed by themselves as they get older.

Tips:

- Make a list of things to do 30 minutes before bedtime.
- Include activities such as dressing, washing and reading.
- Do no pick activities that could cause conflict such as picking out clothes.
- Avoid extending the time period of the bedtime routine, such as reading too many books.
- Keep the order and the timing of the activities the same every night.

Examples of bedtime routines:

- Bath
- Pajamas
- Brush teeth
- Toilet
- Book
- Lights out
**Waking During the Night**

**Causes:**
- Partial waking naturally happens during the night and people usually do not remember it in the morning.
- Children who have not learned how to fall asleep alone will fully wake up because their body will not naturally go back to sleep because they may need a parent present to do so.
- Some children just are light sleepers and can be woken up to any sound.

**Treatment:**

Time based visiting- visit your child at increasingly larger intervals after you bid your child goodnight and continuing to do so every night until the intervals are so large visiting no longer needs to be done.

e.g., Say goodnight to child and leave the room (During each visit tuck your child in, say goodnight and leave). Once out of the room count 10 seconds, go back in room after the 10 seconds are up and say goodnight again. Leave the room after saying goodnight and count 30 seconds, go back into room and say goodnight. Continue doing this until the seventh visit or until your child is asleep.

**Prevention:**

    Prevention starts with understanding why your child is waking during the night and responding appropriately. Also, by preparing before the child goes to sleep by making the sleep environment welcoming and easy to sleep in.

- Putting your child to bed in their own bed alone without a parent
- Keep environment the same during the night as it was before they went to sleep (e.g. light and noise).
- Keep room low light and not stimulating
- Not feeding your child a big snack before bed.

    If your child should wake during the night, it is important they stay in their bed. Bring them back to bed and see what is wrong. There is nothing wrong with giving a child snuggles during the night but it is important they fall asleep alone so they can do it again if they wake up again. Avoid any stimulation such as lights, toys, food or loud noises. It is important your child understands it is still bedtime and they must go back to sleep.
Difficulty Falling Asleep

Many children have trouble not just getting into bed but falling asleep. They may lie in bed for hours without falling asleep and for young children that is hard to do. They may be up playing with their toys or may keep leaving their room.

Causes:
- Napping during the day
- Not enough exercise
- Improper habits before bed time
- Falling asleep in the wrong place (on the couch) then needing to fall back asleep once in bed.
- Not being tired enough
- Playing in bed

Tips:
- If a child needs a nap during the day you can change the time of their nap so it is earlier in the day. This can help because when it is time for bed, they have had time in between their sleeps to get some exercise and get tired again for the night.
- Your child may not be getting enough exercise during the day to allow for them to get tired. The child may be tired mentally but not physically. To help you can increase their physical exercise 2 hours before bed to help them get tired and help them fall asleep faster at night. (It is important to remember not to allow your child to engage in physical activity any closer than 2 hours before bedtime to allow your child to prepare to go to sleep)
- Before bed it is important that a child relaxes their body and mind to prepare to go to sleep. If a child falls asleep in front of the T.V or is watching a screen before bed their brain can start to be stimulated instead of relaxing. Giving your child a toy to play with or reading a book can help them relax.
- A child could also be falling asleep in the wrong place and getting to much sleep before they are being put into their bed. They could also have trouble falling back to sleep after being moved or woken up. It is important they fall asleep in their bed and not on the couch.
- Ensure that your child has good sleep habits and establish a nighttime routine for your child.
- If your child has been known to play with toys in their room instead of going to sleep limiting their access to toys by removing them from their room can help your child establish when it is time to go to sleep.
Parent Friendly Resource


This book offers step-by-step information for parents and instructions addressing a variety of problems that may be occurring in children with special needs. This includes night waking, bed-wetting, insomnia, bedtime tantrums, information on children’s diet and schedules and how to maintain progress after interventions. Some features also include a sleep diary, behaviours log, and a parent interview to understand where the problem areas may occur and to identify the best intervention. The book was written by author Mark Durand, and is a psychologist and researcher specializing in behavioural problems and sleep disturbances in children with disabilities.