



Theses and Dissertations

2023-08-11

Barriers and Facilitating Factors of Sleep Assessment/Screening Among School Psychology Practitioners

Tyler Jjay Landon Storey
Brigham Young University

Follow this and additional works at: <https://scholarsarchive.byu.edu/etd>



Part of the [Education Commons](#)

BYU ScholarsArchive Citation

Storey, Tyler Jjay Landon, "Barriers and Facilitating Factors of Sleep Assessment/Screening Among School Psychology Practitioners" (2023). *Theses and Dissertations*. 10113.
<https://scholarsarchive.byu.edu/etd/10113>

This Thesis is brought to you for free and open access by BYU ScholarsArchive. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of BYU ScholarsArchive. For more information, please contact ellen_amatangelo@byu.edu.

Barriers and Facilitating Factors of Sleep Assessment/Screening
Among School Psychology Practitioners

Tyler Jjay Landon Storey

A thesis submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of
Educational Specialist

Terisa Gabrielsen, Chair
Ryan Kellems
Rebecca Winters

Department of Counseling Psychology and Special Education
Brigham Young University

Copyright © 2023 Tyler Jjay Landon Storey

All Rights Reserved

ABSTRACT

Barriers and Facilitating Factors of Sleep Assessment/Screening Among School Psychology Practitioners

Tyler Jjay Landon Storey

Department of Counseling Psychology and Special Education, BYU
Educational Specialist

Sleep is an important and necessary part of life. While the biological need for sleep among school-aged individuals has not changed over the years, the quality and quantity of their sleep has. School-aged children reporting sleep deficits in the United States is on the rise and a significant body of research establishes associations between a lack of sleep and lower cognition as well as psychological and behavioral problems. These associations can heavily influence the academic progress and success of students. School psychologists are in a unique position to identify and provide support to individuals with sleep issues. Unfortunately, there is little evidence in the literature to suggest that school psychologists are regularly accounting for sleep. Additionally, no studies have attempted to explore the barriers and facilitating factors for regular sleep screening/assessment among school psychologists. The present study surveyed 105 school psychologists to ascertain the proportion of practitioners who report assessing or screening for sleep issues. School psychologists were also asked to identify potential barriers and facilitating factors related to treating sleep challenges. The results indicated that many school psychologists are not assessing, screening, or treating students for sleep issues or disorders. Many school psychologists report minimal exposure to sleep training within their graduate programs and practitioners cite a lack of training and awareness to sleep-related resources as both major barriers and facilitating factors to implementing sleep related practices. The results highlight the continued lack of emphasis on sleep training within the profession of school psychology. Practitioner's responses indicated a need for better sleep training and education within professional training programs, including equipping such programs with faculty possessing expertise and experience with sleep training/treatment. Results also indicated a need for professional school psychology associations and organizations, such as the National Association of School Psychologists, to provide better awareness, training, professional development opportunities, along with increased visibility to resources on sleep for practitioners to utilize. Furthermore, this article provides practitioners a variety of sleep-related resources to better prepare and educate themselves to provide the best possible services to students and families.

Keywords: school psychology, sleep, evaluation, barriers, screening tests, identification

TABLE OF CONTENTS

TITLE PAGE	i
ABSTRACT.....	ii
TABLE OF CONTENTS.....	iii
LIST OF TABLES	vi
LIST OF FIGURES	vii
CHAPTER 1: Introduction	1
Purpose of the Study	7
Research Questions.....	8
CHAPTER 2: Review of Literature.....	9
Impact of Insufficient Sleep on School-Aged Individuals.....	9
Prevalence of Sleep Deficits and Disorders Among School-Aged Individuals.....	14
Common Disabilities and Disorders Co-Occurring With Sleep Issues	15
Common Pediatric Sleep Disorders	16
Sleep Assessment/Screening Among School Psychology Practitioners.....	16
Review of the National Association of School Psychologists Website.....	16
Review of the Scientific School Psychology Journals.....	19
Sleep Screeners and Measures for School-Aged Children	22
CHAPTER 3: Method.....	24
Participants.....	24
Questionnaire	24
Measures	27
Procedures.....	27

Inclusion Criteria	27
Participant Recruitment	28
Design and Data Analysis.....	30
CHAPTER 4: Results	32
Reported Sleep Assessment/Screening Among Practitioners.....	33
Sleep Considerations During Special Education Evaluations	34
Treatment of Sleep Disorders	36
Tools Used to Assess/Screen for Sleep Difficulties/Disorders.....	38
Barriers to Sleep Assessment, Screening, and Treatment.....	38
Quantitative Results - Barriers.....	38
Qualitative Results - Barriers.....	39
Graduate Coursework Related to Sleep	41
Facilitating Factors to Sleep Assessment, Screening, and Treatment	42
Quantitative Results - Facilitators.....	42
Qualitative Results - Facilitators.....	43
CHAPTER 5: Discussion.....	45
Findings.....	45
Prevalence of Sleep Assessment and Screening	45
Sleep Screening and Assessment Methods Used.....	46
Sleep and Special Education Evaluations	48
Barriers to Screening, Assessing, and Treating Sleep	50
Facilitating Factors to Screening, Assessing, and Treating Sleep	53
Limitations	55

Future Research	55
Recommendations for Practitioners.....	57
Recommendation 1 – Personal Practitioner Development	57
Recommendation 2 – Universal Sleep Screening.....	60
Recommendation 3 – Graduate Education Training.....	62
Recommendation 4 – Improvement to NASP Resources	63
Conclusion	63
REFERENCES	65
APPENDIX A: Institutional Review Board Approval Letter.....	74
APPENDIX B: Questionnaire.....	75

LIST OF TABLES

Table 1	<i>Demographics by Region</i>	25
Table 2	<i>How Often do you Screen Students for Sleep-Related Issues or Disorders?</i>	34
Table 3	<i>Is Sleep a Consideration When you are Conducting a Special Education Evaluation? Do you Assess for Sleep Difficulties/Disorders During Most Evaluations or Only Certain Ones?</i>	36
Table 4	<i>Have you Ever Treated Sleep Disorders in Your Work Setting?</i>	37
Table 5	<i>Themes of Qualitative Responses to “Other” Reported Barriers</i>	40
Table 6	<i>How Many of Your Graduate Courses Spent at Least One Hour Discussing the Identification, Assessment, and/or Treatment of Youth Sleep Disorders?</i>	41
Table 7	<i>Rank the Following Facilitating Factors to Assessing, Screening and/or Treating Youth With Sleep Difficulties/Disorders From Most Important to Least Important</i>	43
Table 8	<i>Themes of Qualitative Responses to “Other” Reported Facilitating Factors</i>	44
Table 9	<i>Website Resources</i>	60
Table 10	<i>Sleep Measures, Screeners, and Tools</i>	62

LIST OF FIGURES

Figure 1	<i>Sleep Screening Methods Used</i>	39
Figure 2	<i>Barriers to Screening, Assessing, and Treating Sleep Difficulties/Disorders</i>	40

CHAPTER 1

Introduction

Adequate sleep is a necessary component of life. Getting sleep that is both adequate in terms of length and quality is paramount for completing essential day-to-day tasks, optimal general functioning, development, and learning (Fallone et al., 2002). For example, rapid eye movement (REM) sleep is vital for cognitive functioning, which includes the consolidation of memory, as well as the growth and development of the central nervous system (Mindell & Owens, 2010). Insufficient sleep has been associated with mood disturbances (irritability, depression, and anger), fatigue and daytime lethargy (complaints of headaches, and muscle aches), cognitive impairment (problems with memory, attention, concentration, decision-making, and problem solving), behavior problems (overactivity, impulsivity, and noncompliance), risk-taking behavior, and academic problems (tardiness and school failure due to chronic daytime sleepiness; Mindell & Owens, 2010).

Not only are sleep deficits associated with various behavioral challenges, but adequate sleep is necessary for several cognitive functions including the following: being able to remember what has been learned, performing executive functions (such as organizing thoughts, planning, and executing goals), the ability to react quickly, the ability to work quickly and efficiently, and think in the abstract (Sadeh et al., 2002, 2003). Cognitive functions and difficulties related to sleep are particularly pertinent to school-based professionals including school psychologists. Sleep and a lack thereof can influence the data collected through various assessment tools, such as cognitive and academic assessments, which has the potential to interfere with high-stakes comprehensive psychoeducational evaluations and decision-making. Additionally, if sleep issues are known to be key factors in school problems, the interventions,

instructional strategies, and school-based treatment approaches may change dramatically compared to what they would have been in the absence of sleep issues.

Furthermore, sleep issues and disorders are common among individuals with developmental and neurocognitive disabilities, as well as among other disorders. These disabilities include Down syndrome, Fragile X syndrome, autism spectrum disorder (ASD), attention-deficit/hyperactivity disorder (ADHD), depression, anxiety and mood disorders, developmental delays, intellectual disabilities, traumatic brain injury (TBI), specific learning disability (SLD), and dyslexia (Carotenuto et al., 2016; Hooper et al., 2004; Hvolby, 2015; Krakowiak et al., 2008; Lopes & Fu-I, 2021; Shelton & Malow, 2021). These are common disabilities, disorders, and conditions among students with whom school psychologists typically interact with, assess, and create interventions for. Thus, it would appear prudent for school psychologists to have some knowledge of assessment, screening, and treatment of sleep related difficulties as part of their professional practice.

Adequate quality and quantity of sleep is especially important for school-aged individuals to be able to function at school because without sleep, skills related to learning, cognition, and emotional regulation suffer (Galván, 2020). The American Academy of Sleep Medicine (AASM; Paruthi et al., 2016) developed consensus recommendations concerning the optimal amount of sleep to promote the health of children and adolescents. The AASM outlines the following sleep recommendations: children aged 3 to 5 years should sleep 10 to 13 hours per 24 hours (including naps), children aged 6 to 12 years should sleep 9 to 12 hours per 24 hours on a regular basis, and teenagers aged 13 to 18 years should sleep 8 to 10 hours per 24 hours on a regular basis. In essence, the biological need for sleep for children and adolescents remains, but challenges related to quality and quantity of sleep among school-aged individuals (ages 6 to 18) is on the

rise (Paruthi et al., 2016). In fact, according to the Centers for Disease Control and Prevention (CDC) pediatric sleep deficits (which is defined as sleeping less than the recommended durations for a particular age group) represent a prevalent problem among high school-aged individuals (9th to 12th graders; CDC, 2017). In general, the scientific research on sleep suggests that children and adolescents are not getting enough sleep (Olds et al., 2010; Smaldone et al., 2007). Not only does this uptick in sleep related challenges and the general trend of insufficient sleep quantities pose a threat to global public health (Tsao et al., 2021), but as Buckhalt (2013) states, it also presents a need for school-based professionals to intervene and prevent sleep challenges by educating and training staff on: (a) sleep and the impacts of insufficient sleep, (b) recognizing and screening for sleep difficulties and disorders, and (c) considering sleep when conducting special education evaluations and developing individualized education programs (IEPs).

While school-based professionals in general should be concerned with sleep, this rise in sleep difficulties and general decrease in sleep quantity is especially pertinent to the work of school psychologists. School psychologists have knowledge of school-wide screening practices and skills in research to locate and implement evidence-based sleep interventions, as well as skills to collaborate with parents and other medical professionals to coordinate and promote the best possible outcomes for students. Additionally, school psychologists are heavily involved in the evaluation of students for special education services and the development of IEPs. Within this process, school psychologists are generally charged with interacting with a variety of school personnel to collect data to ascertain difficulties that may be contributing to a student's ability to be successful at school. Deficits in sleep can be a significant factor affecting a student's ability to be successful at school (Bernier, 2021). Thus, it is the job of school psychologists (and other school professionals) to be concerned with sleep issues as they consider appropriate supports,

interventions and instructional strategies for students and their families, and while conducting comprehensive evaluations for special education services. It would be expected then, given the challenges related to sleep deficits and the rise in sleep problems among school-aged individuals, that schools and school psychologists are conducting regular screenings for sleep-related difficulties and disorders, and incorporating sleep assessments/screenings into their comprehensive psychoeducational evaluations for special education. The scientific literature however paints a bleak story concerning regular sleep assessment and screening among school psychology practitioners.

For example, a recent exploratory study conducted by Drapeau (2021) which surveyed 100 school psychology practitioners and 59 school psychology graduate educators found that very few school psychology graduate programs reported offering formal training in behavioral sleep medicine and even fewer programs reported the training of evidence-based sleep interventions. Additionally, among the surveyed school psychologists, 80% reported receiving no formal classroom instruction or training in behavioral sleep medicine and even fewer reported receiving any practical experience during practicum or internship assessing and/or treating sleep disorders. The survey also revealed that many school psychologists reported rarely screening/assessing for sleep disorders as part of comprehensive special education evaluations and treating sleep disorders within the school setting was seldomly reported as being done. Lastly, many of the surveyed graduate educators reported feeling a lack of confidence in their preparation of their graduate students with regards to sleep training, and many school psychology practitioners reported feeling unprepared to assess and treat student's sleep difficulties. This study provides some evidence supporting the idea that sleep is not a primary focus within the discipline of school psychology despite the known deleterious effects of insufficient sleep and

sleep disorders on youth. Overall, Drapeau's (2021) study highlights a scarcity of sleep training and general consideration of sleep within the school psychology profession. Less is known, however, about the barriers and facilitators of implementing sleep assessments/screeners among school psychology practitioners.

A broader preliminary review of the school psychology literature appears to support Drapeau's findings and the general notion that sleep is not a noticeable focus within the school psychology profession/literature. A search of several of the prominent peer-reviewed school psychology journals including the following: *School Psychology Review*, *School Psychology* (formerly known as *School Psychology Quarterly*), *Psychology in the Schools*, *School Psychology International*, *Journal of School Psychology*, *Journal of Educational Psychology*, came up with very few studies with sleep as a focus. Equally scarce are studies that look at the use of sleep assessment and screening among school psychologists. Sleep assessment and regular evaluation of sleep does not appear to be a typical part of the evaluation process in school assessment and the lack of sleep-related articles suggests that sleep and its impact on students does not play a major role among professionals in school psychology. In contrast, a broad search of the literature including medical databases using the search terms "school" and "sleep assessment" with limiters for age 0–18 years (e.g., MEDLINE, CINAHL, ERIC, APA PsychINFO, Educational FullText and the Psychology and Behavioral Sciences Collection) yielded 118 results. Several articles outlining sleep assessment measures were found, but no mention of these measures was found in a subsequent search of the school psychology literature. Overall, this brief search of the literature seems to align with Buckhalt's (2013) view that sleep is not a primary topic taught or discussed among school-based professionals.

The impact of insufficient sleep has been examined across a broad range of subjects with particular focus on the interactions between a lack of sleep and performance on cognitive and psychological tasks (Lim & Dinges, 2010). Additionally, the research literature demonstrates that school-aged individuals with sleep deficits demonstrate lower performance on cognitive measures (Mantua & Simonelli, 2019).

The work of school psychologists often revolves around and can rely on the use of assessments that measure cognitive, psychological, and academic functioning. These types of assessments are especially pertinent for school psychologists as they are used to help inform eligibility for, and placement in, specialized education programs (Schmidt, 2021). Given the broad documentation of empirical research demonstrating the deleterious impacts of insufficient sleep, the reliance on standardized assessments tools and measures in school psychology, as well as the lack of sleep awareness, there is the possibility of cognitive and behavioral assessment measures providing an inaccurate representation of a student's skills if sleep issues are an unidentified/overlooked confounding variable. There is also the real concern of inappropriate placement in special education for reasons that reflect a sleep-related issue affecting memory, learning ability, emotions, and/or behavior rather than an identifiable disability that would require specialized instruction.

A more concrete implication for school psychologists revolves around the law that governs special education and the requirements for evaluations and qualification for services. Specifically, section 300.304 (c) (6) of the Individuals with Disabilities Education Act (IDEA, 2004) states that an evaluation is sufficiently comprehensive to identify all the child's special education and related service needs, regardless of whether they are commonly linked to the disability category. This section of IDEA essentially requires special education teams, including

school psychologists, to explore, assess for, and account for any and all potential information that could be a barrier to a student's learning. Overall, there are potentially serious implications for students and school psychologists if sleep is not considered, assessed, or screened for when conducting comprehensive evaluations (Schmidt, 2021). As previously discussed, school psychologists are not typically trained in the assessment, diagnosis, or treatment of sleep problems and have a general lack of knowledge about pediatric sleep problems (Cain & Sakakini, 2017). In addition, there currently exists very little in the way of research that explores the potential barriers and reasons why this is the case.

Purpose of the Study

This study expands the research literature and facilitates change regarding sleep-related issues within the context of school psychology. School psychologists can and should play a role in screening, evaluating, and providing support to those students with sleep difficulties or disorders. The current study expands on the work of Drapeau (2021) by providing an additional sample and expanding data collection to include identification of barriers and facilitators of regular sleep screening/assessment among school psychology practitioners, as well as asking about specific measures or procedures used by practitioners. This was achieved by conducting an online Qualtrics survey that explored the proportion of practicing school psychologists surveyed ($N = 105$) who reported regularly treating sleep disorders, conducting sleep assessments and screenings, what sleep measures and tools are being used, as well as identifying potential barriers and facilitating factors that influence school psychologists' assessment and treatment of sleep disorders/difficulties. Hopefully this survey and its results can begin to tease apart what school psychologists are doing to address the sleep needs of students and why there might be a lack of stress placed on sleep within the profession.

Another goal of this study is to provide school psychology practitioners with practical recommendations including a list of free, accessible, and easily implementable sleep assessment resources/screeners that can be utilized in their practice. The overarching goal is to normalize and facilitate the use of sleep screening within school settings and to relay the message to school psychologists that sleep is an incredibly important factor for student success at school. Moreover, school psychologists are not only in a position to help with sleep-related difficulties, but they also have the expertise within their scope of practice to make a difference. With a little training and when provided with resources they can and should consider, assess, and address sleep-related issues.

Research Questions

The following questions are the research study aims:

1. What proportion of school psychologists sampled report using sleep assessment measures or screeners as part of their practice?
2. If school psychologists are regularly assessing sleep, what assessment tools are they using (including formal and informal methods)?
3. What barriers might exist that impede school psychology practitioners from regularly evaluating or screening for sleep disorders/difficulties?
4. Of those practitioners who regularly screen/assess for sleep, what factors have facilitated their ability to do so (what factors helped them overcome the barriers)?

CHAPTER 2

Review of Literature

The literature concerning sleep among school-aged individuals focuses on the negative impacts of sleep disruption on daily living, cognitive and academic functioning and the increased rates of sleep difficulties and school-aged children getting less sleep. The school psychology literature however appears to demonstrate a consistent lack of focus/awareness on sleep and the implications for school psychology practitioners. In particular, there appears to be a consistent number of sleep experts and researchers in the field indicating that sleep is often overlooked and underrepresented in the school psychology literature while practitioners themselves are receiving infrequent and inadequate training in assessing, screening, and treating sleep problems/disorders (Buckhalt, 2013; Cain & Sakakini, 2017; Drapeau, 2021; Ezell, 2019). Additionally, to the author's knowledge, nothing in the existing literature suggests reasons why assessment and screening of sleep issues is not regularly discussed or implemented within the school psychology profession. Because sleep deficits and disorders are on the rise among American children (CDC 2017; Schlarb et al., 2010), and given the well-established associations between inadequate sleep and emotional, physical, cognitive and behavioral health, and the existence of several easy-to-implement resources for school psychology practitioners (Lewandowski et al., 2010), an exploration of the use/lack of use of such sleep assessment measures/screeners among school psychologists might shed more light on why this seems to be an overlooked topic or focus.

Impact of Insufficient Sleep on School-Aged Individuals

Sleep is an essential part of life that plays an integral role in human learning (Curcio et al., 2006). Sleep is so crucial to learning and overall health/well-being that a large body of

scientific literature is devoted to the research and discovery of the benefits of sleep as well as the deleterious impacts of deficient sleep.

The American Academy of Sleep Medicine (AASM) published a consensus article reviewing 864 research papers with the objective of creating guidelines/recommendations for the amount of sleep needed to promote optimal health in children and adolescents. In addition to these sleep duration recommendations, the AASM summarized their findings from this extensive literature review. The authors concluded that there were several positive associations between regularly sleeping the recommended daily durations and the following factors: improved attention, behavior, learning, memory, emotion regulation, quality of life, mental and physical health. In contrast, the authors describe several negative associations including, problems with attention, behavior, and learning. Additionally, the authors suggest that deficient sleep increases the risk of accidents, injuries, hypertension, obesity, diabetes, and depression. Lastly, the authors discovered that a lack of sleep among teenagers is associated with increased risk of self-harm, suicidal thoughts, and suicide attempts (Paruthi et al., 2016).

A meta-analytic review conducted by Buckhalt and colleagues (2009) describes the role sleep plays in academic performance and cognitive functioning. In particular, this literature review explored the scope to which sleep can impact school-aged individuals and the role of school psychologists in this process. The authors indicate that several factors such as inadequate sleep time, erratic sleep schedules, late bedtimes and rise times, and poor sleep quality are associated with poorer school performance. Poorer school performance outcomes have included lower teacher ratings, grades, individual and group achievement test scores, specialized tests indicating lower neuro-cognitive functioning, and comprehensive norm-referenced intelligence battery scores.

Buckhalt and colleagues (2009) also describe several studies focused on the association between deficient sleep and/or problematic sleep patterns and academic performance. Results of these studies show that such factors contribute to poor school performance for a wide age range of children. In addition, the authors also discuss evidence that demonstrates a strong correlation between cognitive impairment and sleep deprivation among adults. The authors also indicate how a small number of studies involving children have shown consistent evidence that there is diminished cognitive performance after sleep is restricted by just one hour per night. Buckhalt and colleagues (2009) also discuss how clinical disorders and sleep deficits are linked. The authors report there is strong evidence that children with sleep disorders also have neurocognitive problems. Although the association is likely correlative, there may also be causative factors related to severity of symptoms. They describe moderate evidence that children with ADHD, intellectual disabilities, autism, anxiety, depression, and epilepsy have co-occurring sleep problems that play a role in school performance.

Buckhalt and colleagues (2009) continue and indicate that other factors related to stress, and trauma can negatively impact sleep and thus impact academic performance. The authors also indicate that socioeconomic status (SES), obesity and asthma can play a role in sleep and thus academic performance. There is a litany of reasons why a student may be having difficulties academically and cognitively and they may be related to sleep difficulties that are possibly not related to a disability or in combination with a disability. The job of the school psychologist is to carefully consider all factors related to a child's learning and/or difficulties at school which should include assessing sleep-related issues and determining the potential role sleep might be playing in an observed difficulty that a child is having at school.

With respect to school psychologists, practitioners in this field rely on cognitive and psychological assessment to help inform placement, eligibility for special education, interventions and supports for students. Research regarding cognitive functioning and sleep includes a strong body of evidence suggesting that when sleep duration is shortened or disrupted, cognitive functioning on several tasks suffers (Mantua & Simonelli, 2019). In a meta-analysis conducted by Lim and Dinges (2010), short-term sleep deprivation had a significant negative impact on simple attention, complex attention, processing speed, working memory, and short-term memory among adults 18 years of age and older. These studies highlight the importance of sleep as it relates to cognition. Sleep and the lack thereof can play a significant role in collection of data using assessments of intelligence and other cognitive and psychological measures. Therefore, it is imperative that when school psychology practitioners conduct assessments using cognitive or psychological measures, the potential impact of sleep is acknowledged as they gather and interpret data. It is also important that school psychologists ensure that an underlying sleep deficit or disorder is not the root cause or aggravating factor of an observed learning or behavioral problem.

Another study looked at the associations between sleep problems, cognitive, and social emotional functioning from preschool to adolescence. Jung and Jin (2019) found that sleep problems at the early age of three were directly associated with later socioemotional difficulties in the first grade, third grade and as late as age 15. However, no significant effect of early sleep problems on later cognitive functioning was observed.

Lastly, in the aptly titled, “Sounding the Alarm on Sleep: A Negative Association Between Inadequate Sleep and Flourishing,” Tsao and colleagues (2021) describe chronic sleep loss as an increasingly pervasive issue in society to the point of it being increasingly recognized

as a global public health crisis. The authors reference several factors contributing to the inadequate duration of sleep among children and adolescents including things like, electronic device usage, evening circadian phase preference, and school start times. The authors also describe several associations discovered in the literature between inadequate sleep and several detrimental effects. Most notably, among adolescents, associations have been found between insufficient sleep and increased substance abuse, higher rates of motor vehicle accidents, depression, lesser degrees of alertness, emotion regulation problems, obesity, and impaired decision making. Among younger children, Tsao and colleagues (2021) cite reduced sleep being associated with obesity, poor academic performance, and impaired perceptual reasoning.

Aside from exploring the detrimental effects of insufficient sleep, Tsao and colleagues (2021) assessed the association between sleep duration and childhood flourishing (flourishing was defined as positive development across various domains including physical health, social behavior, cognitive/academic development, relationships, and emotional well-being). To answer this question, the authors examined the combined data from the 2016-2017 National Survey of Children's Health (NSCH). The NSCH is a parent-reported survey on measures of child well-being. Overall, this sample included 49,050 children. Inadequate sleep was defined as less than 9 hours of sleep for 6- to 12-year-olds and less than 8 hours of sleep for 13- to 17-year-olds. Flourishing was operationalized using five individual markers using the following phrases asked to parents, "shows interest and curiosity in learning new things," "works to finish tasks he or she starts," "stays calm and in control when faced with a challenge," "cares about doing well in school," and "does all required homework." Each marker considered a child to be flourishing if parents answered, "definitely true." Results of this study showed that just over a third of 6- to 12-year-olds and just under a third of 13- to 17-year-olds had inadequate sleep. Additionally, this

inadequate sleep was associated with decreased flourishing in children including motivation, attention, and emotional regulation. In other words, children with inadequate sleep were more likely to be reported as not flourishing by their parents, including showing less interest in learning, not caring about doing well in school, not doing homework, not finishing tasks, and not staying calm and in control when challenged. Overall, this study provides evidence that insufficient sleep is not only common among children and adolescents, but also can have significant implications for overall well-being and success in school. Ultimately, this work underscores the importance of screening and identifying those children at greater risk for sleep difficulties/disorders.

Prevalence of Sleep Deficits and Disorders Among School-Aged Individuals

As discussed briefly in the introduction, the CDC, using the Behavioral Risk Factor Surveillance System (BRFSS), can provide data critical for monitoring national and state population health. BRFSS surveys were used to estimate sleep duration across the United States. The data collected from these surveys shows that more than two-thirds of US high school students report getting less than eight hours of sleep on school nights (CDC, 2017). Also, the CDC reports pediatric sleep deficits (adolescents reporting getting fewer than seven hours of sleep each night) represents a prevalent problem among high school-aged individuals (9th to 12th graders). Although estimates vary, reporting of these deficits have shown a consistent upward trajectory over the past 20 years or so. Recent estimates from 2013 report estimates of 68% (adolescents reporting getting less than seven hours of sleep) while reports from 2015 estimate reports of 73% (CDC, 2017).

Additional meta-analytic data reveals that estimated nighttime sleep duration among children in the 3- to 5-year-old group was 9.68 hours. Other estimates of nighttime sleep duration

among other groups was 8.98 hours for 6 – to 8-year-olds, 8.85 hours for 9- to 11-year-olds, 8.05 hours for 12- to 14-year-olds, and 7.40 hours for 15- to 18-year-old age group (Galland et al., 2018). Overall, these data suggest that on average, children, adolescents, and teenagers are not receiving the amount of sleep recommended by the ASSM for optimal health (3- to 5-year-olds need 10 to 13 hours, 6- to 12-year-olds need 9 to 12 hours, and 13- to 18-year-olds need 8 to 10 hours). Another meta-analytic research study examined the literature dating from 1905 to 2008 with 690,747 school-aged participants from 20 countries, results showed that there has been a steady decline in sleep duration of children and adolescents by about one hour each night over the past 103 years (Matricciani et al., 2012).

In addition to the rise of inadequate sleep among school-aged individuals, there are several disabilities and disorders that are commonly associated with an increased risk in sleep-related difficulties. This point is particularly important considering school psychologists regularly assess, develop interventions for, and engage with students presenting with the disorders and disabilities that are detailed in the section below.

Common Disabilities and Disorders Co-Occurring With Sleep Issues

Sleep issues and disorders are common among individuals with developmental and neurocognitive disabilities among other disorders. These disabilities include Down syndrome, Fragile X syndrome, autism, ADHD, depression, anxiety and mood disorders, developmental delays, intellectual disabilities, traumatic brain injury, specific learning disability, and dyslexia (Carotenuto et al., 2016; Hooper et al., 2004; Hvolby, 2015; Krakowiak et al., 2008; Lopes & Fu-I, 2021; Shelton & Malow, 2021). Each of these disabilities are commonly seen in schools, commonly associated with learning differences and difficulties, and commonly included in a school psychologist's training and professional caseload.

Common Pediatric Sleep Disorders

Pediatric sleep disorders can manifest in behavioral insomnias of childhood, either sleep onset association type or limit setting type. They can also have a biological origin, the most concerning of which is sleep apnea because of the uncertainty regarding adequate maintenance of oxygen levels in the brain. Parasomnias, periodic limb movement disorder, excessive sleepiness, narcolepsy, and delayed sleep phase syndrome have different origins and treatment regimens but are also common during childhood and adolescence (Mindell & Owens, 2015). It is possible given that such disorders are rather common, that a good number of students are negatively impacted at school. If such students are living with one of the aforementioned conditions, it is likely to assume that their sleep is disrupted, which in turn can affect their behavior, academics, and social interactions. Additionally, learning could be disrupted due to changes in treatment regimens, medication, and interference with sleep. School psychologists and other mental health providers in schools are in positions to help work with pediatricians and parents to provide accommodations, strategies and supports to ensure that such students can learn and access their education. School psychologists are also in a position for early identification of such sleep disorders. If a student is having difficulty accessing their education for any reason it is the job of the professionals within the school, including school psychologists, to investigate the potential reasons why a student may be having challenges.

Sleep Assessment/Screening Among School Psychology Practitioners

Review of the National Association of School Psychologists Website

A preliminary search on the National Association of School Psychologists (NASP) website using the term “sleep assessment” yields only one result. An article in the January/February 2021 issue of the NASP news magazine, *Communiqué* (volume 49, number 5)

by Schmidt (2021), which explores the topic of sleep assessment among school psychologists. He covers the well-documented impact of sleep deficits on school aged individuals. Schmidt (2021) also discusses the prevalence of sleep assessment among school psychologists and suggests a stark reality for this topic. Schmidt (2021) suggests that the school psychology literature has yet to examine the proportion of school psychology practitioners who regularly assess sleep. Additionally, Schmidt mentions how the lack of sleep assessment research articles suggests that sleep does not appear to play a prominent role in practice of school psychology. Schmidt also discusses the implications of not regularly assessing sleep as part of a comprehensive psychoeducational evaluation.

A broader search of “sleep” on the NASP website yields 227 results. A large portion of these results are unrelated to sleep assessment or screening, but focus on interventions for sleep, associations between insufficient sleep and school-related functioning, sleep fact sheets, and one brief sentence mentions sleep-related issues. One of these 227 results, however, does discuss sleep assessment. This result is a podcast entitled, *Implementing Sleep Screening and Interventions in School Settings* where John Desrochers (editor of NASP practitioner publication, *Communiqué*) interviews Erin Ezell (advanced school psychology graduate student studying health and school issues) on sleep screening, sleep assessment, and sleep interventions within a school context. In this podcast, Ezell suggests that sleep is not regularly a part of the assessment process among school psychology practitioners (Ezell, 2019).

Other relevant articles/resources discovered on the NASP website include a handout for parents that covers information about sleep problems, sleep duration recommendations, and sleep interventions (Perfect & Frye, 2018). Another handout aimed at principals discusses the importance of adequate sleep and the consequences of sleep deprivation on adolescent students’

mental health, behavior, and school functioning. This handout also stresses to administrators and educators the importance of screening for sleep problems when a student is having attention or behavior problems. The article ends by recommending several activities that school administrators can do to help address the effect of sleep problems including: (a) psychoeducation for staff on the importance of sleep and the associated effects of deficit sleep, (b) ensuring appropriate accommodations are in place for sleep-related issues, (c) identifying community resources, (d) and evaluating the feasibility of modifying school schedules/start times (Dawson, 2005).

Another relevant resource by Laracy and colleagues (2015) discusses the importance of sleep and explicitly covers the topic of sleep assessment. The authors suggest that given the relationship between sleep, academic, cognitive, behavioral, and emotional functioning that sleep should be considered when assessing all children with suspected learning, behavioral, or emotional disorders. The article continues by emphasizing the importance of school psychologists to regularly assess the quantity of sleep a child is receiving. The article ends by providing interventions for sleep challenges as well as providing recommendations for school psychology practitioners regarding when to refer out to a medical professional for sleep-related issues.

A similar article provides an overview of the sleep research and how sleep is evaluated. The authors also highlight some screening tools that practitioners could use to help identify sleep difficulties. The last point the article makes is the need to provide teachers, school psychologists, other school personnel with training in recognizing and treating sleep difficulties while also emphasizing the need to address sleep education on a large scale with ongoing support throughout a student's educational career (Buckhalt et al., 2007).

The final relevant article found on the NASP website provides eight guiding principles for school psychologists to know about pediatric sleep problems. These principles include: (a) associations between a child's daily functioning and insufficient sleep, (b) sleep problems being present and related to various disabilities, (c) evidence supporting the use of screening tools (and thus the importance of prevention and early intervention), (d) problem-solving based interventions, (e) the importance of teaching students sleep hygiene (one of the best prevention strategies), and lastly (f) how education about sleep issues for school psychologists can greatly increase their capabilities to assess and treat such problems, despite a seeming lack of training (Sakakini & Terjesen, 2012).

Overall, this brief search of the NASP website does suggest that sleep is an important topic that the discipline believes practitioners should be aware of, however, the actual relevant articles and resources related to conducting sleep assessment and screening are few and far between. In fact, only two of these articles provided practitioners with actual sleep screening/measurement tools that could be used. This apparent acknowledgement of the importance of sleep, yet lack of resources related to the topic suggests a disconnect between knowing that sleep is an important topic/consideration and providing practitioners with the resources, knowledge, and training to properly recognize, assess, screen, and treat sleep-related difficulties/disorders.

Review of the Scientific School Psychology Journals

As of February 2022, a preliminary search in several peer-reviewed school psychology journals highlighted very few articles with sleep as the focus, furthering the suggestion that sleep assessment/screening and sleep are topics that are not prominent within school psychology research literature. Sleep in general appears to be a somewhat under-researched topic within the

lens of the school setting. For example, within the journal *School Psychology Review*, zero articles were found with the search terms “sleep assessment,” while one result was found using the search terms, “sleep screening.” The focus of this 2008 article is a general overview of pediatric sleep disorders and highlighting the need for a psychometrically sound universal screening tool to help professionals working with youth and adolescents in screening and identifying pediatric sleep disorders. The authors then provide evidence for the use of the Sleep Disorders Inventory for Students (SDIS), a sleep disorder screener which can be used by school professionals (Luginbuehl et al., 2008). The broader search term of “sleep” resulted in 81 articles with only one article with sleep in the title (the article mentioned previously). A search within *School Psychology* (formerly known as *School Psychology Quarterly*) resulted in no articles for either “sleep assessment” or “sleep screening.” A search using “sleep” however resulted in three articles, one with sleep in the title. The focus of this 2009 meta-analytic review with sleep in the title describes the role sleep plays in academic performance and cognitive functioning. In particular, this literature review explores the scope to which sleep can impact school-aged individuals and the role of school psychologists in this process. This study has been discussed in an earlier section of this paper (Buckhalt et al., 2009). In the *Journal of School Psychology*, the search string “sleep assessment” as well as the search string “sleep screening” yielded no results while the keyword “sleep” yielded 60 results with only one result with sleep actually in the title. *School Psychology International* also resulted in no articles for the search terms “sleep assessment” or “sleep screening” and 55 results for “sleep” with only three articles containing sleep in their titles. The journal *Psychology in the Schools* also resulted in zero search results related to “sleep AND assessment” and 214 results for “sleep” with only four articles with sleep in their titles. Additionally, a search in the *Journal of Psychoeducational Assessment* yielded no

results for the search terms “sleep assessment” or “sleep screening,” while a broader search using “sleep” resulted in 25 articles that did not contain sleep in their titles.

Searches in the following journals also resulted in few articles related to sleep assessment or sleep screening: *Educational Psychologist*, *Journal of Educational Psychology*, *Educational Psychology Review*, and the *Journal of Applied School Psychology*. While not an exhaustive review of the literature by any means, there does appear to be a lack of research/emphasis on sleep assessment/screening within the profession of school psychology. In contrast, a brief search using the term “sleep assessment” and “school” in the following databases: MEDLINE, APA PsycINFO, the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Psychology and Behavioral Sciences Collection, Education Resources Information Center (ERIC), and Education Full Text yielded 118 results (filtered for ages 0-18 years). Most of the results were found within the medical databases of MEDLINE (49) and CINAHL (14). This search, while not comprehensive nor exhaustive, suggests that there is a potential disconnect between the prominence of research surrounding sleep assessment and screening that is present in the medical/clinical literature, compared to the relative scarcity of sleep assessment and screening within the school psychology/educational scientific literature.

Overall, the lack of sleep assessment or screening-related published research or guidance suggests that sleep does not play a prominent or consistent role in the practice of school psychology. Sleep appears to not be regularly considered during the evaluation for special education services, and screening for related issues is seldomly done within the practice of school psychology. Regular sleep assessment and screening is vital for early proactive intervention and prevention (Cain & Sakakini, 2017; Mindell & Owens, 2015; Schmidt, 2021; Williamson et al., 2019), especially considering increasing prevalence of insufficient sleep

among school-aged individuals, the associated impacts that sleep issues can have on learning, cognition, general functioning, and general health and well-being. Despite the apparent lack of sleep-related research within the scientific school psychology literature, and apparent deficiency of knowledge and/or training in assessment, screening, diagnosis and treatment of sleep difficulties/disorders, there is promising evidence that suggests school psychologists who read three articles alone show a significant increase in their sleep-related knowledge (Cain & Sakakini, 2017). Furthermore, there exists a litany of sleep measures and screeners that are psychometrically sound, free and easy to use; resources that can be easily incorporated into any school psychologist's repertoire.

Sleep Screeners and Measures for School-Aged Children

Lewandowski and colleagues (2010) surveyed the pediatric sleep assessment and measurement literature to provide a review of the psychometric properties and evidence base of several parent and child-report sleep measures using criteria developed by the American Psychological Association (APA) Division 54 Evidence-Based Assessment (EBA) Task Force. The research team located and reviewed 21 pediatric sleep measures. Four of these measures were related to daytime sleepiness, four to sleep habits/hygiene, two were focused on sleep-related attitudes and cognition, and five on sleep initiation and maintenance. There were an additional six multidimensional sleep measures reviewed. The results of this review found 6 of the 21 to meet well-established criteria, eight were approaching well-established criteria, and seven were rated as meeting criteria for promising (Lewandowski et al., 2010). Well-established measures for school-aged children included the: Pediatric Sleep Questionnaire (PSQ; Chervin et al., 1997; Chervin et al., 2000), Children's Sleep Habits Questionnaire (CSHQ; Goodlin-Jones et

al., 2008; Owens et al., 2000), Sleep Disturbance Scale for Children (SDSC; Bruni et al., 1996), and finally the Pediatric Daytime Sleepiness Scale (PDSS; Drake et al., 2003).

Another measure, the Sleep Disorders Inventory for Students (SDIS; Luginbuehl, 2003) was found by Luginbuehl and colleagues (2008) to correctly identify 71% of children and 79% of adolescents with sleep disorders. Additionally, Buckhalt (2013) not only endorses the regular use of sleep screening measures among schools and educators but also provides recommendations for several sleep screeners/measures. Buckhalt (2013) endorses the use of the previously mentioned PSQ, CSHQ, SDIS, and PDSS while also recommending the BEARS (Owens & Dalzell, 2005) a screening interview for sleep problems, the Sleep Habits Survey (SHS; Wolfson et al., 2003), and the Children's Report of Sleep Patterns-Sleepiness (CRSP-S; Meltzer et al., 2012). A recent Internet search (June 2023) found that a majority of these measures continue to be readily available at no cost, with easily accessed scoring and interpretation instructions. Longstanding research establishes the availability and psychometric properties of sleep measures to assist in identifying sleep disorders in school age children. Therefore, cost and availability should not be barriers to the use of validated sleep screening measures.

Given the easy availability of screeners and the importance of sleep screening and assessment in the practice of school psychology, this study aims to describe what barriers and facilitating factors for incorporating sleep screening and assessment into practice among school psychologists. The intention is to build upon existing research to further inform both training and practice.

CHAPTER 3

Method

The questionnaire and method for this study were approved by Brigham Young University's Institutional Review Board (IRB). The IRB's letter of approval can be found in Appendix A.

Participants

Participants included United States residents practicing as school psychologists or interns ($n = 101$), school counselors ($n = 1$), licensed psychologists ($n = 1$), clinical psychologists ($n = 1$) and diagnosticians ($n = 1$). Of those respondents, a majority were female (84%), identified as white (92.3%), were school psychologists (90%), and were working primarily in a pre-kindergarten through 12th grade school setting (97.1%). Detailed demographic information can be found in Table 1. Data were collected between October 2022 and February 2023.

Questionnaire

Given the research questions and the minimal existing research within the field on sleep assessment/screening/treatment as an area of practice within the profession of school psychology, a questionnaire was built upon/adapted from earlier work by Drapeau (2021). Our questionnaire was adapted with permission from the author, Drapeau (2021). The questionnaire was developed/adapted to examine the prevalence of sleep assessment, screening, and treatment among school-based mental health practitioners (school psychologists, school counselors, and school social workers) with a particular focus on school psychologists. Additionally, there is evidence within the literature to suggest that there is minimal training in assessment, screening, identification, and treatment within these school-based professions (Buckhalt, 2013; Drapeau, 2021). As such the questionnaire was also developed to begin to understand what reasons might

exist among these school based mental health professionals that impede or facilitate their ability to provide sleep-based supports within the school setting (from the perspective of the school-based professionals themselves). The full questionnaire can be found in Appendix B.

Table 1

Demographics by Region

Baseline characteristics	Mountain West (<i>n</i> = 60)	National (<i>n</i> = 42)	Missing (<i>n</i> = 3)	Total (<i>N</i> = 105)
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Gender				
Male	12 (20)	3 (7.1)	-	15 (14)
Female	47 (78.3)	38 (90.5)	3 (100)	88 (84)
Non-binary/third gender	1 (1.7)	-	-	1 (1)
Missing	-	1 (2.4)	-	1 (1)
Race/ethnicity				
Asian	3 (5)	-	-	3 (2.9)
Hispanic	1 (1.7)	1 (2.4)	-	2 (1.9)
White	53 (88.3)	41 (97.6)	3 (100)	97 (92.3)
Multiracial ^a	3 (5)	-	-	3 (2.9)
Employment setting				
PreK to 12 th grade	58 (96.7)	41 (97.6)	3 (100)	102 (97.1)
University setting	-	1 (2.4)	-	1 (1)
Other ^b	2 (3.3)	-	-	2 (1.9)
Employment position				
School psychologist	54 (90)	41 (97.6)	3 (100)	98 (93.3)
School counselor	1 (1.7)	-	-	1 (1)
Other ^c	5 (8.3)	1 (2.4)	-	6 (5.7)
Highest degree obtained				
EdS	36 (60)	22 (52.4)	-	58 (55.2)

Baseline characteristics	Mountain West (<i>n</i> = 60)	National (<i>n</i> = 42)	Missing (<i>n</i> = 3)	Total (<i>N</i> = 105)
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
PhD ^d	5 (8.3)	7 (16.7)	2 (66.7)	14 (13.3)
Master's degree ^e	13 (21.7)	8 (19)	-	21 (20)
Other ^f	6 (10)	5 (11.9)	1 (33.3)	12 (11.5)
Years practicing				
0-5 years	30 (50)	11 (26.2)	-	41 (39)
6-10 years	9 (15)	14 (33.3)	-	23 (21.9)
11-15 years	7 (11.7)	8 (19.1)	-	15 (14.3)
16-20 years	6 (10)	3 (7.1)	-	9 (8.6)
21-25 years	3 (5)	2 (4.8)	1 (33.3)	6 (5.7)
25+ years	5 (8.3)	4 (9.5)	2 (66.7)	11 (10.5)

Note. “National” defines a geographic location in the USA other than the Mountain West states of Utah, Idaho, Arizona, Colorado, Montana, Nevada, New Mexico, and Wyoming.

^a Multiracial responses included: one pacific islander/white, one middle eastern/white, one Brazilian/Latino and white. ^b Other employment settings included: a clinical setting, and a pediatric medical office. ^c Other employment positions included: three school psychologist interns, one clinical psychologist, one licensed psychologist, and one diagnostician. ^d PhD degrees included 11 in School Psychology (SP), one in clinical psychology, one in counseling psychology, and one in experimental psychology. ^e Master's degrees (MS) included: 18 in SP, one in special education, one in school counseling, and one in family studies. ^f Other degrees included: six Educational Specialist (EdS) candidates, one PsyS in SP, one M.Ed. in SP, two MA 6th year certificates, one PsyD in SP, and one Certificate of Advanced Study (CAS) in SP.

Measures

The questionnaire itself contained 17 questions, 7 of which were demographics questions (several related to professional setting/position), 3 Likert-style questions, 1 rank order question, 2 open-ended response questions, and 4 forced choice questions. Several multiple-choice questions offered an additional other box where respondents could type in their own information if the provided responses did not apply. The questionnaire also included information about consent/participation as well as a question about participants being 18 years of age or older. Participants were generally asked about their professional practices related to sleep assessment, screening, or treatment of youth sleep related difficulties/disorders. Additionally, several questions asked about what factors may help or hurt such professionals from participating in sleep assessment, screening, or treating youth sleep difficulties within their particular professional settings. Skip logic was used in the survey to ensure participants did not have to answer questions that were not relevant to them. Upon completion of the survey, Qualtrics collected the participants' IP addresses which were then used to determine the participants' approximate regional location.

Procedures

Inclusion Criteria

In order for participants to be included in the survey, they self-confirmed that they practiced within the United States, were 18 years of age or older, and worked or had worked as a school psychologist or within a related field (school counselor, school social worker, clinician), primarily working with school-aged youth. The primary targets for the survey were currently practicing school psychologists working in pre-kindergarten through 12th grade settings, however respondents who did not fit this profile were still encouraged and allowed to participate.

The majority of respondents were in fact school psychologists working in a school-based setting (97%). Of the total responses ($N = 110$), one response was removed as the respondent only answered the first demographic question regarding being over the age of 18. Of the remaining responses, 103 out of 109 (94%) were fully completed.

Participant Recruitment

School psychologists and other professionals in related fields were recruited through various methods of convenience sampling including the following: word of mouth, the author's professional connections, acquisition of publicly available emails of school psychologists on school district websites, as well as via a major school psychology-based Facebook group and a smaller local school psychology alumni Facebook group.

More specifically, the author and advisor reached out to the professional community and asked them to complete and share the survey link/recruitment script with their colleagues. Additionally, the authors compiled a list of publicly accessible email addresses from a variety of states and school districts. Around 5 to 10 emails of school psychologists were gathered from each state and an IRB-approved email recruitment script was sent to each email address. Email addresses were acquired by searching the Internet for, "school districts in [state name]," a random school district was then selected, and the website was explored for emails for that school district's school psychologists. A copy of the email recruitment script was sent to each email address gathered. Lastly, the link to the survey was posted to two psychology specific Facebook groups. The first Facebook group was called, Said No School Psychologist Ever, with over 22,000 members. To gain access to this group, potential members must answer a short questionnaire indicating their relation to school psychology (e.g., be a school psychologist, retired, intern, in a graduate program or otherwise) as well as explain why they want access.

Once accepted into the group, members wanting to post research must contact one of the moderators/administrators and get pre-approval. This process involves contacting a moderator/administrator and providing proof of IRB approval. Upon receiving approval, the rules allow for an original post and one additional repost of a link to the research. Permission was granted to the authors and the survey was subsequently posted. The final Facebook group the survey was posted to was, BYU School Psychology, which has around 150 members consisting of former or current BYU students and faculty of the school psychology program. Upon approval for entrance into the group, the administrator was asked for permission to post the link to the survey. Permission was granted by the lead moderator of the group and the link to the survey was then posted.

No compensation was offered for participation, however, participants who completed the survey were entered into a drawing to win a \$50 Amazon e-gift card. Upon completion of the main survey, participants were provided a link to a separate Qualtrics survey where they could provide an email address to have the e-gift card sent to if they were selected as a winner. While 100 participants began this survey, 94 provided an email address. All participants who provided an email address were randomly assigned a number between 1 and 94. A random number generator was then used to select a number between 1 and 94 three times. Those three generated numbers were selected as winners and linked to the email addresses provided. Winners were emailed a code to redeem their gift card. With 94 participants providing a valid email address the odds to win were 3 out of 94 (3%). Participants were notified prior to participation that their odds of being selected to win were between 1% and 3% depending on the number of participants.

While convenient, this method of participant sampling has limitations and as response rates to the survey were relatively low, and it is possible that those who chose to respond to the

survey self-selected because they have strong opinions about the study's topic whether it be positive or negative. Along these same lines, bias could also be present due to the lack of true random sampling, although there was an element of random selection when pulling emails from district websites. Participants were not asked how they heard about the survey, however, so there is no data about the relative proportion of responses gathered from random sampling vs. word of mouth. Analysis by participant geographic region described below was used as a proxy to determine any differences between regional (possibly recruited via word of mouth) and national (possible random sample) participants and their responses.

Design and Data Analysis

The current study utilized a non-experimental design (i.e., descriptive survey research study). An online questionnaire was created and administered via Qualtrics to determine the prevalence of regular sleep assessment/screening as well as the potential barriers and facilitating factors of implementation of sleep screening/assessment among school-based professionals.

Data analysis involved descriptive statistics to quantitatively compute the surveyed responses and perceptions of school based mental health professionals. A majority of the questions and their subsequent responses were assigned numerical values, usually ranging from one up to the number of options. For example, questions with the options of *never*, *sometimes*, *often*, *almost always* and similar type responses were assigned numerical values of one through four to allow for statistical analysis of participant responses.

A handful of independent sample *t*-tests were conducted to determine if participants' responses on whether or not they frequently conducted sleep assessments, screenings, or treatment of youth sleep difficulties/disorders within their settings differed between demographic

groups (e.g., geographical region, sex, years in the field, race/ethnicity, professional position/setting, degree obtained etc.).

Open-ended and other responses were analyzed qualitatively using Consensual Qualitative Research methods (CQR; Hill et al., 2005) to identify common themes among responses. In this case, the open-ended responses were compiled and analyzed for common themes by the first author, then a second expert reviewer looked through the same dataset looking for their own themes. Finally, the two authors discussed and compared what themes they saw, and a consensus was reached about overarching themes within the responses.

CHAPTER 4

Results

Data collection started in October of 2022 and concluded in February of 2023, with a total of 110 participants responding to the survey. One participant was excluded from the sample due to not answering any questions beyond the first question which asked if the respondent was 18 years of age or older. Four participants answered some of the initial basic demographic information before terminating their participation in the survey. As such those participants were removed and excluded from the final analysis. After these removals a total of 105 participants were left who fully completed the survey. Four of these 105 participants reported working within a field related to school psychology, their responses were included in the analysis.

Due to the heavier response rates from Mountain West states, the data were separated into two groups. One group consisting of the participants from the Mountain West states (Utah, Idaho, Arizona, Colorado, Montana, Nevada, New Mexico, and Wyoming) and another group consisting of the non-mountain west states (all other states outside of the ones mentioned) called the National sample, to determine if major differences in responses were present between these subgroups. No significant differences between the Mountain West group ($n = 60$) and the National group ($n = 42$) were found on a majority of the surveyed items. For example, in terms of participant responses to how often they treat, screen, and assess sleep difficulties/disorders, whether sleep was a consideration during evaluations, and which evaluations they screened for sleep difficulties, no significant differences were found between each group's responses. Additionally, no differences were found between the groups on a variety of demographic characteristics, with the exception of, employment position/title and gender.

Categorical responses such as employment title were assigned scores for analysis. Mean scores (and standard deviations) for responses to employment position/title of the Mountain West group was 1.35 (1.18), while the National group was 1.1 (0.68). The results of the t -test were as follows, $t(100) = 1.34, p = .007$. Differences in employment position/title between the groups appear to be in part due to more respondents in the Mountain West group selecting the *other* option which was assigned the highest value (1 = *school psychologist*, 2 = *school counselor*, 3 = *school social worker*, 4 = *university educator*, and 5 = *other*). With that said three of the five respondents who selected the *other* option reported being school psychology interns and would still be considered school psychologists (refer to Table 1 for detailed demographic breakdown).

In terms of gender, the mean (with standard deviations in parentheses) of the Mountain West group was 1.82 (0.43), while the mean of the National group was 1.93 (0.26). The results of the t -test were $t(99) = -1.46, p < .001$. The gender differences between the groups appear to be due to the higher proportion of male respondents in the Mountain West group compared to female respondents (note that, *male* = 1, *female* = 2, *third gender/non-binary* = 3, and 4 = *prefer not to say*).

The only differences found between the Mountain West group and the national group were related to role description and gender, which are not surprising given the variety of job titles for school-based mental health professionals across the country. Gender differences are perhaps interesting, but school psychologists are predominantly (87.5%) female (Goforth et al., 2021). Results are presented and discussed with all participants represented as one group.

Reported Sleep Assessment/Screening Among Practitioners

The first research question and aim of the current study was to estimate the percentage or proportion of school psychologists (and other related professionals) who report using sleep

assessment measures or screeners as part of their practice. Most of the respondents including school psychologists and other school-based mental health professionals indicated that they *never* screen students for sleep related issues or disorders, while a smaller portion reported only screening *sometimes*. An even smaller portion indicated screening *often* and only a handful indicated screening *almost always* (see Table 2).

Table 2

How Often do you Screen Students for Sleep-Related Issues or Disorders

Response option	Group totals
	<i>n</i> (%)
<i>Never</i>	51 (48.6)
<i>Sometimes</i>	36 (34.3)
<i>Often</i>	11 (10.5)
<i>Almost always</i>	6 (5.7)
Missing	1 (1)
Totals	105 (100)

Note. Question rated on a scale of 1-4, with 1 being *never* and 4 being *almost always* ($M = 1.73$, $SD = 0.873$).

Sleep Considerations During Special Education Evaluations

Participants were also asked whether a student's sleep was a consideration when conducting special education evaluations. Many participants reported that sleep was in fact a consideration when they were conducting special education evaluations, while about a third of

participants indicated that sleep was not a consideration and several reported being unsure. Those participants who did indicate that sleep was a consideration when they are conducting special education evaluations were then asked if they assess for sleep difficulties/disorders during most evaluations or only during certain ones. Over half of the respondents reported assessing *only during certain evaluations* while fewer reported assessing *during most evaluations* or even *during every evaluation*, lastly a handful indicated that none of the options fit their practices and selected the *other* option (see Table 3). Common themes identified among the responses to the *other* selection were as follows: during initial special education evaluations, if sleep related concerns were reported, and [that they] do not formally assess sleep disorders.

Table 3

Is Sleep a Consideration When you are Conducting a Special Education Evaluation? Do you Assess for Sleep Difficulties/Disorders During Most Evaluations or Only Certain Ones?

Response option	Subgroup	Total group
	<i>n</i> (%)	<i>n</i> (%)
<i>Yes</i>		68 (64.8)
<i>During every evaluation</i>	7 (13.2)	
<i>During most evaluations</i>	8 (15.1)	
<i>Only during certain evaluations</i>	31 (58.5)	
<i>Other</i> ^a	7 (13.2)	
<i>No</i>		30 (28.6)
<i>Unsure</i>		6 (5.7)
Missing		1 (1)
Totals	53 (100)	105 (100)

Note. Question one was rated on a scale of 1-3, with 1 being *yes* and 3 being *unsure* ($M = 1.4$, $SD = 0.6$). The second question was rated on a scale of 1-4, with 1 being *during every evaluation* and 4 being *other* ($M = 2.72$, $SD = 0.863$).

^a Other responses included the following themes: only during initial special education evaluations, if sleep related concerns were reported, and not *formally* assessing sleep disorders.

Treatment of Sleep Disorders

Due to skip logic that was used in the survey, only those participants who indicated some level of screening and said yes to assessing for sleep disorders during special education

evaluations were asked if they had ever treated sleep disorders within their work settings. An overwhelming majority of the participants indicated that they had never treated sleep disorders in their work setting, and only a few indicated that they were either *unsure* or had treated a sleep disorder. Those that indicated that they had treated a sleep disorder in their work setting were then asked what treatments/interventions they had used. Of those three participants, one reported using sleep hygiene education, behavioral modification, and sleep studies. This respondent reported working primarily within a pediatric medical office and was a clinical psychologist. Another participant reported using sleep hygiene education and they reported being a school psychologist working primarily in a pre-kindergarten to 12th grade school setting. The last participant was also a school psychologist working primarily in a pre-kindergarten to 12th grade school setting but did not respond to the question about their use of specific treatments or interventions (see Table 4).

Table 4

Have you Ever Treated Sleep Disorders in Your Work Setting?

Response option	Group total
	<i>n</i> (%)
<i>Yes</i>	3 (5.6)
<i>No</i>	47 (88.8)
<i>Unsure</i>	3 (5.6%)
Totals	53 (100%)

Note. Question rated on a scale of 1-3, with 1 being *yes* and 3 being *unsure* ($M = 2.0$, $SD = 0.34$).

Tools Used to Assess/Screen for Sleep Difficulties/Disorders

Another research question related to the current study was to find out what the most common forms of assessments, screeners, and other tools school psychologists (and other school-based mental health professionals) were reporting using. Because some participants reported *never* screening for sleep difficulties/disorders only the portion that responded with some affirmative degree of screening for sleep disorders/difficulties were asked the question pertaining to their sleep screener and assessment usage. Most of the participants indicated the use of primarily informal methods only. A small portion of the participants reporting using a combination of both formal and informal methods/tools, while an even smaller portion indicated the use of formal methods/tools only. Participants who selected the *informal methods* or *other* options were asked to specify their answers. Participants most commonly described their *informal methods* as a usage of various forms of interviews or informal questionnaires (e.g., parent, student, and teacher interviews, social/developmental/medical histories, and observations). Two of the participants selected the *other* method option and indicated using a couple of unlisted formal measures, such as the Patient Reported Outcomes Measurement Information Systems (PROMIS®) sleep screener (PROMIS Health Organization, 2008-2022), and the Sleep Disturbance Scale on the Conners Behavior Rating Scale (CBRS; Conners, 2008). See Figure 1 for a more detailed breakdown.

Barriers to Sleep Assessment, Screening, and Treatment

Quantitative Results - Barriers

The next research question dealt with trying to understand the potential barriers that might exist that impede school psychology practitioners from regularly evaluating or screening for sleep disorders or difficulties. Of the 103 participants who answered this question, a vast

majority (83%) indicated that a *lack of training* was a barrier, followed closely by 73% citing a *lack of awareness to sleep screening/treatment resources*, with 53% indicating a *lack of related coursework in my graduate program*, as a barrier, and finally, 25% of participants selected, *have not considered sleep as part of my practice*. All other responses were below 25%. See Figure 2 for an extended list of participant selections.

Qualitative Results - Barriers

The *other* option was selected 15 times (14% of participants). Those participants who selected *other* as a barrier were asked to specify. Those responses were then analyzed using CQR methods (Hill et al., 2005). Three overarching themes were identified: (a) sleep assessment, screening and treatment was viewed as outside of their professional scope of practice, (b) if sleep is not reported it is not addressed nor assessed, and (c) reported frustrations around the inability to impact/control the home environment of the student (see Table 5 for more detail).

Figure 1

Sleep Screening Methods Used (n = 54)

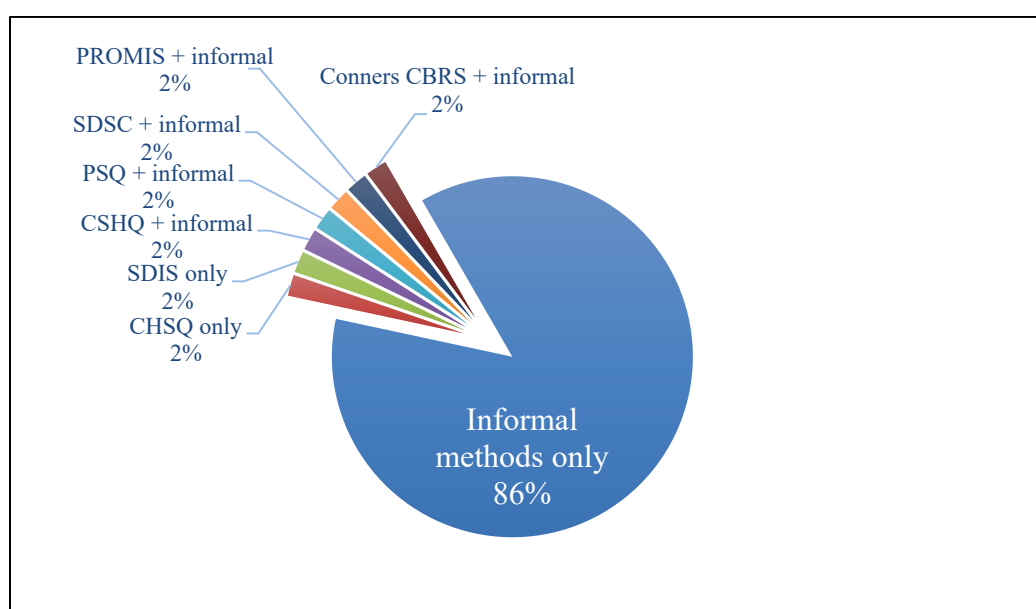
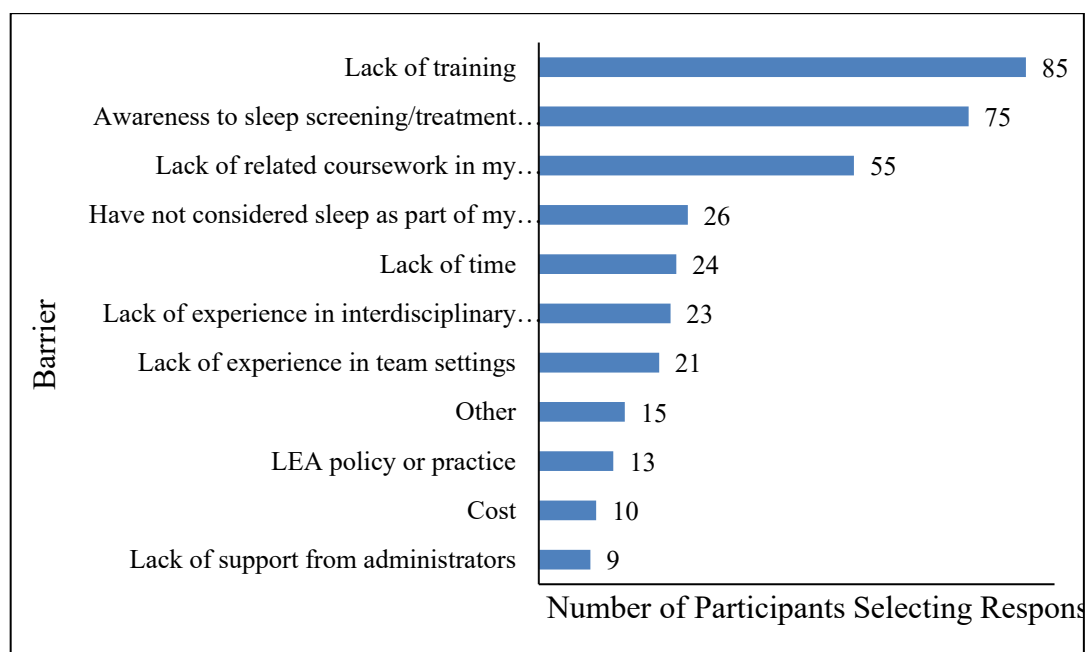


Figure 2

Barriers to Screening, Assessing, and Treating Sleep Difficulties/Disorders (n = 103)

**Table 5**

Themes of Qualitative Responses to “Other” Reported Barriers

Theme	Subtheme (n)
Theme 1: Outside scope of professional practice	Lack of qualifications (1)
	[We are] not medical professionals (2)
	Not typically done/not done within my practice (2)
	Not a part of SPED law (3)
Theme 2: Frustrations around impacting or controlling the home environment	Lack of influence on home life (5)
Theme 3: Sleep problems not reported	Lack of resources once sleep data is collected (1)
	Sleep is only addressed if concerns are brought up by parents or via behaviors (1)

Graduate Coursework Related to Sleep

Going along with participants reporting a lack of sleep related coursework as a potential barrier, participants were also asked a separate question about their sleep related training in their graduate coursework/programs. More specifically, they were asked about the number of graduate courses that spent at least one hour discussing the identification, assessment, and/or treatment of youth sleep disorders. A majority of individuals reported having no graduate courses that spent at least one hour discussing sleep, while nearly a quarter of participants reported having at least one course. A very small number of participants reported having two or more courses, none of the participants reported having more than four courses discussing sleep. A handful were *unsure* about the number of courses they had about sleep (see Table 6 for more detail).

Table 6

How Many of Your Graduate Courses Spent at Least One Hour Discussing the Identification, Assessment, and/or Treatment of Youth Sleep Disorders?

Response option (number of hours of training)	Group total <i>n</i> (%)
0	60 (57.1)
1	24 (22.9)
2	5 (4.8)
3	1 (1)
4	1 (1)
4+	-
<i>Unsure</i>	12 (11.4)
Missing	2 (1.9)
Total	105 (100)

Note. Rated on a scale of 1-7, with 1 being 0 hours and 7 being *unsure* ($M = 2.1$, $SD = 1.92$).

Facilitating Factors to Sleep Assessment, Screening, and Treatment

The last research question attempted to understand some of the factors that have facilitated practitioners who regularly screen/assess for sleep. In other words which barriers were removed or reduced which helped practitioners more easily incorporate sleep screening, assessment, and treatment into their professional practices. Or which factors would make it easier to incorporate such practices.

Quantitative Results - Facilitators

Participants were asked to rank several options from a list from the most important or impactful factors to least important or impactful. The following factors were ranked as first or most important most frequently: *training* followed by *awareness to sleep screening/treatment resources* and then by *local education agency (LEA) policy or practice* (see Table 7).

Table 7

Rank the Following Facilitating Factors to Assessing, Screening and/or Treating Youth With Sleep Difficulties/Disorders From Most Important to Least Important

Facilitating Factor	Percentage of Participant Rankings by Factor Selected									
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Training	47	24	13	9	6	-	-	1	-	-
Awareness of sleep resources	24	27	19	9	9	5	3	2	2	-
LEA Policy or Practice	10	12	7	4	4	10	3	11	37	2
Low cost of resources	2	10	16	14	23	11	11	8	5	-
Support from administrators	1	7	11	11	17	17	13	13	10	0
Other	4	-	1	1	1	-	-	-	-	93
Related graduate coursework	5	12	16	20	6	12	7	7	13	2
Experience in inter-disciplinary settings	2	2	4	12	9	26	22	16	7	-
Experience in team settings	-	2	4	6	10	11	31	22	11	3
Low time commitment	5	4	9	14	15	8	10	20	15	-

Note. ($n = 100$), LEA = Local Educational Agency

Qualitative Results - Facilitators

While very few participants ranked the *other* option highly amongst their facilitating factors, some participants provided specific detail to their response. Those *other* responses were compiled and analyzed for common themes using CQR methods (Hill et al., 2005). Three

overarching themes were identified after an analysis. The first theme was access to professional development and other resources, the second theme was, more clarity on the role and flexibility of school psychologists, and the final theme was, better interdisciplinary, home/school relationships. See Table 8 for more detail on themes.

Table 8

Themes of Qualitative Responses to “Other” Reported Facilitating Factors

Theme	Subtheme (<i>n</i>)
Theme 1: Access to professional development and other resources	Access/better visibility of resources to influence the home environment (2)
	Program to hold parents accountable (1)
Theme 2: More clarity/training on the role and flexibility of school psychologists	If it was part of the law or LEA policy (1)
	Outside of scope, not medical professionals (2)
Theme 3: better interdisciplinary, home/school relationships	Access/collaboration with medical professionals (1)

CHAPTER 5

Discussion

The purpose of this study was to explore the prevalence of school psychologists who regularly report using sleep assessment measures and/or screeners. Additionally, this study attempted to explore the methods and tools that school psychologists report using to assess and screen for sleep difficulties and disorders. This study also aimed to build upon previous research by providing an additional sample of school psychologists reporting on their sleep screening, assessment, and treatment practices. The current study also expanded on previous research by attempting to identify barriers and facilitating factors of regular sleep screening, assessment, and treatment among school psychology practitioners.

Findings

Prevalence of Sleep Assessment and Screening

The results of the current study appear to align with prior survey research of school psychologists conducted by Drapeau (2021). Not only did the current study have a comparable number of participants with a similar demographic diversity but the results showed some similar findings. For example, the current study showed that among the school psychologists who were surveyed, 49% reported that they *never* screen students for sleep related issues or disorders, while 35% reported only screening for sleep related issues or disorders *sometimes*. Prior research showed that 77% participants reported *never* screening for sleep disorders, while 16% reported screening *sometimes*. While prior research did find a higher proportion of school psychologists reporting *never* screening, the current research expanded the question to include sleep related issues and disorders rather than solely asking about sleep disorders. This inclusion of sleep related issues into the question could partially explain why more school psychologists reported

sometimes screening rather than *never* screening, or this could reflect differences or changes in graduate school training. This last explanation may be less likely, as the results showed that more than half of participants reported having no graduate courses that spent at least one hour discussing the identification, assessment, and/or treatment of youth sleep disorders. Additionally, prior research (Drapeau, 2021) indicated that few of the surveyed participant's graduate courses were exclusively devoted or spent at least one entire class period on the identification, assessment, and/or treatment of youth sleep disorders. In other words, even when the question was reduced to only having one of their courses spend at least one hour discussing sleep there were still reports of minimal exposure and training surrounding sleep within graduate programs. With that said, the fact remains that both the current study and prior research found that most school psychologists report never screening for sleep disorders, or sleep-related issues.

The current findings are problematic given the scientific literature on sleep and its impact on everyday performance. Not only does the literature report a litany of well-established detrimental impacts of insufficient sleep on youth (Buckhalt et al., 2009; Galván, 2020; Mantua & Simonelli, 2019; Mindell & Owens, 2010) but many scientists also plead for practitioners to routinely screen for sleep problems given that certain sleep problem trajectories not only persist but unfold over time (Williamson et al., 2019). Also, the high prevalence of sleep disturbances among developmentally delayed children (Mindell & Owens, 2015) also argues for sleep screening as part of a comprehensive school evaluation. School psychologists are poised to lead out on routine sleep screening to ensure proactive, preventative, and positive outcomes for youth.

Sleep Screening and Assessment Methods Used

Another aim of this study was to discover what methods school psychologists were using to screen and assess for sleep issues and disorders. An overwhelming majority reported the use

of informal methods only. Many of which included various interviews with a variety of people as well as medical/developmental histories. A small portion of school psychologists reported the use of both informal and formal methods and even smaller portion reported the use of only formal methods. In other words, few school psychologists are utilizing the many free, standardized, time efficient, and evidence-based sleep assessments and screeners. Informal methods are not bad or inferior in any way to formal methods, but as will be discussed later, many school psychologists indicated a lack of awareness regarding sleep assessment, screening, and treatment resources as a barrier to implementation of such practices.

Additionally, many school psychologists cited training as another barrier to implementation of sleep practices. Many participants reported having limited exposure to sleep-related topics within their graduate coursework in both this study and prior research; prior research indicated that school psychologists reported having only some practical sleep-related experiences during internship and practicum (Drapeau, 2021). Given these factors it is possible to assume that many school psychologists, especially newer practitioners in the field, are unaware of the available sleep screening assessment tools, or might not know what questions to ask parents, students, or teachers pertaining to sleep habits. Luckily, Cain and Sakakini (2017) provide school psychology practitioners with guidance on sleep assessment and screening and provide an informal sleep habits questionnaire. Additionally, Buckhalt (2013) along with Cain and Sakakini (2017) provide guidance as well as a list of evidence-based formal questionnaires for practitioners to utilize.

These results indicate a need to better equip practitioners with the tools required to effectively assess and screen for sleep issues and disorders. This includes better exposure and hands on training with such measures as identified and recommended by experts, especially

those that are deemed evidence based. Given that sleep problems and disorders are common among adolescents and youth and often go hand-in-hand with other disabilities (Mindell & Owens, 2015), and are often not mentioned nor addressed by primary care physicians (Buckhalt, 2013), along with the fact there appears to be minimal training around sleep within school psychology graduate programs and within the field in general (Buckhalt, 2013; Drapeau, 2021), it lends credence to the idea that standardized evidence-based sleep measures and tools need to be put in the hands of school psychologists. Especially those tools that are easily accessible, easy to understand, administer and score. Several recommendations for sleep measures can be found later in this discussion.

Sleep and Special Education Evaluations

Results from the current study also indicated that a large portion of school psychologists believed sleep to be an important consideration when conducting special education evaluations (64.8%), and yet of those participants a majority reported assessing for sleep related issues or disorders only on certain evaluations (58.5%), while an even smaller portion reported either assessing during most evaluations (15.1%) or during every evaluation (13.2%). These results appear to suggest that most school psychologists do not regularly screen or assess for sleep issues or disorders when conducting special education evaluations. Furthermore, there appears to be a disparity between recognizing that sleep is an important factor/consideration and intentionally incorporating regular screening and assessment practices to rule out or identify sleep concerns when conducting special education evaluations. Moreover, when school psychologists were asked if they have ever treated sleep disorders in their work setting, only three participants said yes. These results align with prior research which also found that many surveyed school psychologists are not regularly assessing for sleep disorders as part of special

education evaluations, or treating sleep problems within their settings (Drapeau, 2021). Overall, these combined results indicate that sleep and sleep related issues continue to be an overlooked, underrepresented, undereducated and undertrained topic within the school psychology profession (Buckhalt, 2013; Cain & Sakakini, 2017; Ezell, 2019).

With these data showing that a limited number of school psychologists are assessing for sleep-related issues or disorders during special education evaluations, the notion posed by Schmidt (2021) stands to be true about the lack of sleep assessment in school psychology. Furthermore, the implications for special education evaluations becomes even more important given the relationship between sleep and cognitive processing, learning, memory, social-emotional functioning, poor academics, and behavior problems (Buckhalt, 2013; Laracy et al., 2015). Additionally, school psychologists often rely on performance on standardized assessments, which can be impacted by the effects of sleep issues and disorders, thus creating a problem for the validity and reliability of such assessments. As such, Cain and Sakakini (2017) suggest that school psychologists ask about sleep during standardized assessment and during those first interactions with a referred student. Additionally, Laracy and colleagues (2015) suggest that sleep should be considered when assessing any child with a suspected learning, behavioral, or emotional disorder. Furthermore, having school psychologists integrate sleep assessment into their evaluation practices can be seen as a way of ensuring all relevant data is accurate and can then be used to confidently make informed equitable decisions about students, which in turn has the potential to create cascading effects on students' learning and school outcomes (Schmidt, 2021). Lastly, screening students sleep habits can be effectively done by school psychologists in a few minutes (Laracy et al., 2015) and can be accomplished as easily as vision or hearing screenings (Buckhalt, 2013).

Barriers to Screening, Assessing, and Treating Sleep

The question then becomes why screening is not more prevalent? Despite the numerous and well documented deleterious effects a lack of sleep can have on school-aged youth (Buckhalt et al., 2009; Galván, 2020; Mantua & Simonelli, 2019; Mindell & Owens, 2010), along with increasingly deficient sleep among youth (Olds et al., 2010; Smaldone et al., 2007; Tsao et al., 2021), the growing number of time-efficient and easily accessible sleep screening/assessment tools, and positive reports of significant gains in sleep-related knowledge after minimal study (reading three articles; Cain & Sakakini, 2017), why does this topic continue to be overlooked? Why are school psychologists seemingly aware of this problem of sleep but not implementing simple preventive screeners, assessments or implementing basic psychoeducation on the importance of sleep along with basic sleep hygiene recommendations? Furthermore, what things can be done to make the implementation of screening, assessing, and treating sleep difficulties and disorders easier for school psychologists?

This study attempted to examine a portion of these questions by asking school psychologists the perceived barriers and facilitating factors. The most prominent barriers indicated by school psychologists were lack of training, lack of awareness of sleep screening, assessment and treatment resources, and a lack of sleep-related coursework in their graduate programs. A smaller but sizeable portion cited that they have not considered sleep as part of their practice, others indicated that a lack of time and experience in both team and interdisciplinary settings were barriers. Even fewer school psychologists reported cost, LEA policy or practice, or lack of support from administrators as barriers. There were also sizable number of participants who identified other barriers that were not listed on the questionnaire.

The main themes of those responses appeared to be school psychologists feeling that sleep was not within their professional scope of practice. For example, one participant wrote, “I only consider sleep as being tangentially related to my practice” while another participant wrote, “...I feel like it is out of the scope of my practice assessing for [sleep during] IEPs and that this info is better assessed by sleep clinics in a medical setting.” Another main theme identified was sleep being addressed only if problems were reported or observed. The final main theme identified were school psychologists reporting frustrations around impacting/controlling the home environment of the student. For example, a participant wrote, “I think I would push for sleep screening measures if I felt we could “do” something about that part of the environment. The best I can do is talk with parents about it.” The concerns expressed by this final quote appear to be a real concern and more research and resources are needed in relation to this particular topic.

The other themes and subsequent concerns posed by school psychologists appear to run contrary to the scientific literature. For example, Buckhalt (2013) argues that not only is sleep the business of schools, but he also suggests that many of the children with sleep problems are likely to have their sleep problems not come to the attention of their primary care physician. He goes on to say, “School is the only place where the preponderance of those children with problems have a chance of being discovered” (Buckhalt, 2013, p. 295). Additionally, Cain and Sakakini (2017) suggest that even a minimal amount of training, such as reading three articles, can significantly increase the knowledge of school psychologists which then allows them to be more aware of the signs and symptoms of sleep disorders and make more informed decisions about making a proper referral or provide treatment. The authors also state that it is vital for school psychologist to ask about sleep habits. Finally, an article published by NASP in the

Communiqué suggests the following, “school psychologists can effectively assess sleep habits in only a few minutes, and can often improve students’ sleep with brief interventions.” (Laracy et al. 2015, p.1). In other words, research and guidelines exist to support the idea that sleep is within the scope of school psychologists and that school psychologists have the training and expertise to screen, assess and treat sleep difficulties and disorders, and know when to make necessary referrals to medical experts. Domains two and seven of the 10-domain NASP Practice Model (NASP, 2020) emphasize consultation and collaboration. Specifically, domain two states that school psychologists demonstrate skills to promote appropriate implementation of services through effective consultation, collaboration, and communication. Furthermore, domain seven states that school psychologists understand principles and research related to family systems, strengths and needs. As such, school psychologists understand how to develop relationships between families and schools as well as facilitate interactions with community resources (NASP, 2020). These domains become particularly pertinent given the known issues sleep can pose on student academics, health, social, behavioral, and emotional outcomes. These domains suggest that school psychologists have the knowledge and skills to help support and educate families and other school-based professionals about sleep. Additionally, many caregivers do not know what healthy sleep for their children looks like and many have gaps in their knowledge on this topic (Owens et al., 2011). This finding further stresses the importance of school psychologists educating themselves about sleep, so they can then use their skills and expertise to impart that knowledge on families to promote the health and success of many students and youth.

In summation, the barriers appear to boil down to a general lack of exposure to sleep, the issues surrounding sleep and ways to identify and support sleep issues despite many experts and the major professional associations indicating that sleep and its related implications for students

are in fact within the scope, capabilities, and expertise of school psychologists. The responses from practitioners however indicate that despite what the research and professional bodies suggest, better training at the graduate and professional level (NASP conventions, professional webinars, district level seminars, professional development opportunities, built-in requirements for sleep related experiences in internship/practicum) is desperately needed. Furthermore, additional awareness about youth sleep issues is needed along with more easily accessible and visible resources and assessment measures/tools are in need of dissemination by organizations such as NASP and other state-level school psychology associations.

Facilitating Factors to Screening, Assessing, and Treating Sleep

The current study also asked participants about potential factors that bolstered or removed barriers to the implementation of sleep screening, assessment, and treatment. By far, most participants consistently ranked training as the most important facilitating factor. The next closest was awareness of sleep screening, assessment, and treatment resources, followed by LEA policy or practice. Lack of LEA policy or practice being ranked as highly as it was, came as a surprise to the authors. This result seems to suggest that if the law or a school district mandated sleep assessment then school psychologists would take more stock in sleep-related issues. Conclusions regarding this finding can scarcely be made and further research would need to be conducted to understand what practitioners mean when they indicate LEA policy or practice as an important facilitating factor.

Interestingly, sleep-related graduate coursework was not ranked as highly as expected given its prior focus within earlier research. Overall, these results seem to indicate a real need for training and professional development opportunities for school psychology practitioners to

expand their knowledge base on sleep issues, as well as provide them with practical sleep resources, such as screeners, assessments, sleep hygiene treatments, handouts, etc.

The need for additional training is further underscored when analyzing several of the *other* responses provided by participants. For example, even when asking about facilitating factors, one participant said the following in all caps, “OUTSIDE SCOPE OF SCHOOL ROLE (NOT MEDICAL PROFESSIONALS).” Another participant expressed a similar sentiment stating that “assessment [of sleep is] more appropriate for medical sleep clinics,” while another respondent expressed that a facilitating factor would be if there were “IDEA evaluation requirements [around sleep].” While this is the view of only a few participants, it still sheds light on the need for training and education on sleep within the school psychology profession.

This lack of training and education on sleep does appear to be exclusive to the field of school psychology, however. One study by Zhou and colleagues (2021) found that many of the surveyed clinical psychologists in the study received minimal formal sleep training but reported being well prepared to treat/evaluate sleep disorders and their treatment recommendations did not align with current evidence-based standards. The authors conclude by calling for better training for clinical psychologists. Similarly, an older study (Meltzer et al., 2009) found that surveyed graduate program directors of clinical psychology programs reported that their institutions were ineffective in providing sleep education. The authors of this study also call for more opportunities for experiential and instructional training in sleep for clinical psychologists.

While training and exposure to sleep education is more extensive within the field of clinical psychology when compared to that of school psychology (Drapeau, 2021; Zhou et al., 2021) the scientific literature within both fields indicate a lack of sleep education and training around sleep. It is clear that exposure and awareness of sleep related topics are desperately

needed, not only within the field of school psychology but within the broader field of psychology.

Limitations

Although this study provides some preliminary evidence to explain why sleep continues to be an undereducated, undertrained, and underrepresented topic with the profession of school psychology, definitive conclusions cannot be made given the small number of practitioners represented in this study. While it is possible that graduate training programs are improving their curricula and training to cover sleep-related topics, the current sample suggests that is not the case as the current sample contains representation from both newer and more experienced practitioners.

Additional limitations concern the topic of selection bias. The methodology of convenience sampling has limitations and as response rates to the survey were relatively low, it is possible that those who chose to respond to the survey self-selected either because they have strong opinions about the study's topic whether it be positive or negative. Along these same lines bias could also be present due to the lack of true random sampling, although there was an element of random selection when pulling emails from district websites. It is also unknown if the results are truly representative of the school psychology profession as whole given the smaller sample size. Additionally, the survey more than likely did not reach all school psychologists and only those who access school psychology-related social media groups or who are within the author's professional connections had the opportunity to participate.

Future Research

Further research is needed to fully tease apart the reasons why sleep continues to be a neglected topic within the profession of school psychology. This study provided some

preliminary evidence to suggest that the major barriers that are impeding school psychologists from implementing sleep screening, assessment and treatment are a lack of sleep-related training, lack of awareness to sleep-related resources and a lack of sleep-related coursework within their school psychology graduate coursework. As such, future research could explore these barriers further at both university (pre-service) and school district (in-service) levels. Furthermore, future research could explicitly query graduate education programs about the training they give their students in sleep screening, assessment, and treatment (e.g., do these programs devote any time to sleep training and are there any assignments center around sleep).

Future research could also explore the prevalence and potential barriers to universal sleep screening at a macro level within a school context. Research is also needed to investigate the impacts of universal sleep screening within school systems. Experimental research could investigate what would happen if school psychologists were given the proper training on sleep screening, assessment, and treatment. Future research could explore the long-term impacts of minimal training, e.g., reading three sleep related articles, as Cain and Sakakini (2017) suggest, or a simple training of a few hours on sleep assessments and the importance of sleep. Lastly, research could focus on how to improve youth outcomes by implementing and integrating proactive and preventative sleep focused strategies and curricula into the school system (e.g., later start times, integrated psychoeducation about sleep hygiene for all students, universal sleep screening, training for all school staff on the impacts and importance of sleep on children's learning, current youth sleep trends, sleep duration recommendations, as well as how to recognize and refer those students who might need further support).

Recommendations for Practitioners

Based on prior research and the results of this study, there is much in the way of change needed around sleep education and training within the profession of school psychology. Several recommendations and resources are provided to address this lack of emphasis on sleep within the profession of school psychology.

Recommendation 1 – Personal Practitioner Development

It seems based on the current scientific research there is minimal education and training on sleep within school psychology graduate programs (Buckhalt, 2013; Cain & Sakakini, 2017; Drapeau, 2021). As such, until changes to the way school psychology graduate programs approach sleep training and education, practitioners are recommended to take the education around sleep into their own hands. This means digging into the scientific pediatric sleep literature.

Cain and Sakakini (2017) report that reading three articles alone has shown to improve school psychologists' knowledge and allows them to be more aware of the markers of sleep disorders as well as the potential challenges such disorders can pose on student's educational outcomes. This then allows for practitioners to make referrals if needed or provide the treatment. Listed below are several articles, books, and resources for practitioners to explore and use to help better understand youth sleep and its importance for students and thus school psychologists. Practitioners are in fact directed to Cain and Sakakini's book chapter, *School psychological practice with students with sleep problems* (2017, in *Handbook of Australian school psychology: Integrating international research, practice, and policy*) for the basics on common sleep disorders, the impacts of sleep on student outcomes, ways school psychologists can help with screening and assessment, as well as basic classroom and individualized intervention strategies.

Readers are also directed to Buckhalt's book chapter, *The role of schools in identification, treatment, and prevention of children's sleep problems* (2013, in *The Oxford handbook of infant, child, and adolescent sleep and behavior*) which provides school wide guidelines for school-based practitioners to address youth sleep problems.

For an in-depth and clinical look into pediatric sleep disorders and difficulties along with symptoms, treatment, and assessment readers are directed to Mindell and Owen's book *Pediatric Sleep* (2015, 3rd Edition).

For a more condensed and shorter article that provides information connecting sleep and school functioning along with guidelines for sleep assessment and intervention within a school psychology framework, readers are encouraged to read Laracy et al. (2015, *Sleep and school functioning: Guidelines for assessment and intervention*) in the June 2015 issue of the NASP *Communiqué*. This article also provides potential sleep interview questions, brief interventions, sleep duration recommendations, and provides a discussion on when to make a referral to an outside agency.

For those interested in learning about the role of sleep as it relates IDEA and the potential impacts on psychoeducation evaluations readers are pointed in the direction of Schmidt (2021, *A new perspective on sleep deficits and sleep assessment in school psychology*) in the January/February 2021 issue of the NASP *Communiqué*.

For an easily referenceable and distributable handout, practitioners are directed to Perfect and Frye's handout (2018, *Sleep problems: Helping handout for home*. In G. Bear & K. Minke (Eds.), *Helping handouts: Supporting students at school and home* (S4H9) which provides caregivers and practitioners 20 evidence-based recommendations to establish healthy sleep habits.

Lastly school psychologists are directed to Table 9 for useful websites that cover a wide variety of topics surrounding sleep including sleep hygiene. However, for a more extensive review of common sleep hygiene practices/recommendations, readers are directed to Allen et al. (2016) *ABCs of SLEEPING: A review of the evidence behind pediatric sleep practice recommendations*. Practitioners are encouraged to share these resources with their colleagues and provide professional learning/development for the school psychologists in their districts and schools.

Table 9*Website Resources*

Name of resource	Website address
National Sleep Foundation	https://www.thensf.org/
American Academy of Sleep Medicine (AASM)	https://aasm.org/
Accredited healthcare centers providing care for sleep disorders (AASM)	https://sleepeducation.org/sleep-center/
Sleep education resources (AASM)	https://sleepeducation.org/get-involved/campaigns/sleep-recharges/educator-resources/
Kid-friendly sleep diary	https://sleepforkids.org/pdf/SleepDiary.pdf
Centers for Disease Control and Prevention (CDC)	https://www.cdc.gov/sleep/about_sleep/index.html
National Institute of Health: National Heart, Lung and Blood Institute	https://www.nhlbi.nih.gov/health-topics/education-and-awareness/sleep-health

Recommendation 2 – Universal Sleep Screening

Due to the high prevalence of sleep issues and disorders (Mindell & Owens, 2015) among school-aged youth universal sleep screening is encouraged by practitioners. As recommended by Laracy et al. (2015) sleep should be considered when assessing all children with suspected learning, behavioral, or emotional disorders and thus it seems reasonable and prudent for practitioners to conduct sleep screenings during every special education evaluation

much like a practitioners would do to rule out vision and hearing (Buckhalt, 2013) as confounding variables. This can be done by incorporating or tacking on a sleep questionnaire on the end of a social, medical, or developmental history. Luckily for practitioners there are a number of measures for sleep available, free to use, and easy to score (see Table 10 for a detailed list of evidence-based sleep measures/screeners). For a recent update/review of youth sleep assessment measures readers are directed to Van Meter and Anderson (2020, *Evidence base update on assessing sleep in youth*).

Table 10*Sleep Measures, Screeners, and Tools*

Sleep measure, screener, or tool name	Reference
BEARS—A screening interview for sleep problems	(Owens & Dalzell, 2005)
Children’s Sleep Habits Questionnaire (CSHQ)	(Owens et al., 2000)
Pediatric Daytime Sleepiness Scale (PDSS)	(Drake et al., 2003)
Pediatric Sleep Questionnaire (PSQ)	(Chervin et al., 2000)
School Sleep Habits Survey (SSHS)	(Wolfson et al., 2003)
Sleep Disorders Inventory for Students (SDIS)	(Luginbuehl, 2003; Luginbuehl et al., 2008)
Sleep Disturbance Scale for Children (SDSC)	(Bruni et al., 1996)
Children’s Report of Sleep Patterns-Sleepiness (CRSP-S)	(Meltzer et al., 2012)

Recommendation 3 – Graduate Education Training

Although one of the longer-range solutions, school psychology training programs are encouraged to add devoted curricula including seminars, coursework, and hands-on experiences to provide education around sleep. This could be accomplished by offering electives on sleep, devoting several class periods to the assessment and treatment of sleep disorders and difficulties, offering a sleep education seminar, or even adding requirements to certain assignments to either research or consider sleep (e.g., a research paper, or during internship and/or practicum add a

requirement to assess for sleep during a case study and provide a plan for a sleep intervention). This however would dictate the need for trained faculty, in other words, graduate training programs are encouraged to hire sleep experts or offer guest lectures from sleep experts within the institution.

Recommendation 4 – Improvement to NASP Resources

Many of the resources found for this thesis came directly from the NASP website. Finding them however was not the easiest. If the NASP website had a tab or section specifically devoted to sleep with curated resources with the latest research, it could positively impact the visibility of sleep as an approachable topic within the professional of school psychology. Furthermore, NASP's series of *Best Practices in School Psychology* (2020, 7th edition) books do not have any chapters devoted to the assessment, screening or treatment of youth sleep disorders or difficulties. In any case it is encouraged that NASP as an organization provide visibility and guidance in relation to best practices on treatment, assessment, and screening of youth sleep disorders and difficulties within the next edition of the best practice books. Lastly, practitioners are encouraged to advocate for sleep related education to be added to training or accreditation requirements.

Conclusion

In summation, this study examined the proportion of school psychology practitioners who regularly reported screening for sleep issues and disorders. The study also examined the proportion of school psychologists who reported conducting sleep assessments during special education evaluations along with the tools/methods used when conducting such assessments. Finally, this study explored some of the potential factors that impede and facilitate the

implementation of sleep assessments, screening, and treatment within the field of school psychology.

The results of the study indicated that most school psychologists never screen students for sleep related issues and disorders and infrequently assess sleep when conducting special education evaluations despite many expressing that sleep was an important consideration when conducting such evaluations. During such evaluations, a majority of practitioners who reported assessing for sleep indicated the use of informal interview style tools and methods. Additionally, the results suggested that many school psychologists had minimal exposure to training surrounding the treatment and assessment of sleep problems and disorders in their graduate coursework and an overwhelming majority reported never treating sleep disorders within their work settings. Finally, results suggested that training and awareness to sleep-related resources were both major barriers and facilitating factors for school psychologist's implementation of screening, assessment and treatment of youth sleep difficulties and disorders. The results highlight the need for better education on sleep within graduate programs, more opportunities for training and professional development, as well as the need for more visible and accessible sleep resources.

REFERENCES

- Allen, S. L., Howlett, M. D., Coulombe, J. A., & Corkum, P. V. (2016). ABCs of SLEEPING: A review of the evidence behind pediatric sleep practice recommendations. *Sleep Medicine Reviews*, 29, 1–14. <https://doi.org/10.1016/j.smrv.2015.08.006>
- Bernier, A., Cimon-Paquet, C., Tétreault, É., Carrier, J., & Matte-Gagné, C. (2021). Prospective relations between sleep in preschool years and academic achievement at school entry. *Journal of Sleep Research*, 30(3), Article e13183. <https://doi.org/10.1111/jsr.13183>
- Bruni, O., Ottaviano, S., Guidetti, V., Romoli, M., Innocenzi, M., Cortesi, F., & Giannotti, F. (1996). The Sleep Disturbance Scale for Children (SDSC): Construction and validation of an instrument to evaluate sleep disturbances in childhood and adolescence. *Journal of Sleep Research*, 5(4), 251–261. <https://doi.org/10.1111/j.1365-2869.1996.00251.x>
- Buckhalt, J. A. (2013). The role of schools in identification, treatment, and prevention of children's sleep problems. In A. R. Wolfson & H. E. Montgomery-Downs (Eds.), *The Oxford handbook of infant, child, and adolescent sleep and behavior* (pp. 292–301). Oxford University Press.
- Buckhalt, J. A., El-Sheikh, M., Holthaus, C., Baker, S., & Wolfson, A. (2007). Pediatric school psychology: Children's sleep, academic performance, and school behavior. *Communiqué*, 35(8), 40–43.
<https://www.nasponline.org/publications/periodicals/communiqué/issues/volume-35-issue-8/childrens-sleep-academic-performance-and-school-behavior>
- Buckhalt, J. A., Wolfson, A. R., & El-Sheikh, M. (2009). Children's sleep and school psychology practice. *School Psychology Quarterly*, 24(1), 60–69.
<https://doi.org/10.1037/a0014497>

- Cain, N. L., & Sakakini, R. J. (2017). School psychological practice with students with sleep problems. In M. Thielking & M. D. Terjesen (Eds.), *Handbook of Australian school psychology: Integrating international research, practice, and policy* (pp. 631–640). Springer International Publishing/Springer Nature. https://doi.org/10.1007/978-3-319-45166-4_32
- Carotenuto, M., Esposito, M., Cortese, S., Laino, D., & Verrotti, A. (2016). Children with developmental dyslexia showed greater sleep disturbances than controls, including problems initiating and maintaining sleep. *Acta Paediatrica*, 105(9), 1079–1080. <https://doi.org/10.1111/apa.13472>
- Centers for Disease Control and Prevention. (2017). Health risk behaviors among students in grades 9-12, by sex, grade level, race, and Hispanic origin: United States, selected years 1991-2015. <https://www.cdc.gov/nchs/hsr/content2017.htm#052>
- Chervin, R. D., Dillon, J. E., Bassetti, C., Ganoczy, D. A., & Pituch, K. J. (1997). Symptoms of sleep disorders, inattention, and hyperactivity in children. *Sleep*, 20(12), 1185–1192. <https://doi.org/10.1093/sleep/20.12.1185>
- Chervin, R. D., Hedger, K., Dillon, J. E., & Pituch, K. J. (2000). Pediatric Sleep Questionnaire (PSQ): Validity and reliability of scales for sleep-disordered breathing, snoring, sleepiness, and behavioral problems. *Sleep Medicine*, 1(1), 21–32. [https://doi.org/10.1016/S1389-9457\(99\)00009-X](https://doi.org/10.1016/S1389-9457(99)00009-X)
- Conners, K. C. (2008). *Conners Behavior Rating Scales*. Multi Health Systems. <https://storefront.mhs.com/collections/conners-cbrs>

- Curcio, G., Ferrara, M., & De Gennaro, L. (2006). Sleep loss, learning capacity, and academic performance. *Sleep Medicine Reviews*, 10(5), 323–337.
<https://doi.org/10.1016/j.smr.2005.11.001>
- Dawson, P. (2005). *Sleep and adolescents*. National Association of School Psychologists.
<https://nasponline.org/Documents/Resources%20and%20Publications/Handouts/Families%20and%20Educators/Sleep%20Disorders%20WEB.pdf>
- Drake, C., Nickel, C., Burduvali, E., Roth, T., Jefferson, C., & Pietro, B. (2003). The Pediatric Daytime Sleepiness Scale (PDSS): Sleep habits and school outcomes in middle-school children. *Sleep*, 26(4), 455–458. <https://doi.org/10.1093/sleep/26.4.455>
- Drapeau, C. W. (2021). Lost sleep: The lack of sleep education and training in school psychology. *Contemporary School Psychology*, 26(1), 120–131.
<https://doi.org/10.1007/s40688-021-00355-8>
- Ezell, E. E. (2019, March 12). *Implementing sleep screening and interventions in school settings*. National Association of School Psychologists. <https://apps.nasponline.org/resources-and-publications/podcasts/player.aspx?id=293>
- Fallone, G., Owens, J. A., & Deane, J. (2002). Sleepiness in children and adolescents: Clinical implications. *Sleep Medicine Reviews*, 6(4), 287–306.
<https://doi.org/10.1053/smr.2001.0192>
- Galland, B. C., Short, M. A., Terrill, P., Rigney, G., Haszard, J. J., Coussens, S., Foster-Owens, M., & Biggs, S. N. (2018). Establishing normal values for pediatric nighttime sleep measured by actigraphy: A systematic review and meta-analysis. *Sleep: Journal of Sleep and Sleep Disorders Research*, 41(4), 1–16. <https://doi.org/10.1093/sleep/zsy017>

- Galván, A. (2020). The need for sleep in the adolescent brain. *Trends in Cognitive Sciences*, 24(1), 79–89. <https://doi.org/10.1016/j.tics.2019.11.002>
- Goforth, A. N., Farmer, R. L., Kim, S. Y., Naser, S. C., Lockwood, N. W., Walcott, C. M. & Affrunti, N. W. (2021). Status of school psychology in 2020: Part 1: Demographics of the NASP Membership Survey. *NASP Research Reports*, 5(2).
https://www.nasponline.org/Documents/Research%20and%20Policy/Research%20Center/NRR_2020-Membership-Survey-P1.pdf
- Goodlin-Jones, B. L., Sitnick, S. L., Tang, K., Liu, J., & Ander, T. F. (2008). The Children's Sleep Habits Questionnaire in toddlers and preschool children. *Journal of Developmental and Behavioral Pediatrics*, 29(2), 82–88. <https://doi.org/10.1097/dbp.0b013e318163c39a>
- Hill, C. E., Knox, S., Thompson, B. J., Williams, E. N., Hess, S. A., & Ladany, N. (2005). Consensual qualitative research: An update. *Journal of Counseling Psychology*, 52(2), 196–205. <https://doi.org/10.1037/0022-0167.52.2.196>
- Hooper, S. R., Alexander, J., Moore, D., Sasser, H. C., Laurent, S., King, J., Bartel, S., & Callahan, B. (2004). Caregiver reports of common symptoms in children following a traumatic brain injury. *NeuroRehabilitation*, 19(3), 175–189.
<https://doi.org/10.3233/NRE-2004-19302>
- Hvolby, A. (2015). Associations of sleep disturbance with ADHD: Implications for treatment. *ADHD Attention Deficit and Hyperactivity Disorders*, 7(1), 1–18.
<https://doi.org/10.1007/s12402-014-0151-0>
- Jung, E., & Jin, B. (2019). Associations between sleep problems, cognitive, and socioemotional functioning from preschool to adolescence. *Child and Youth Care Forum*, 48(6), 829–848. <https://doi.org/10.1007/s10566-019-09509-5>

- Krakowiak, P., Goodlin-Jones, B., Hertz-Picciotto, I., Croen, L. A., & Hansen, R. L. (2008). Sleep problems in children with autism spectrum disorders, developmental delays, and typical development: A population-based study. *Journal of Sleep Research*, 17(2), 197–206. <https://doi.org/10.1111/j.1365-2869.2008.00650.x>
- Laracy, S. D., Ridgard, T. J., & DuPaul, G. J. (2015). Sleep and school functioning: Guidelines for assessment and intervention. *Communiqué*, 43(8), 1, 18, 20–21. <https://www.nasponline.org/publications/periodicals/communique/issues/volume-43-issue-8/sleep-and-functioning-guidelines-for-assessment-and-intervention>
- Lewandowski, A. S., Toliver-Sokol, M., & Palermo, T. M. (2010). Evidence-based review of subjective pediatric sleep measures. *Journal of Pediatric Psychology*, 36(7), 780–793. <https://doi.org/10.1093/jpepsy/jsq119>
- Lim, J., & Dinges, D. A. (2010). A meta-analysis of the impact of short-term sleep deprivation on cognitive variables. *Psychological Bulletin*, 136(3), 375–389. <https://doi.org/10.1037/a0018883>
- Lopes, M. C., Fu-I, L. (2021). Sleep and mood disorder. In D. Gozal & L. Kheirandish-Gozal (Eds.), *Pediatric sleep medicine* (pp. 639–647). Springer. https://doi.org/10.1007/978-3-030-65574-7_52
- Luginbuehl, M. (2003). *Sleep Disorders Inventory for Students*. Child Uplift.
- Luginbuehl, M., Bradley-Klug, K. L., Ferron, J., Anderson, W. M., & Benbadis, S. R. (2008). Pediatric sleep disorders: Validation of the Sleep Disorders Inventory for Students. *School Psychology Review*, 37(3), 409–431. <https://doi.org/10.1080/02796015.2008.12087886>

- Mantua, J., & Simonelli, G. (2019). Sleep duration and cognition: Is there an ideal amount? *Sleep*, 42(3), Article zsz010. <https://doi.org/10.1093/sleep/zsz010>
- Matricciani, L., Olds, T., & Petkov, J. (2012). In search of lost sleep: Secular trends in the sleep time of school-aged children and adolescents. *Sleep Medicine Reviews*, 16(3), 203–211. <https://doi.org/10.1016/j.smrv.2011.03.005>
- Meltzer, L. J., Biggs, S., Reynolds, A., Avis, K. T., Crabtree, V. M., & Bevens, K. B. (2012). The Children's Report of Sleep Patterns—Sleepiness Scale: A self-report measure for school-aged children. *Sleep Medicine*, 13(4), 385–389. <https://doi.org/10.1016/j.sleep.2011.12.004>
- Meltzer, L. J., Phillips, C., & Mindell, J. A. (2009). Clinical psychology training in sleep and sleep disorders. *Journal of Clinical Psychology*, 65(3), 305–318. <https://doi.org/10.1002/jclp.20545>
- Mindell, J. A., & Owens, J. A. (2010). *A clinical guide to pediatric sleep: Diagnosis and management of sleep problems* (2nd ed.). Lippincott, Williams, & Wilkins.
- Mindell, J. A., & Owens, J. A. (2015). *A clinical guide to pediatric sleep: Diagnosis and management of sleep problems* (3rd ed.). Lippincott, Williams, & Wilkins.
- National Association of School Psychologists. (2020). Model for comprehensive and integrated school psychological services. *The Professional Standards of the National Association of School Psychologists*. <https://www.nasponline.org/x55315.xml>
- Olds, T., Blunden, S., Petkov, J., & Forchino, F. (2010). The relationships between sex, age, geography, and time in bed in adolescents: A meta-analysis of data from 23 countries. *Sleep Medicine Reviews*, 14(6), 371–378. <https://doi.org/10.1016/j.smrv.2009.12.002>

- Owens, J. A., & Dalzell, V. (2005). Use of the 'BEARS' sleep screening tool in a pediatric residents' continuity clinic: A pilot study. *Sleep Medicine*, 6(1), 63–69.
<https://doi.org/10.1016/j.sleep.2004.07.015>
- Owens, J. A., Jones, C., & Nash, R. (2011). Caregivers' knowledge, behavior, and attitudes regarding healthy sleep in young children. *Journal of Clinical Sleep Medicine*, 7(4), 345–350. <https://doi.org/10.5664/JCSM.1186>
- Owens, J. A., Spirito, A., & McGuinn, M. (2000). The Children's Sleep Habits Questionnaire (CSHQ): Psychometric properties of a survey instrument for school-aged children. *Sleep*, 23(8), 1043–1051.
- Paruthi, S., Brooks, L. J., D'Ambrosio, C., Hall, W. A., Kotagal, S., Lloyd, R. M., Malow, B. A., Maski, K., Nichols, C., Quan, S. F., Rosen, C. L., Troester, M. M., & Wise, M. S. (2016). Consensus statement of the American Academy of Sleep Medicine on the recommended amount of sleep for healthy children: Methodology and discussion. *Journal of Clinical Sleep Medicine*, 12(11), 1549–1561. <https://doi.org/10.5664/jcsm.6288>
- Perfect, M. M., & Frye, S. S. (2018). Sleep problems: Helping handout for home. In G. Bear & K. Minke (Eds.), *Helping handouts: Supporting students at school and home* (S4H9). National Association of School Psychologists. <https://www.nasponline.org/x55108.xml>
- PROMIS Health Organization (2008-2022). *Sleep Disturbance*. PROMIS Pediatric Item Bank v1.0, National Institutes of Health. <https://www.healthmeasures.net/index.php>
- Sadeh, A., Gruber, R., & Raviv, A. (2002). Sleep, neurobehavioral functioning, and behavior problems in school-age children. *Child Development*, 73(2), 405–417.
<https://doi.org/10.1111/1467-8624.00414>

- Sadeh, A., Gruber, R., & Raviv, A. (2003). The effects of sleep restriction on school-age children: What a difference an hour makes. *Child Development*, 74(2), 444–455.
<https://doi.org/10.1111/1467-8624.7402008>
- Sakakini, R., & Terjesen, M. (2012). Sleep problems among youth: What school psychologists need to know. *Communiqué*, 41(4), online exclusive.
<https://www.nasponline.org/publications/periodicals/communique/issues/volume-41-issue-4/sleep-problems-among-youth-what-school-psychologists-need-to-know>
- Schlarb, A. A., Velten-Schurian, K., Poets, C. F., & Hautzinger, M. (2010). First effects of a multicomponent treatment for sleep disorders in children. *Nature and Science of Sleep*, 3, 1–11. <https://doi.org/10.2147/NSS.S15254>
- Schmidt, T. P. (2021). A new perspective on sleep deficits and sleep assessment in school psychology. *Communiqué*, 49(5), 18–20.
<https://www.nasponline.org/publications/periodicals/communique/issues/volume-49-issue-5/a-new-perspective-on-sleep-deficits-and-sleep-assessment-in-school-psychology>
- Shelton, A. R., & Malow, B. (2021). Neurodevelopmental disorders commonly presenting with sleep disturbances. *Neurotherapeutics*, 18(1), 156–169. <https://doi.org/10.1007/s13311-020-00982-8>
- Smaldone, A., Honig, J. C., & Byrne, M. W. (2007). Sleepless in America: Inadequate sleep and relationships to health and well-being of our nation's children. *Pediatrics*, 119 (Supplement 1), S29–S37. <https://doi.org/10.1542/peds.2006-2089F>
- Tsao, H. S., Gjelsvik, A., Sojar, S., & Amanullah, S. (2021). Sounding the alarm on sleep: A negative association between inadequate sleep and flourishing. *The Journal of Pediatrics*, 288, 199–207.e3. <https://doi.org/10.1016/j.jpeds.2020.08.080>

Van Meter, A. R., & Anderson, E. A. (2020). Evidence base update on assessing sleep in youth.

Journal of Clinical Child and Adolescent Psychology, 49(6), 701–736.

<https://doi.org/10.1080/15374416.2020.1802735>

Williamson, A. A., Mindell, J. A., Hiscock, H., & Quach, J. (2019). Sleep problem trajectories

and cumulative socio-ecological risks: Birth to school-age. *The Journal of Pediatrics*,

215, 229–237.e4. <https://doi.org/10.1016/j.jpeds.2019.07.055>

Wolfson, A. R., Carskadon, M. A., Acebo, C., Seifer, R., Fallone, G., Lubyak, S. E., & Martin, J.

L. (2003). Evidence for the validity of a Sleep Habits Survey for adolescents. *Sleep*,

26(2), 213–216. <https://doi.org/10.1093/sleep/26.2.213>

Zhou, E. S., Mazzenga, M., Gordillo, M. L., Meltzer, L. J., & Long, K. A. (2021). Sleep

education and training among practicing clinical psychologists in the United States and

Canada. *Behavioral Sleep Medicine*, 19(6), 744–753.

<https://doi.org/10.1080/15402002.2020.1860990>

APPENDIX A

Institutional Review Board Approval Letter**Memorandum**

To: Terisa Gabrielsen

Department: BYU - EDUC - Counseling, Psychology, & Special Education

From: Sandee Aina, MPA, HRPP Associate Director

Wayne Larsen, MAcc, IRB Administrator

Date: August 05, 2022

IRB#: IRB2022-307

Title: Barrier and Facilitating Factors in Sleep Assessment and Screening Among School Psychologists.

Brigham Young University's IRB has approved the research study referenced in the subject heading as exempt level, category 2. This study does not require an annual continuing review. Each year near the anniversary of the approval date, you will receive an email reminding you of your obligations as a researcher and to check on the status of the study. You will receive this email each year until you close the study.

The study is approved as of 08/05/2022. Please reference your assigned IRB identification number in any correspondence with the IRB.

Continued approval is conditional upon your compliance with the following requirements:

1. A copy of the approved informed consent statement can be found in iRIS. No other consent statement should be used. Each research subject must be provided with a copy or a way to access the consent statement.
2. Any modifications to the approved protocol must be submitted, reviewed, and approved by the IRB before modifications are incorporated into the study.
3. All recruiting tools must be submitted and approved by the IRB prior to use.
4. Instructions to access approved documents, submit modifications, and report adverse events can be found on the IRB website, iRIS guide: <https://irb.byu.edu/iris-training-resources>
5. All non-serious unanticipated problems should be reported to the IRB within 2 weeks of the first awareness of the problem by the PI. Prompt reporting is important, as unanticipated problems often require some modification of study procedures, protocols, and/or informed consent processes. Such modifications require the review and approval of the IRB. Please refer to the [IRB website](#) for more information.

APPENDIX B**Questionnaire****Q1 What is your gender?**

- ☐ Male (1)
- ☐ Female (2)
- ☐ Non-binary / third gender (3)
- ☐ Prefer not to say (4)

Q2 What is your race and ethnicity? (Click all that apply)

- ☐ Hispanic (1)
- ☐ Non-Hispanic (2)
- ☐ Black/African American (3)
- ☐ Asian (4)
- ☐ Pacific Islander (5)
- ☐ Native American (6)
- ☐ Alaskan/Aleut (7)
- ☐ White (8)
- ☐ Other (specify) (9) _____

Page Break**Q3 Which of the following is most true about your current position of employment?**

- ☐ I work primarily in the preK-12 setting (1)
- ☐ I work primarily in the university setting (2)
- ☐ Other (specify) (3) _____

Q4 Which of the following best describes your current position:

- ☐ School psychologist (1)
- ☐ School counselor (2)
- ☐ School social worker (3)

☐ University educator (4)

☐ Other (specify) (5) _____

Q5 Please list your highest degree obtained:

☐ PhD in School Psychology (1)

☐ EdS in School Psychology (2)

☐ MS in School Psychology (3)

☐ PhD in related field (specify) (4)

☐ MS in related field (specify) (5)

☐ Other (specify) (6) _____

Q6 What year did you graduate with your highest degree?

Q7 How long have you been practicing?

☐ 0 - 5 years (1)

☐ 6 - 10 years (2)

☐ 11- 15 years (3)

☐ 16 - 20 years (4)

☐ 21 - 25 years (5)

☐ 25+ years (6)

Page Break

Q8 How often do you screen students for sleep-related issues or disorders?

☐ Never (1)

☐ Sometimes (2)

☐ Often (3)

☐ Almost Always (4)

Skip To: Q14 If How often do you screen students for sleep-related issues or disorders? = Never

Page Break

Q9 What do you use to screen students for sleep difficulties/disorders? (Select all that apply)

- ☐ BEARS sleep interview (1)
 - ☐ Children's Sleep Habits Questionnaire (CSHQ) (2)
 - ☐ Pediatric Sleep Questionnaire (PSQ) (3)
 - ☐ Sleep Disturbance Scale for Children (SDSC) (5)
 - ☐ Sleep Disorders Inventory for Students (SDIS) (6)
 - ☐ Informal methods (specify) (9)
-
- ☐ Other (specify) (4) _____

Page Break

Q10 Do you ever assess for sleep disorders when completing special education evaluations?

- ☐ Yes (1)
- ☐ No (2)
- ☐ Unsure (3)

Skip To: Q12 If Do you ever assess for sleep disorders when completing special education evaluations? != Yes

Page Break

Q11 Do you assess for sleep difficulties/disorders during most evaluations or only certain ones?

- ☐ During every evaluation (1)
- ☐ During most evaluations (2)

☐ Only during certain evaluations (3)

☐ Other (specify) (4) _____

Page Break

Q12 Have you ever treated sleep disorders in the school setting?

☐ Yes (1)

☐ No (2)

☐ Unsure (3)

Skip To: Q14 If Have you ever treated sleep disorders in the school setting? != Yes

Q13 What treatment/interventions did you use? (e.g. sleep hygiene)

Page Break

Q14 How many of your graduate courses spent at least one entire class period discussing the identification, assessment, and/or treatment of youth sleep disorders?

☐ 0 (1)

☐ 1 (2)

☐ 2 (3)

☐ 3 (4)

☐ 4 (5)

☐ 4+ (6)

☐ Unsure (7)

Page Break

Q15 What are the barriers (in your experience or opinion) to assessing, screening and/or treating youth with sleep difficulties/disorders in a school setting? (Select all that apply)

- ☐ Lack of training (1)
- ☐ Cost (2)
- ☐ Lack of awareness to sleep screening/treatment resources (3)
- ☐ Lack of support from administrators (4)
- ☐ Lack of related coursework in my graduate program (6)
- ☐ Lack of experience in interdisciplinary settings (7)
- ☐ Lack of experience in team settings (8)
- ☐ Lack of time (9)
- ☐ LEA policy or practice (10)
- ☐ Have not considered sleep as part of my practice (11)
- ☐ Other (specify) (5) _____

Page Break

Q16 How important are the following facilitating factors (in your experience or opinion) to assessing, screening and/or treating youth with sleep difficulties/disorders in a school setting? (Select all that apply)

- ☐ Training (1)
- ☐ Low cost of resources (12)
- ☐ Awareness to sleep screening/treatment resources (3)
- ☐ Support from administrators (4)
- ☐ Related coursework in my graduate program (6)
- ☐ Experience in interdisciplinary settings (7)
- ☐ Experience in team settings (8)
- ☐ Low time costs (9)
- ☐ LEA policy or practice (10)
- ☐ Not applicable to my situation (13)
- ☐ Other (specify) (5) _____