

Mini Review

New Sleep Disorders Inventory for Students – Revised and the Sleep Disorders Inventory for Adults

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Received: May 01, 2019; Accepted: May 25, 2019;

Published: June 01, 2019

Abstract

This is a mini review of the newly launched Sleep Disorders Inventory for Students – Revised (SDIS-R) and the Sleep Disorders Inventory for Adults (SDI-A). The SDIS-R and SDI-A keep with the tradition of having all the strong psychometric strengths, computerized scoring, and report writing qualities of the original Sleep Disorders Inventory for Students, but there are many improvements in the SDIS-R and SDI-A. They make universal screening of children and adults easy and more accurate than ever before.

Keywords: Sleep screening; Pediatrics; Sleep disorders; Evaluation

Introduction

Universal screening needs

Many professionals are finally understanding that sleep disorders are one of the most frequent and harmful health problems in children, adolescents and adults. Recent research indicates that sleep disturbances occur in 12-35% of young children and up to 60% of school-age children [1-3]. Some of these sleep disturbances will disappear, but many will remain and become major sleep disorders that will not disappear without identification and treatment. Many unidentified and untreated pediatric sleep disorders cause cognitive, learning, behavioral/emotional, health and safety problems (based on hundreds of research studies). As a result, many of these youth are placed in special education or given incorrect mental health diagnoses [4] and ensuing medications that could be avoided by early universal screening and correction of these sleep disorders. Presently it appears that less than 10% of all children and youth with correctable sleep disorders are being identified and treated. The success and quality of life of the non-identified children and youth is being seriously impaired as they undergo many challenges like decades of cognitive and academic struggles, many behavior problems resulting in low self-esteem or anger, numbing by medications to help regulate emotional instability, vehicular accidents, relationship problems, and in some cases, even eventual disability or incarceration (based on hundreds of studies).

About 70% of adults with Obstructive Sleep Apnea (OSA) have not yet been screened, diagnosed or treated. OSA is a very harmful sleep disorder and causes significantly higher rates of major health problems like high blood pressure, heart attacks, strokes, obesity, Type II diabetes, cancer, accidents and early deaths (based on hundreds of studies).

Given the high rates of children, adolescents and adults with major sleep disorders that often cause significant educational, behavioral/emotional, health and safety problems, it is of utmost importance that professionals working with young people and adults who are experiencing these problems first screen them for major sleep disorders before proceeding to other educational or mental health diagnoses and treatments that may not be necessary or correct

if the sleep disorder is identified and corrected.

A solution for universal sleep screening of children and adults

Many pediatric sleep specialists and other professionals are familiar with the Sleep Disorders Inventory for Students (SDIS) and have been using it for years with satisfaction. It has been one of the leading pediatric sleep inventories in the world for many reasons: (1) It has high validity and reliability coefficients in the 0.80's and 0.90's; (2) It is the only existing pediatric sleep inventory that screens for all the major sleep disorders; (3) It is the only one developed by many well-known sleep specialists and normed and validated throughout the United States at seven leading pediatric sleep clinics and hospitals, as well as having a large community sample; (4) It is the only one to use a subject population that closely reflects the 2000 and 2010 U.S. Census Demographics, which is important if it is to be used nationwide; (5) It is the only sleep screener that provides two inventories: one for children from 2 yrs. through 10.9 yrs. and one for students from 11 yrs. through 18.9 yrs., which ensures greater accuracy for both age groups; and (6) it is the only inventory worldwide that provides accurate computer scoring, a visual graph, and a comprehensive report of results that parents and professionals love.

While maintaining all the strengths of the original SDIS, a new, improved version, the SDIS-Revised, and also the new Sleep Disorders Inventory for Adults (SDI-A) was launched in April, 2019 on a new Digital Internet Platform at:

www.SleepInventory.com

The new SDIS-R and SDI-A screen for the following sleep disorders:

- Sleep-Related Breathing Disorders (a range from UARS to OSA)
- Periodic Limb Movement Disorder (PLMD)
- Delayed Sleep Phase Syndrome in teens and adults or Behavioral Insomnia of Childhood (BIC) in children
- Narcolepsy
- Excessive Daytime Sleepiness (EDS) and

- A Total Sleep Disturbance Index (SDI) (a composite of all sleep scales).

These inventories continue to provide information and interventions for five parasomnias:

- Teeth-grinding (Bruxism)
- Sleep-walking
- Sleep-talking
- Sleep or Night Terrors
- Bed-Wetting (the SDI-A does not have bed-wetting).

Improved Features of the New SDIS-R and SDI-A

The SDIS-R-Children's inventory still has the same 30 sleep-related questions and the SDIS-R-Adolescent inventory still has the same 35 questions, as does the Adult version that have proven to be so accurate; however, there are now 24 medical history questions instead of 11, which helps professionals identify possible causes of SRBD if the person scores higher than normal on this scale (previously the Obstructive Sleep Apnea Syndrome scale) (Figure 1).

The SRBD scale has been adapted to the new and milder OSA scoring criteria on PSG adopted recently by the American Academy of Sleep Medicine (AASM) to maintain its high sensitivity and predictive validity.

Because these inventories are on a new digital platform, they are very inexpensive and easier for professionals and patients to use. Professionals can choose whether they want to (a) purchase a specific amount of inventories per month to spread costs over the year, or (b) order a larger amount as inexpensive as \$0.50 per screening. Purchases are conveniently made with any credit card on the digital platform and there is no cumbersome mailing of record forms, CD Roms, or paperwork.

Professionals conveniently email their patients a screening link so a parent or adult patient can complete the sleep screening online at home in advance of an appointment.

The instant a parent or adult patient clicks "Finalize Evaluation", not only does the parent or adult patient receive the results within seconds, but the professional practice also receives the results promptly. There is no time-consuming or costly scoring on the part of the professional, an office manager, or a technician; there is no risk that the parent or adult patient loses or forgets to bring the results to their next appointment. It also enables the professional to know the screening results in advance of the appointment and have excellent hypotheses of the nature of the sleep problems. The SDIS-R and SDI-A do NOT make sleep disorder diagnoses, but merely provide good hypotheses of the nature of the child or adult patient's sleep problems or probability of a sleep disorder.

The professional can download and save the report into the patient's file, either electronically or *via* paper copy. The secured website also stores the reports privately and only the professional can access them. Professionals never have to worry if their computer is reconfigured or crashes, or there is interference with their software from the cloud or other software programs on their computer.

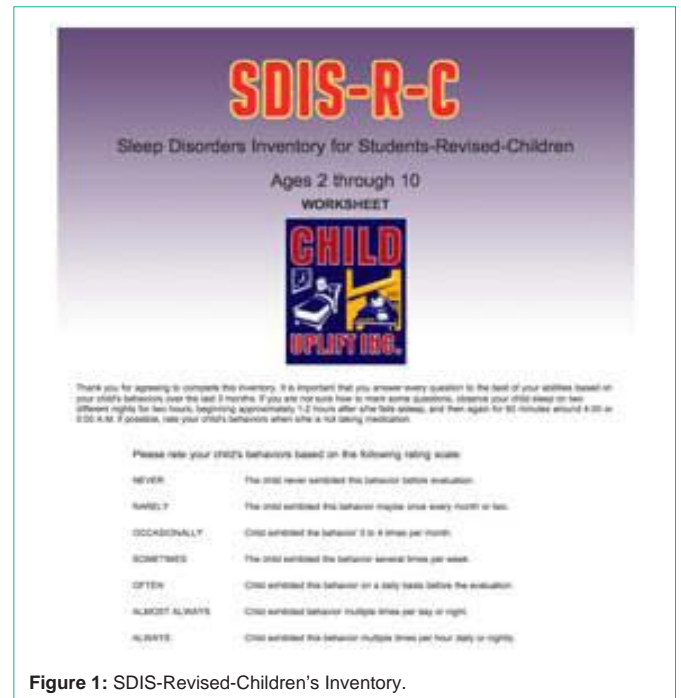


Figure 1: SDIS-Revised-Children's Inventory.

Professionals can monitor patients' sleep issues over time. If a patient is screened and treatment is conducted for a sleep disorder, a follow-up inventory can be sent to the patient several weeks or months later to see if treatment was effective. A comparison bar graph can be accessed comparing the patient's multiple screenings to see if the treatment was successful, which can also be an excellent research tool while monitoring patients' treatment efficacy. When measuring treatment satisfaction, about 30% of parents reported that they were dissatisfied because there was no follow-up by professionals' post-treatment and sleep problems still existed [4].

Professionals can also obtain statistics about their practice regarding the percentage of their patients scoring within the 'caution' or 'high risk' range on the SDIS-R or SDI-A of having a specific sleep disorder (in case they need data for hospital statistics, research or insurance companies).

Professionals can now screen adults with the new SDI-A (19+ years). The three inventories ensure screening continuity from 2 years through 10.9 yrs. (SDIS-R-Children's form), 11 yrs. through 18.9 yrs. (SDIS-R-Adolescent form) and 19 yrs. through adulthood (SDI-A).

In an interview of leading sleep specialist and OSA expert, Dr. David Gozal, he reported that only about 20-30% of children and adolescents being referred for an overnight sleep study to diagnose Obstructive Sleep Apnea (OSA) were actually found to have OSA based on Polysomnography (PSG) [5]. This is a fairly poor accuracy rate, especially considering that these children's parents had been asked many questions about their child's breathing and sleep behaviors, and the child had likely been given an oral-facial-airway exam by a sleep specialist before being referred for PSG. Both the original SDIS and now the SDIS-Revised-Children's form and the SDIS-Revised-Adolescent form can ensure a higher accuracy rate of at least 55% by parents who are unreliable raters of their children's behaviors, and up to an 80-90% hit rate by reliable parents who know

their children's daytime and sleep behaviors well.

All three inventories have rater reliability questions that can inform the professional of the dependability of the rater's scoring (kind of similar to lie scale questions).

Conclusion

Overall, the new SDIS-R-C and SDIS-R-A are equally accurate as the original SDIS and more economical, convenient, versatile, and maintenance free. For testimonials, psychometric, research and development information, go to www.SleepInventory.com and view the information under Product Information.

If there is interest to do some trials of the SDIS-R-Children's form, SDIS-R-Adolescent form, or SDI-Adult form, professionals can go to the website, register their practice free, to get 10 free trials using the website: www.sleepinventory.com, promo code: 10-SDIS-R. This offer is valid through 09/30/2019.

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