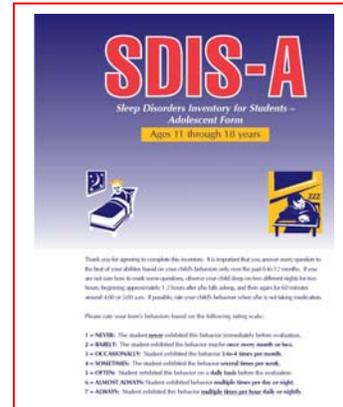# Summary of the SDIS Development & Psychometric Qualities

This was a national study undertaken over a four year time period at some of the most highly respected sleep clinics in the USA and some of the Tampa Bay, FL schools (see Co-Developers) to validate the Sleep Disorders Inventory for Students (SDIS). Both the SDIS-Children's Form (SDIS-C) and SDIS-Adolescent Form (SDIS-A) are designed for use by parents, school and clinical psychologists, school nurses, psychiatrists, pediatricians, and sleep specialists to help screen and refer students for five major sleep disorders and five parasomnias that tend to worry parents. These five major sleep disorders are Obstructive Sleep Apnea Syndrome (OSAS), Periodic Limb Movement Disorder (PLMD), Restless Legs Syndrome (RLS), Delayed Sleep Phase Syndrome (DSPS), and Narcolepsy. The five parasomnias are Bruxism (teeth grinding), Somnabulism (sleep-walking), Somniloquy (sleep-talking), Night Terrors, and Noctural Enuresis (bed-wetting). This sleep inventory also measures Excessive Daytime Sleepiness and provides a Total Sleep Disturbance Index. It provides bar graphs with standard scores (T-scores) for each of the major sleep disorder categories and T-scores and Percentile Ranks for the Total Sleep Disturbance Index. Finally, it provides an Interpretive Report of the graph results that explains the graph and suggests interventions that parents might pursue, including the suggestion to consider obtaining a comprehensive sleep evaluation when one or more of the major sleep scales are within the "High Risk" range.

Content Validation

Prior to conducting the pilot and main studies, an Expert Test Review Panel (ETRP) of nine experts rated the SDIS's fifty-three items for content validity. This ETRP was composed of six nationally-known sleep specialists, one measurement professor specialized in the construction of survey instruments, and two school psychologists specialized in assessment using screening and test instruments. Four ethnic groups were represented on this panel: 6 Caucasians, 1 African-American, 1 Hispanic-American, and 1 Asian-American. Therefore, the SDIS items were also evaluated for language and cultural bias. Any questionable items were either re-written or omitted. Fifteen items were omitted due to

cultural bias or because they were a poor measure of the sleep disorders being screened. The ETRP obtained 94% agreement (content validity) on the 38 retained SDIS items. The reading level of the 38 items range from a third-to-sixth grade level, but the majority of items are on a 3.0-to-5.0 grade level (Please see the Information on the "Co-Developers of the SDIS" for exact names and credentials of the Expert Test Review Panel).

Pilot Study

A Pilot Study was first conducted to explore the construction of the inventory, the possible sleep disorders it is measuring, and eliminate poor items. This Pilot Study consisted of data collected on 226 students from the Pasco County, FL School District, two psychology private practices in the Tampa Bay, FL area, All Children's Hospital Sleep Clinic, and Tampa General Hospital Sleep Clinic in Tampa Bay, Fl.

Construct Validation → Exploratory Factor Analysis (EFA)

Exploratory Factor Analysis was conducted on the Pilot Study data (n=226) to explore the inventory construction and existing factors. A five factor structure appeared to be a good model fit for the SDIS when all age groups were combined in the analysis.   There was a clear delineation of four factors: Obstructive Sleep Apnea Syndrome (OSAS), Periodic Limb Movement Disorder (PLMD), Delayed Sleep Phase Syndrome (DSPS), and Excessive Daytime Sleepiness (EDS). Two sleep disorders, Narcolepsy (NARC) and Restless Legs Syndrome (RLS), were not clearly defined due to a smaller than desirable sample size of students available for these two sleep disorders in the pilot sample. Therefore, the Exploratory Factor Analysis combined them into one factor, which was similar to a miscellaneous category. To correct for this unusual combination of Narcolepsy and RLS and obtain a clear separation of these two factors, larger groups of NARC and RLS-diagnosed children participated in the Main Study.

Main Study

The Main Study had 595 students participating from the Pasco County and Tampa Bay, FL School Districts, Carle Regional Sleep Disorders Clinic in IL, Johns Hopkins Sleep Disorders Centers in MD, Miami Children's Hospital Sleep Clinic in FL, Stanford Sleep Disorders Clinic in CA, and University Community Hospital Pediatric Sleep Clinic in Tampa, FL. Since qualitative data in the Pilot Study suggested that parents of younger children were answering the inventory differently than parents of older students, it was decided to conduct further Exploratory Factor Analysis (EFA) on the younger children (ages 2-through 10 years) to determine if the same amount of factors appear for the younger children as for all ages combined.

Summary of SDIS Development & Psychometric Qualities

Construct Validity → Exploratory Factor Analysis

On the second Exploratory Factor Analysis (EFA) conducted only on younger children from 2-through-10 years, it suggested only four clear factors for the younger children: OSAS, PLMD, DSPS, and EDS. Although some of these younger children had a diagnosis of Narcolepsy or Restless Legs Syndrome (RLS), the Narcolepsy students were primarily indicating problems with excessive daytime sleepiness (EDS) at this young age, which was measured by the EDS scale. Although some young children have RLS, their parents were not very good at noticing the symptoms of RLS, and therefore these parents did not rate RLS symptoms significantly on the SDIS for young children. However, these children often experience co-morbid Periodic Limb Movement's (PLM's), which parents were better able to describe or rate on an inventory. Therefore, neither the Narcolepsy or RLS sleep domains materialized for the younger group of children.

It was also noted that older students above 10 years of age often had more severe symptoms of a sleep disorder than younger children, which made it necessary to develop and validate the SDIS for two age groups of children: (a) The SDIS-Children's Form (SDIS-C), which measures sleep problems of children 2-through-10 years of age, and (b) the SDIS-Adolescent Form (SDIS-A), which assesses sleep problems of students 11-through-18 years of age. If only one sleep inventory is used for all ages, then professionals will under-identify the young children and over-identify the older students. Therefore, separate scoring criteria and sometimes different items had to be developed for each age group.

Construct Validity→ Confirmatory Factor Analyses (CFA)

Results of confirmatory factor analyses (CFA) indicated a good Model Fit or excellent construct validity for both the SDIS-Children's and SDIS-Adolescent Forms. The four factor model suggested for the Children's Form by EFA was confirmed by CFA. These four factors were Obstructive Sleep Apnea Syndrome (OSAS), Excessive Daytime Sleepiness (EDS), Periodic Limb Movement Disorder (PLMD), and Delayed Sleep Phase Syndrome (DSPS). Narcolepsy was not confirmed for the Children's Form, although the EDS scale was a good screener of Narcolepsy in children under 11 years of age. Even though some children under 11 years of age had a diagnosis of Narcolepsy, they were not exhibiting many of the characteristics of Narcolepsy except significant EDS.

A five factor structure was confirmed by CFA on the SDIS-Adolescent Form. These five factors were OSAS, PLMD/RLS, DSPS, EDS, and Narcolepsy. Since there were not enough distinct characteristics or items for Restless Legs Syndrome (RLS) to stand alone as an independent sleep disorder category, the computer analysis combined RLS with PLMD since the two disorders are co-morbid in a high percentage of children. Both SDIS Forms provide a Total Sleep Disturbance Index to help the parent and professional determine the severity of the child's overall composite of sleep problems. Table 1 displays the CFA Model Fit Indices for the SDIS-C and SDIS-A.

Summary of SDIS Development & Psychometric Qualities

Table 1

Goodness of Fit Indices for the SDIS-Children's Form and SDIS-Adolescent

Forms

FIT INDICES ESTIMATES	SDIS-C	SDIS-A
X^2 (Chi Square)	366.82	517.98
df (degrees of freedom)	250.00	352.00
X^2 / df (for a good model fit: score < 2.0)	1.467	1.47
Root Mean Square Error of Approximation (**RMSEA**) (a good RMSEA fit is: < .06)	0.0503	0.05
Bentler's Comparative Fit Index (**CFI**) (good CFI fit: > .90)	0.9551	0.9512
Bentler and Bonett's Non-Normed Fit Index (**NNFI**) (good NNFI fit: > .90)	0.9461	0.9397

Summary of SDIS Development & Psychometric Qualities

Table 2 displays the SDIS-C items remaining after deletion of 13 items with poor validity coefficients. The last five items (26-30) were added based on parent demands. Table 2 also displays the sleep disorders or sleep categories that each item measures based on Confirmatory Factor Analysis:

Table 2

Items Retained on the SDIS-Children's Form and the Factors Measured

Item	Factor/s Measured
1. Stops breathing for 5 + seconds in sleep.	OSAS
2. Breathes through the mouth while awake.	OSAS
3. Breathes through the mouth while asleep.	OSAS
4. Appears sleepy more often in daytime than other children...	EDS
5. Makes repeated leg or arm jerking movements during sleep.	PLMD / OSAS
6. Child has raspy breathing or snores lightly at night.	OSAS
7. Snores <u>loudly</u> at night.	OSAS
8. Confusion upon awakening ...	PLMD / NARC / OSAS
9. Child rolls or moves around the bed when sleeping.	PLMD / OSAS
10. Gasps, snorts, or chokes for breath during sleep.	OSAS
11. Sweats a lot while asleep.	OSAS / PLMD
12. Is irritable.	EDS / PLMD
13. Tired between 8:00 and 12:00 a.m., but alert in p.m.	EDS
14. Sleeps in strange positions such as cocking the head backwards, etc.	OSAS
15. Exhibits heavy breathing without exercising.	OSAS
16. Wakes up during the night.	PLMD / EDS
17. Seems tired after getting plenty of sleep.	PLMD / EDS
18. Takes more than 30 minutes to fall asleep ...	DSPS / PLMD
19. Can't shift sleep time earlier.	DSPS
20. Falls asleep more during the daytime than other children	EDS
21. Has a high activity level and has difficulty sitting still.	PLMD
22. Student is often touchy or loses temper.	PLMD
23. Actively defies or refuses to comply with adults' requests.	PLMD
24. Difficulty falling asleep on **school nights**.	DSPS
25. Difficulty falling asleep on **weekends**.	DSPS
26. Grinds teeth while sleeping.	Bruxism
27. Sleep-walks.	Somnambulism
28. Sleep-talking.	Somniloquy
29. Does student awaken wild-eyed, screaming or crying, . . . ?	Night Terrors
30. Does teen have bed-wetting episodes?	Noctural Enuresis

* OSAS = Obstructive Sleep Apnea Syndrome; N = Narcolepsy; PLMD = Periodic Limb Movement Disorder; DSPS = Delayed Sleep Phase Syndrome; and EDS = Excessive Daytime Sleepiness. The factor listed first has the greatest loading or influence on that item.

Confirmatory Factor Analysis revealed that some characteristics previously attributed to only one sleep disorder really characterize more than one sleep disorder (i.e., "Confusion upon awakening").

Summary of SDIS Development & Psychometric Qualities

Table 3 displays the SDIS-Adolescent Form items remaining after eight items with poor validity coefficients were removed and five items were added (31-35) due to frequent requests by parents.

Table 3

Items Retained on the SDIS – Adolescent Form and the Factors Measured

Items	Factor/s Measured
1. Stops breathing for 5 + seconds in sleep.	OSAS
2. Breaths through the mouth while asleep	OSAS
3. Appears sleepy more often in daytime than other children...	EDS / NARC / OSAS
4. When student is awakened ..., has difficulty getting up and starting...	EDS / DSPS
5. Unable to talk or move for seconds to minutes when awakened	EDS
6. Makes repeated leg or arm jerking movements during sleep.	PLMD / NARC
7. Child has raspy breathing or snores lightly at night.	OSAS
8. Snores loudly at night.	OSAS
9. Confusion upon awakening ...	OSAS/EDS/PLMD
10. Stays up past 1:00 a.m. on school nights ...	DSPS / NARC
11. Gasps, snorts, or chokes for breath during sleep.	OSAS
12. Is irritable	EDS
13. Reports an urge to move legs or uncomfortable, crawing feeling in legs...	RLS / PLMD
14. Tired between 8:00 and 12:00 a.m., but alert in p.m. . . .	EDS/NARC/DSPS
15. Sleeps in strange positions such as cocking the head backwards, etc.	OSAS / NARC
16. Has attacks of extreme muscular weakness that occur when emotional.	NARC / PLMD
17. Wakes up during the night.	PLMD / NARC
18. Seems tired after getting plenty of sleep.	EDS / NARC
19. Student complains of vivid, often frightening dreams . . .	PLMD / NARC
20. Skips or is late for early classes due to difficulty waking up.	DSPS/NARC/EDS
21. Takes more than 30 minutes to fall asleep . . .	DSPS / PLMD
22. Falls asleep while talking to others or standing up.	NARC
23. Can't shift sleep time earlier.	DSPS
24. Performs some strange automatic behaviors . . .	PLMD / NARC
25. Falls asleep more during the daytime than other students . . .	NARC / EDS
26. Student is often touchy or loses temper.	EDS / PLMD
27. Actively defies or refuses to comply with adults' requests.	EDS
28. Has difficulty falling asleep on school nights before . . .	DSPS
29. Has difficulty falling asleep on weekend nights before . . .	DSPS
30. Student takes daytime naps.	NARC
31. Grinds teeth while sleeping.	Bruxism
32. Sleep-walks.	Somnambulism
33. Sleep-talking.	Somniloquy
34. Does student awaken wild-eyed, screaming or crying, . . . ?	Night Terrors
35. Does teen have bed-wetting episodes?	Noctural Enuresis

* OSAS = Obstructive Sleep Apnea Syndrome; PLMD = Periodic Limb Movement Disorder; EDS = Excessive Daytime Sleepiness; NARC = Narcolepsy; PLMD = Periodic Limb Movement Disorder; RLS = Restless Legs Syndrome

Summary of SDIS Development & Psychometric Qualities

These last five items measuring parasomnias seemed to be of great concern to parents during the Pilot and Main Research Studies. Parents wanted to know more information about teeth grinding, sleep-walking, sleep-talking, night terrors, and bed-wetting, even if these problems are usually fairly benign and often out-grown. Some of these parasomnias should have disappeared by the time the student reaches adolescence, especially night terrors and noctural enuresis, and therefore, they become a greater concern for parents completing the SDIS-Adolescent Form. Therefore, these items were added post-CFA, and if a student has a mild, moderate, or severe score on any of these five items, information about the parasomnia and recommendations are provided in the Interpretive Report to assist parents and the student. The developers have attempted to create an accurate, but also parent and professional friendly sleep screening inventory that will meet everyone's needs.

Criterion-Related Validity→Predictive Validity of the SDIS-C

The SDIS-Children's Form had a predictive validity (hit rate) of 86% using discriminate function analysis (DFA) with a Jackknife process to predict which children were referred to sleep specialists for a comprehensive sleep evaluation (it accurately predicted 95-out-of-111 hospital referred students). There were a few miscellaneous diagnoses referred for sleep studies such as nocturnal seizure disorder or fragmented sleep disorder that the SDIS-C was not designed to identify, which lowered the overall predictive validity. These miscellaneous disorders were included in the 86% overall hit rate. When considering only the sleep disorders that the SDIS was designed to screen (OSAS, EDS -> Narcolepsy, PLMD, and DSPS), the overall hit rate was 70-out-of-75 of these cases that the SDIS-C would have referred for a sleep study, which is a high 93% hit rate.

The second measure of predictive validity was the accuracy of the SDIS-C in predicting the exact sleep diagnoses the children in the hospital sample had been given when examined by a sleep specialist, or tested with Polysomnograpy (PSG) or a Multiple Sleep Latency Test (MSLT). Using DFA and a Jackknife process, each hospital child's sleep disorder was predicted by the SDIS-C, based on the means generated for each sleep disorder. The SDIS-C predicted 3-out-of-3 cases of DSPS for a 100% hit rate, 4-out-of-5 cases of Narcolepsy (using the EDS scale) for 80% accuracy, 35-out-of-57 cases of OSAS for 61%, and 3-out-of-10 cases of PLMD for 30%. The OSAS hit rate was only moderately accurate and the PLMD hit rate was poor, so adjustments were made and cut-off levels were slightly lowered for these two scales to improve screening accuracy.

The same analyses were conducted using the new cut-off criteria for OSAS and PLMD on a randomly selected sample of 50 hospital cases from Johns Hopkins, Carle Regional, and Miami Children's Hospital. This time the SDIS-C had to predict "no OSAS" or "yes OSAS" and "no PLMD" or "yes PLMD". This would show whether the SDIS-C could accurately predict both children with the sleep disorder and those without. The SDIS-C accurately predicted 36-out-of-50 cases of OSAS for a 72% hit rate. It accurately predicted 27-out-of-35 children with PLMD for a 77% hit rate. This was a significant improvement for both

scales, especially the PLMD scale. The errors on both scales resulted from 20% false positives occurring (incorrect prediction of OSAS or PLMD when the child did not have OSAS or PLMD) to 8% false negatives (incorrect prediction that the child did not have OSAS or PLMD when the child did have the sleep disorder). Even though the OSAS and PLMD scales' cut-off levels could be raised again to decrease the amount of false positives, this would not be a wise change medically because it could increase the false negatives to 15-20%. This could be very harmful to children since OSAS and PLMD are medical disorders that can have serious consequences to a child's health and functioning. In such cases, it is better to error on the false positive side and refer 10-20% too many children to sleep specialists, but identify and correct most harmful sleep disorders. Furthermore, the children with the false positives often had another sleep disorders diagnosed in 69% of these situations, which inflated the OSAS or PLMD scales; therefore, the child needed to be referred for a sleep study because

s/he had some type of sleep disorder in 69% of these false positive cases. It is good that the SDIS-C would have referred these children for a sleep study even though it did not predict the exact sleep disorder in some of these cases.

Additionally, these new modifications in cut-off scores enabled the SDIS-C to detect most of the children with primary snoring who may not need a comprehensive sleep evaluation. Six of the 50 cases had only Primary Snoring, but were referred to sleep clinics due to suspicions of OSAS. The Primary Snoring children were rated high by parents on the two snoring questions, but most of the other OSAS questions were rated low on the SDIS-C compared to much higher scores for the children with OSAS. The SDIS-C would have referred only 2-of-the-6 for a 33% error rate compared to a 100% error rate by the physicians. Table 4 displays the Hit Rates (predictive validity) for the SDIS-C.

Table 4

Predictive Validity Hit Rate for the SDIS-Children's For (Ages 2-through-10 yrs.)
_____

Sleep Diagnosis	Needs Referral	Hit Rate	Specific Diagnosis	Hit Rate
SDIS-C:	70-out-of-75	93%		
DSPS:	3-out-of-3	100%	3-out-of-3	100%
NARC:	5-out-of-5	100%	4-out-of-5	80%
OSAS:	55-out-of-57	96%	35-out-of-57	61%
PLMD:	7-out-of-10	70%	3-out-of-10	30%

Newly Adjusted Cut-Off Criteria Now Being Used

OSAS (n = 50)			35-out-of-50	72%
PLMD (n = 35)			27-out-of-35	77%

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Summary of SDIS Development & Psychometric Qualities

Criterion-Related Validity → Predictive Validity of the SDIS-A

Discriminate Function Analysis (DFA) with a Jackknife process was conducted on 182 participants in the adolescent group (SDIS-A). Of these 182 adolescents, 50 of them were diagnosed by a sleep specialist with a sleep disorder or some type of sleep concern. The SDIS-A identified 50-out-of-52 students who were referred for a sleep study for a 96% hit rate (regardless of their diagnoses). When considering only OSAS, Narcolepsy, PLMD, RLS, and DSPS, for which the SDIS-A was designed to screen, the overall hit rate was 48-out-of-50 of these disorders, for an equally high 96% hit rate.

The SDIS-A predicted 24-out-of-24 cases of OSAS for a 100% hit rate, 4-out-of-4 possible Narcolepsy cases for a 100% hit rate, 4-out-of-4 cases of DSPS

for a 100% hit rate, and 7-out-of-9 cases of PLMD for a 78% hit rate. There were 2 adolescents with miscellaneous sleep disorders (i.e., Fragmented Sleep Disorder and Nocturnal Seizures) that the SDIS-A was not designed to identify, but it targeted these students with significant sleep problems and would have recommended both for a comprehensive sleep study based on the escalated scores of it's scales. Table 5 displays the Hit Rates (predictive validity) for the SDIS-A.

Table 5

Predictive Validity Hit Rate for the SDIS-Adolescent Form (Ages 11-through-18 yrs)

Sleep Diagnosis	Needs Referral	Hit Rate	Specific Diagnosis	Hit Rate
SDIS-A:	50-out-of-52	96%		
DSPS:	4-out-of-4	100%	4-out-of-4	100%
NARC:	4-out-of-4	100%	4-out-of-4	100%
OSAS:	24-out-of-24	100%	24-out-of-24	100%
PLMD:	7-out-of-9	78%	7-out-of-9	78%

The SDIS-A was more accurate than the SDIS-C due to the fact that it is easier to identify sleep disorders as the student becomes older. Most sleep disorders become more severe with age and the symptoms are more obvious. However, both the SDIS-C and SDIS-A demonstrated excellent predictive validity for a screening instrument, especially when identifying which students need a referral for a comprehensive sleep evaluation, which is really the most important form of validity for medical purposes.

Summary of SDIS Development & Psychometric Qualities

Criterion-Related Validity: Concurrent Validity

In order to measure concurrent validity, the SDIS: OSAS scale was compared with the Polysomnography (PSG) Respiratory Distress Index (RDI), which resulted in correlations of .33 (p< .0005) for the Children's Form and .57 (p<.0001) for the Adolescent Form. Although these correlations are highly significant, the correlations would have been higher if the PSG RDI Index was not so unusual. Because the RDI Index has a possible scoring range from 0-to-75+ apnea/hypopnea events per hour, but OSAS in children is already diagnosed with an RDI of 1.5-to-2.0 events per hour, there was almost no range of scores possible for a child without OSAS (0-to-2.0 points), but an enormous range from 2.0 up to as high as 75+ points in cases diagnosed with OSAS. It was noted that children who had mild OSAS with a score at the lower end (i.e., like 2.0) were already exhibiting many significant daytime and nighttime characteristics of sleep apnea, and so their parents rated them fairly high on the SDIS-C or SDIS-A with item scores from 4-7 points. Although the children with severe apnea usually exhibited more daytime and nighttime problems, their parents could not rate them higher than item scores of 7 on the SDIS, which lowered the correlations if the child had a high RDI index greater than 15 points. The positive result is that the SDIS has enough sensitivity to identify most of the students who only have mild apnea with RDI scores of 1.6-to-2.0. The same measurement problems occurred on the other PSG and MSLT instruments when assessing concurrent validity. In these cases, it is more important to regard the level of significance (p<.0005 or p<.0001) than the correlation coefficient (.33 or .57).

The SDIS-Children's Form had a single item measuring snoring severity that had a correlation of .43 (p<.0001) with the hospital Polysomnograpy Snore Index. The SDIS-Adolescent Form's snoring item had a correlation of .64 (p<.0001) with the PSG Snore Index. Snoring usually became more frequent and louder with age in cases of OSAS.

The SDIS: PLMD scale was compared to the Periodic Limb Movement (PLM) Index on the Polysomnography (PSG), but was not statistically significant because sleep tech's did not count the amount of PLM's if they were caused by OSAS apnea events. Therefore, correlational analysis was not possible here if sleep techs did not count all leg movements being made by the child. The parents could not distinguish between limb movements caused by OSAS or PLMD. However, the SDIS may measure limb movement fairly accurately, even if it cannot determine the sleep disorder causing the limb movements. In the cases where the parent is indicating frequent limb movements, it would be wise for sleep specialists to rule out both OSAS and PLMD.

The SDIS-Children's Form: EDS scale had a correlation of .85 (p<.01) when compared to the MSLT Average Sleep Latency Index, and .32 (p=.4353) on the Adolescent Form (not significant, possibly due to small sample size). There were only five SDIS-C cases with a diagnosis of narcolepsy and four SDIS-A cases, making correlations with such a small sample size inaccurate. Since the sample

size of these sleep disorders was too small to conduct accurate correlational studies, Content, Construct, and Predictive Validity results are the most reliable and accurate results. In all of these forms of validity, the SDIS-C and SDIS-A had high validity coefficients.

Reliability → Internal Consistency

High internal consistency was measured for the overall SDIS – Children's and Adolescent Forms (.91 and .92 respectively). Internal consistency for subscales ranged from .71 to .92, which is acceptable-to-excellent. See Table 6.

Table 6

Cronbach's Alpha Internal Consistency Coefficients for the SDIS- C and SDIS-A
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SDIS Forms	Total SDIS Reliability Coefficient	SDIS Item Alpha Coefficients within Subscales				
		OSAS	NARC	PLMD	DSPS	EDS
Children's Form	.91	.90	N/A	.85	.76	.84
Adolescent Form	.92	.88	.92	.83	.71	.83

* OSAS = Obstructive Sleep Apnea Syndrome; NARC = Narcolepsy; PLMD = Periodic Limb Movement Disorder;
   DSPS = Delayed Sleep Phase Syndrome; EDS = Excessive Daytime Sleepiness

Reliability → Test-Retest Reliability

Test-retest reliability resulted in high reliability coefficients of .97 for the SDIS-Children's Form and .86 for the SDIS-Adolescent Form. This is very high considering that most test-retest measures are completed only two or three weeks after the first testing, but the SDIS retesting could not be completed for several months, which lowers reliability. This suggests that the SDIS is a very reliable instrument, possibly due to the facts that sleep problems are very stable across time and the SDIS 7-point rating scale is clearly defined for parents and exact.

Summary

A four factor (scale) structure was confirmed for the SDIS-Children's Form and a five factor structure was confirmed for the SDIS-Adolescent Form. Both SDIS-C and SDIS-A Forms also measure five parasomnias and yield a Total Sleep Disturbance Index. The SDIS-Children's and Adolescent Forms demonstrated high content, construct, and predictive validity. They also exhibited very high internal consistency and test-retest reliability for a screening instrument. They can be administered in English or Spanish in 8-to-15 minutes to parents and computer scored in 3-5 minutes by professionals or an office secretary.

The Sleep Disorders Inventory for Students (SDIS) is available for use by school nurses, school and clinical psychologists, psychiatrists, counselors,

pediatricians, sleep specialists, and other professionals working with children or teens. Parents can also screen their child/teen at this website.

If you are a Professional and interested in purchasing the Professional SDIS Start-Up Kit, click here.

Parents can also screen their child now and get immediate results by clicking here.