

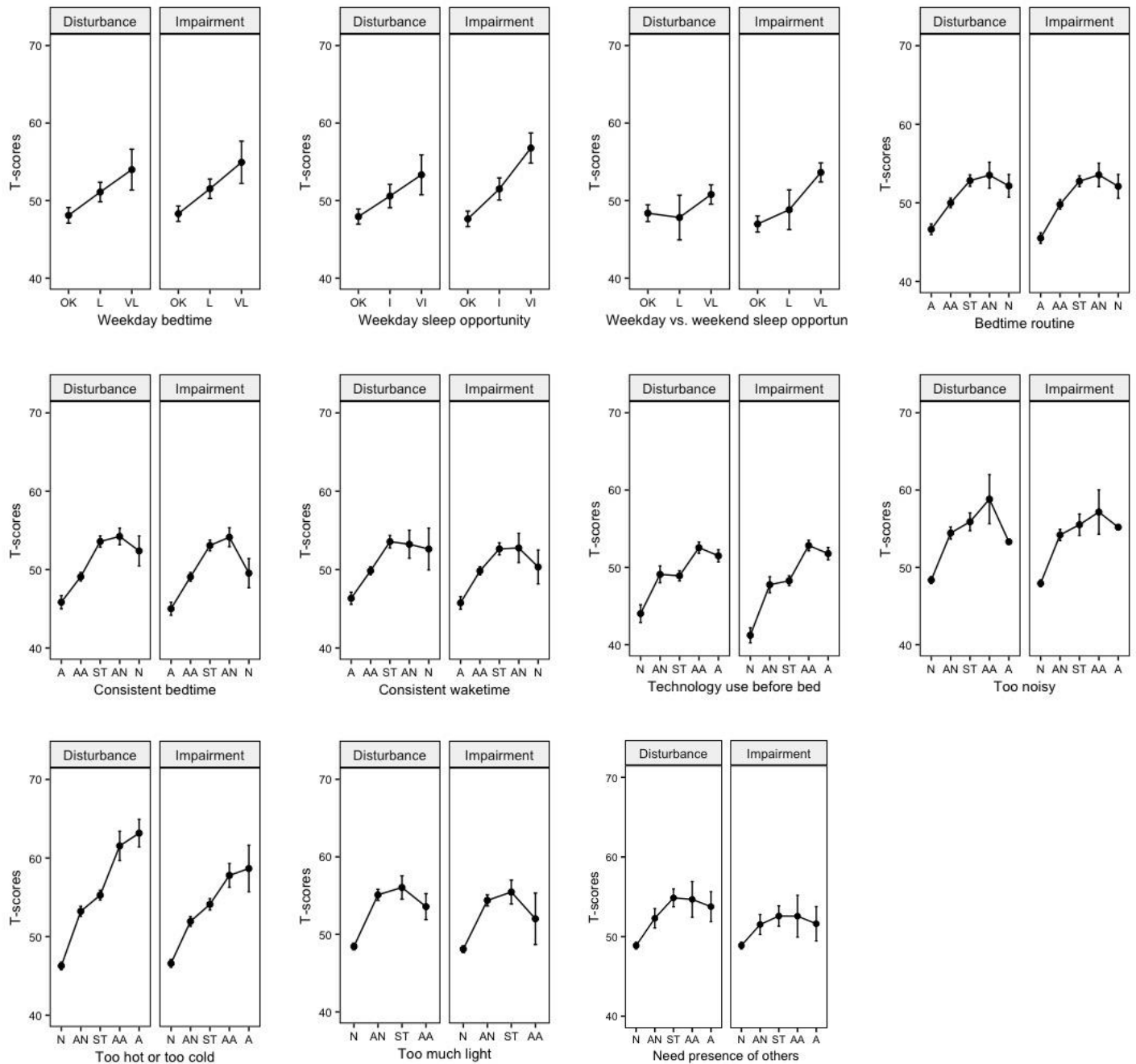
Table S1. Pediatric Sleep Practices Item History

Variable ID	Facet	Original version	Decision and rationale	Final version
sp001c	Timing	What time do you go to bed on school nights?	Removed: children reported getting into bed without intent to fall asleep (e.g., read, watch TV, etc.)	
sp002c	Timing	What time do you try to fall asleep on school nights?	Revised: replaced "school nights" with "weekday nights" to include nights children are not in school	What time do you go to bed on weekday nights?
sp003c	Timing	What time do you wake up on school days?	Revised: replaced "school days" with "weekdays" to include days children are not in school	What time do you wake up on weekdays?
sp004c	Timing	What time do you go to bed on weekends or holidays?	Revised: removed "holidays" and changed "go to bed" to "try to fall asleep" because children reported getting into bed without intent to fall asleep	What time do you try to fall asleep on weekends?
sp005c	Timing	What time do you wake up on weekends or holidays?	Revised: removed "holidays"	What time do you wake up on weekends?
sp006c	Timing	I went to bed at about the same time every night.	Retained	I went to bed at about the same time every night
sp007c	Timing	I woke up at about the same time every morning	Retained	I woke up at about the same time every morning
sp008c	Room Environment	I fell asleep with a TV show or video on	Removed: encompassed by sp025c (I watched TV shows or videos just before going to sleep)	
sp009c	Room Environment	I fell asleep with music on	Removed: interpreted as both loud music played by others in the home and soft music played by child to facilitate relaxation	
sp010c	Room Environment	I fell asleep with a bright light on.	Revised: interpretation of "bright light" varied; some children described dim nightlight. Item revised to convey that exposure to light interfered with sleep quality.	I had problems sleeping because there was too much light in my room
sp011c	Room Environment	I fell asleep in a dark room	Removed: intended concept better measured by retained item sp010c (I had problems sleeping because there was too much light in my room)	

sp012c	Room Environment	I fell asleep in a quiet room.	Revised: Item revised to convey that noise interfered with sleep quality.	I had problems sleeping because my room was too noisy
sp013c	Room Environment	I fell asleep in a hot room	Revised: Item revised to convey that temperature interfered with sleep quality	I had problems sleeping because my room was too hot
sp014c	Room Environment	I fell asleep in a cool room	Revised: Item revised to convey that temperature interfered with sleep quality	I had problems sleeping because my room was too cold
sp015c	Diet/Caffeine	I drank beverages with caffeine at dinner or later	Removed: not well understood that caffeine could include soda, coffee, tea, etc.	
sp016c	Diet/Caffeine	I went to bed feeling hungry	Removed: children reported that this only occurred if parents' did not allow them to have a snack before bedtime	
sp017c	Diet/Caffeine	I had a snack before bed	Removed: children did not identify this as related to their sleep	
sp018c	Parental Presence	I fell asleep by myself	Revised: Item revised to convey need for presence of someone else in order to fall asleep	I needed someone with me to fall asleep
sp019c	Parental Presence	I slept with someone else	Removed: interpreted as sharing room with a sibling or other family member instead of negative sleep onset association	
sp020c	Parental Presence	I slept in the same place every night	Removed: failed to capture concept of falling asleep in one location and waking up in another	
sp021c	Parental Presence	I went to sleep and woke up in different places	Removed: children interpreted as changing positions, falling asleep in the car, or sleepwalking	
sp022c	Parental Presence	I needed someone else with me to sleep	Removed: redundant with sp018c (I needed someone with me to fall asleep)	
sp023c	Technology	I texted just before going to sleep	Removed: redundant with sp024c (I used a computer, tablet, or smartphone just before going to sleep)	
sp024c	Technology	I used a computer, tablet, or smartphone just before going to sleep	Retained	I used a computer, tablet, or smartphone just before going to sleep

sp025c	Technology	I watched TV or videos just before going to sleep	Retained	I watched TV or videos just before going to sleep
sp026c	Technology	I played video or computer games just before going to sleep	Retained	I played video or computer games just before going to sleep
sp027c	Technology	I used a computer, tablet, or smartphone in the middle of the night.	Removed: variable interpretations, including both use of device after nighttime waking and staying up late to use the device	
sp028c	Routine/Consistency	I followed a bedtime routine before falling asleep	Retained	I followed a bedtime routine before falling asleep
sp029c	Routine/Consistency	I did the same things every night to get ready for bed.	Removed: item redundant with sp028c (I followed a bedtime routine before falling asleep)	
sp030c	Routine/Consistency	My parent told me what time to go to bed.	Removed: failed to adequately capture concept of bedtime routine/consistency	
sp031c	Routine/Consistency	I took a bath or shower in the hour before bed	Removed: failed to adequately capture concept of bedtime routine	
sp032c	Routine/Consistency	I read in the hour before bed	Removed: failed to adequately capture concept of bedtime routine	

Figure S1. Sleep Disturbance and Sleep Related Impairment T-scores by Sleep Practice item responses



Notes: L = Late, VL = Very Late, I = Insufficient; VI = Very Insufficient, N = Never, AN = Almost Never, ST = Sometimes, AA = Almost Always, A = Always

**ONLINE SUPPLEMENT APPENDIX A
SLEEP PRACTICE SCORING INSTRUCTIONS**

Step 1: Item recodes

Recode each variable as indicated in the “Recoded response categories” column below:

Variable ID	Item	Original response categories	Recoded response categories
sp002c (weekday bedtime)	What time do you try to fall asleep on weekday nights?	1. Before 7:00PM 2. 7:00PM-7:29PM 3. 7:30PM-7:59PM 4. 8:00PM-8:29PM 5. 8:30PM-8:59PM 6. 9:00PM-9:29PM 7. 9:30PM-9:59PM 8. 10:00PM-10:29PM 9. 10:30PM-10:59PM 10. 11:00PM-11:29PM 11. 11:30PM-11:59PM 12. After midnight	1. Before 7:00PM → 18.5 2. 7:00PM-7:29PM → 19 3. 7:30PM-7:59PM → 19.5 4. 8:00PM-8:29PM → 20 5. 8:30PM-8:59PM → 20.5 6. 9:00PM-9:29PM → 21 7. 9:30PM-9:59PM → 21.5 8. 10:00PM-10:29PM → 22 9. 10:30PM-10:59PM → 22.5 10. 11:00PM-11:29PM → 23 11. 11:30PM-11:59PM → 23.5 12. After midnight → 24
sp003c (weekday waketime)	What time do you wake up on weekdays?	1. Before 5:00AM 2. 5:00AM-5:29AM 3. 5:30AM-5:59AM 4. 6:00AM-6:29AM 5. 6:30AM-6:59AM 6. 7:00AM-7:29AM 7. 7:30AM-7:59AM 8. 8:00AM-8:29AM 9. 8:30AM-8:59AM 10. 9:00AM-9:29AM 11. 9:30AM-9:59AM 12. 10:00AM-10:29AM 13. 10:30AM-10:59AM 14. 11:00AM-11:29AM 15. 11:30AM-11:59AM	1. Before 5:00AM → 4.5 2. 5:00AM-5:29AM → 5 3. 5:30AM-5:59AM → 5.5 4. 6:00AM-6:29AM → 6 5. 6:30AM-6:59AM → 6.5 6. 7:00AM-7:29AM → 7 7. 7:30AM-7:59AM → 7.5 8. 8:00AM-8:29AM → 8 9. 8:30AM-8:59AM → 8.5 10. 9:00AM-9:29AM → 9 11. 9:30AM-9:59AM → 9.5 12. 10:00AM-10:29AM → 10 13. 10:30AM-10:59AM → 10.5 14. 11:00AM-11:29AM → 11 15. 11:30AM-11:59AM → 11.5
sp004c	What time do you try to fall asleep on weekends?	1. Before 7:00PM 2. 7:00PM-7:29PM 3. 7:30PM-7:59PM 4. 8:00PM-8:29PM 5. 8:30PM-8:59PM 6. 9:00PM-9:29PM 7. 9:30PM-9:59PM 8. 10:00PM-10:29PM 9. 10:30PM-10:59PM 10. 11:00PM-11:29PM 11. 11:30PM-11:59PM 12. After midnight	1. Before 7:00PM → 18.5 2. 7:00PM-7:29PM → 19 3. 7:30PM-7:59PM → 19.5 4. 8:00PM-8:29PM → 20 5. 8:30PM-8:59PM → 20.5 6. 9:00PM-9:29PM → 21 7. 9:30PM-9:59PM → 21.5 8. 10:00PM-10:29PM → 22 9. 10:30PM-10:59PM → 22.5 10. 11:00PM-11:29PM → 23 11. 11:30PM-11:59PM → 23.5 12. After midnight → 24

sp005c	What time do you wake up on weekends?	<ol style="list-style-type: none"> 1. Before 5:00AM 2. 5:00AM-5:29AM 3. 5:30AM-5:59AM 4. 6:00AM-6:29AM 5. 6:30AM-6:59AM 6. 7:00AM-7:29AM 7. 7:30AM-7:59AM 8. 8:00AM-8:29AM 9. 8:30AM-8:59AM 10. 9:00AM-9:29AM 11. 9:30AM-9:59AM 12. 10:00AM-10:29AM 13. 10:30AM-10:59AM 14. 11:00AM-11:29AM 15. 11:30AM-11:59AM 	<ol style="list-style-type: none"> 1. Before 5:00AM → 4.5 2. 5:00AM-5:29AM → 5 3. 5:30AM-5:59AM → 5.5 4. 6:00AM-6:29AM → 6 5. 6:30AM-6:59AM → 6.5 6. 7:00AM-7:29AM → 7 7. 7:30AM-7:59AM → 7.5 8. 8:00AM-8:29AM → 8 9. 8:30AM-8:59AM → 8.5 10. 9:00AM-9:29AM → 9 11. 9:30AM-9:59AM → 9.5 12. 10:00AM-10:29AM → 10 13. 10:30AM-10:59AM → 10.5 14. 11:00AM-11:29AM → 11 15. 11:30AM-11:59AM → 11.5
sp028c (bedtime routine)	I followed a bedtime routine before falling asleep.	<ol style="list-style-type: none"> 1. Never 2. Almost never 3. Sometimes 4. Almost always 5. Always 	<ol style="list-style-type: none"> 1. Never → 2 2. Almost never → 2 3. Sometimes → 2 4. Almost always → 1 5. Always → 0
sp006c (bedtime consistency)	I tried to fall asleep at about the same time every night.	<ol style="list-style-type: none"> 1. Never 2. Almost never 3. Sometimes 4. Almost always 5. Always 	<ol style="list-style-type: none"> 1. Never → 2 2. Almost never → 2 3. Sometimes → 2 4. Almost always → 1 5. Always → 0
sp007c (waketime consistency)	I woke up at about the same time every morning.	<ol style="list-style-type: none"> 1. Never 2. Almost never 3. Sometimes 4. Almost always 5. Always 	<ol style="list-style-type: none"> 1. Never → 2 2. Almost never → 2 3. Sometimes → 2 4. Almost always → 1 5. Always → 0
sp025c (TV)	I watched TV shows or videos just before falling asleep.	<ol style="list-style-type: none"> 1. Never 2. Almost never 3. Sometimes 4. Almost always 5. Always 	<p>Consider sp025c (TV), sp026c (games), and sp024c (phone). For each respondent, identify the item with the <i>highest</i> response category endorsement.</p> <p>Recode that response as follows:</p> <ol style="list-style-type: none"> 1. Never → 0 2. Almost never → 1 3. Sometimes → 1 4. Almost always → 2 5. Always → 2 <p>Call this variable “tech”</p>
sp026c (games)	I played video or computer games just before falling asleep.	<ol style="list-style-type: none"> 1. Never 2. Almost never 3. Sometimes 4. Almost always 5. Always 	
sp024c (phone)	I used my phone, computer, or other electronic device just before falling asleep.	<ol style="list-style-type: none"> 1. Never 2. Almost never 3. Sometimes 4. Almost always 5. Always 	
sp018c (presence)	I needed someone with me to fall asleep	<ol style="list-style-type: none"> 1. Never 2. Almost never 3. Sometimes 4. Almost always 5. Always 	<ol style="list-style-type: none"> 1. Never → 0 2. Almost never → 1 3. Sometimes → 2 4. Almost always → 2 5. Always → 2

sp012c (noise)	I had problems sleeping because my room was too noisy.	1. Never 2. Almost never 3. Sometimes 4. Almost always 5. Always	1. Never → 0 2. Almost never → 1 3. Sometimes → 1 4. Almost always → 2 5. Always → 2
sp010c (light)	I had problems sleeping because there was too much light in my room.	1. Never 2. Almost never 3. Sometimes 4. Almost always 5. Always	1. Never → 0 2. Almost never → 1 3. Sometimes → 1 4. Almost always → 2 5. Always → 2
sp013c (too hot)	I had problems sleeping because my room was too hot.	1. Never 2. Almost never 3. Sometimes 4. Almost always 5. Always	Consider sp013c (too hot) and sp014c (too cold). For each respondent, identify the item with the <i>highest</i> response category endorsement. Recode that response as follows: 1. Never → 0 2. Almost never → 1 3. Sometimes → 1 4. Almost always → 2 5. Always → 2 Call this recoded variable “roomtemp”
sp014c (too cold)	I had problems sleeping because my room was too cold.	1. Never 2. Almost never 3. Sometimes 4. Almost always 5. Always	

Step 2: Generate sleep timing variables

Weekday and weekend sleep opportunity

Calculate weekday and weekend sleep opportunity using recoded variables as follows:

Weekday sleep opportunity = (24 - weekday bedtime) + weekday wake time

Weekend sleep opportunity = (24 - weekend bedtime) + weekend wake time

Calculate **weekend oversleep** as follows:

Weekend oversleep = weekend sleep opportunity – weekday sleep opportunity

Assign **weekday sleep opportunity** scores and labels depending on children’s age as follows:

<u>For children ages 8-12 years...</u>	
If weekday sleep opportunity is...	Assign the following score (label)
≥ 9.5 hours	0 (Sufficient)
≥ 8.5 & < 9.5 hours	1 (Insufficient)
< 8.5 hours	2 (Very Insufficient)

<u>For children ages 13-17 years...</u>	
If weekday sleep opportunity is...	Assign the following score (label)
≥ 8.5 hours	0 (Sufficient)
≥ 7.5 & < 8.5 hours	1 (Insufficient)
< 7.5 hours	2 (Very Insufficient)

Weekday bedtime

Assign **weekday bedtime** scores and labels depending on children's age as follows:

For children ages 8-12 years...	
If weekday bedtime is...	Assign the following score (label)
≤ 21	0 (Appropriate)
> 21 & ≤ 22	1 (Late)
> 22	2 (Very Late)

For children ages 13-17 years...	
If weekday bedtime is...	Assign the following score (label)
≤ 22	0 (Appropriate)
> 22 & ≤ 23	1 (Late)
> 23	2 (Very Late)

Step 3: Calculate total scores

Sleep practices items can be combined to yield 3 scale scores (sleep timing, routines/consistency, and sleep environment. Generate scales scores as follows:

Total sleep timing score (possible range 0-4): Sum scores for “weekday sleep opportunity” and “weekday bedtime”

Total routines/consistency score (possible range 0-6): Sum recoded values for sp028c (bedtime routine), sp006c (bedtime consistency), and sp007c (waketime consistency)

Total sleep environment score (possible range 0-6): Sum recoded values for sp012c (noise), sp010c (light), and “room temp”

In addition, “tech” (maximum level of technology use before bed) and “sp018c” (presence: needed someone to fall asleep) can be used as indicator items (possible range in score = 0-2).

Bedtime technology indicator item (possible range 0-2): Use “tech” as an indicator item

Need someone to fall asleep indicator item (possible range 0-2): Use sp018c as an indicator item