## The Pittsburgh Study

October 2022

## **Overview**

Co-Leads: Liz Miller Felicia Savage Friedman

The Pittsburgh Study is made possible in part through generous support from the Children's Hospital of Pittsburgh Foundation, University of Pittsburgh Department of Pediatrics, The Grable Foundation, and The Shear Family Foundation.





## Thriving Children & Racial Equity

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## **The Pittsburgh Study Vision**

Every child in our region is **healthy**, **thriving**, and **achieving their academic goals**.



The Pittsburgh Study

## Community-Partnered Research as Advocacy

- The Pittsburgh Study aims to center community voices, racial justice, and intersectionality at every stage of children's lives – from pregnancy through adolescence.
- Undoing systemic racism removes barriers to thriving of children, youth, and families.
- Research as advocacy advances knowledge, practice, and people.
- We are continuously learning and welcoming new partners of diverse backgrounds and disciplines from our communities.

Contact us at <a href="mailto:pghstudy@pitt.edu">pghstudy@pitt.edu</a>



The Pittsburgh Study

## **TPS Conceptual Framework of Child Thriving**



# **Doing Science Like Never Before**

Community- Engaged Scholarship	<ul> <li>Discovery and advocacy with community</li> <li>Equity and inclusion</li> <li>Reciprocity</li> <li>Long-term partnership</li> <li>Transparency and data accessibility</li> <li>Accountability</li> <li>Shared decision-making</li> <li>Capacity building, diverse workforce development</li> </ul>
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## **Our Supporters**



The Pittsburgh Study

## **TPS Co-Directors**



Felicia Savage Friedman, MEd, is the co-director of the Pittsburgh Study. She is also a 500-hour Experienced-Registered Yoga Teacher (E-RYT) and a Yoga Alliance Continuing Education Provider. Felicia has practiced Raja Yoga for 30 years and has taught it for 23 years. Her business, YogaRoots On Location, LLC<sup>®</sup>, is on a mission to teach and train historically trauma-informed Raja Yoga practitioners by integrating yoga-based adaptable

Yoga

Felicia Savage Friedman movements, aromatherapy, Reiki, Community Co-Director universal meditation practices, YogaRoots On Location and Anti-racist Raja Precepts.



Liz Miller Academic Co-Director **Pitt Pediatrics** 

Dr. Miller is Professor in Pediatrics. Public Health. and Clinical and Translational Science at the University of Pittsburgh and Director of the Division of Adolescent and Young Adult Medicine, UPMC Children's Hospital of Pittsburgh. Her research addresses interpersonal violence prevention and adolescent health promotion in clinical and community settings. She is also the co-director of the Pittsburgh Study and co-director of Community Engagement for the University of Pittsburgh Clinical and Translational Science Institute.



Val Chavis **Community Liaison Pitt Center for** Parents and Children

Val is the Admin, Service and Outreach Coordinator at the Center for Parents and Children. Formerly a Co-Director of the Pittsburgh Study, she now serves as community liaison on the TPS core team. She was Project Director of the Urban League of Greater Pittsburgh, East Hills Family Support Center and has 17 years of experience managing a family support center that enables parents to nurture their children, strengthen family bonds, advocate for themselves and their children, and build community strengths. She is a Strength-Based Leadership Credentialed-LSF and a Community Mentor for University of Pittsburgh graduating medical students and postdoctoral research scholars

#### **TPS Core Team**

Barbara Fuhrman Senior Research Scientist

> **Amy Snider** Administrator

Jamil Bey **CEO** UrbanKind Institute

**Elizabeth Walker** Community Health Research Coordinator Latisha Adair Johnson Administrative Assistant

Deb Moore Director of Communications, **Community Health** 

**Robert Gradeck Project Manager** WPA Regional Data Center

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## Age-Based Collaboratives

- 1. Pregnancy
- 2. Early Childhood
- 3. Early School Age
- 4. Middle Childhood
- 5. Adolescent Middle School

– High School

#### **Age Collaborative Positive Health Interventions**



The Pittsburgh Study

SAF0	3rd box from left doesn't have a title like all the others. What do we call the 2-4.5 yrs Cohort?
	Snider, Amy F, 2022-10-13T21:39:37.647

## Cross-Cutting Collaboratives

- 1. Data Accessibility
- 2. Health Services Delivery
- 3. Healthy Environments Strong Bodies
- 4. Policy and Place
- 5. Statistics and Data Core

# **Highlights of accomplishments**

Community Engaged Scholarship

Addressing Social Determinants of Health and Health Equity

- 300+ community members and organizations involved across multiple collaboratives
- Extramural research funding successes (NIH, CDC, IES, SAMHSA = \$20 million)
- Conducting research throughout pandemic; translating data to guide action



# **Opportunities for Collaboration**

Community Engaged Scholarship	•
Addressing Social	

Social Determinants of Health and Health Equity

- Participation on scientific committees
- Training as:
  - community prevention specialist
  - community violence prevention mentor
  - restorative practitioner
  - early literacy specialist
  - community health deputy, resource navigator
  - collective efficacy community organizer
  - community ambassador for scientific research

\*\*Community members are compensated for their time and effort\*\*



## **Assets and Opportunities**

Community Engaged Scholarship

Addressing Social Determinants of Health and Health Equity

- Relational trust
- Community-partnered research infrastructure
- Pandemic-related resources to support interventions
- National foundations → Education, Health, and Equity
- Alignment with regional initiatives

# Sleep 101

Peter L. Franzen, PhD Associate Professor of Psychiatry and Clinical and Translational Science



Sleep Summit The Pittsburgh Study October 14, 2022



- 1. How does sleep change across development?
- 2. Why does it matter?





#### Why does *it* matter?





Cognition Think **Concentrate** Learn Remember Insight **Emotions Mental** Mood Health **Stress Social Interactions Behavior** Accidents **Motor Skills** Health **Immune System Metabolism** Insulin

#### S. NATIONAL SLEEP FOUNDATION

#### 2015 SLEEP DURATION RECOMMENDATIONS



#### SLEEPFOUNDATION.ORG | SLEEP.ORG

Hirshkowitz M, The National Sleep Foundation's sleep time duration recommendations: methodology and results summary, Sleep Health (2015), http://dx.doi.org/10.1016/j.sleh.2014.12.010

#### Insomnia increases during adolescence

- Community-based study of adolescents 13-16 years
- Lifetime prevalence 10.7%, with 53% comorbid with a psychiatric disorder.
- Rate increases over adolescence
- Onset of menses associated with 2.75 fold increased risk of insomnia



Johnson et al., 2006, Pediatrics

#### **Epidemic of sleep deprivation in teens**

 CDC - Youth Risk Behavior Survey (YRBS), 4 waves: 2007–2013 n = 52,718 US high school students





Q: Why is short sleep so common in teens?

A: School / sleep squeeze

Result of unique **biological** and **social/environmental** influences during adolescence.

Biological changes begin post-puberty

Why is Short Sleep So Common In Teens? <u>Biological</u> Changes In Sleep at Puberty



Sleep becomes lighter

Crowley, Acebo, Carskadon, 2011, Dev Psychobiol

...leads to preference for later bed and wake times



#### **Circadian Rhythms: Clocks everywhere**





Arble & Sandoval (2013) Front. Neurosci

#### A marker for the end of Adolescence? Time of midsleep on "free" days



Roenneberg, et al., 2004, Current Biology

Why is Short Sleep So Common In Teens? <u>Biological</u> Changes In Sleep at Puberty



...leads to preference for later bed and wake times

#### Slow wave sleep

## Adolescent

## Adult



#### Why is Short Sleep So Common In Teens? <u>Social & Environmental</u> Changes in Sleep at Puberty

Decrease in parental control



Use of social media (& exposure to light)

97% of teens have an electronic device in their rooms Homework & after school activities



Early school start times



Keyes et al 2015; Johnson et al 2016; Roenneberg et al 2004

#### High School Start Times in Allegheny County





#### Delayed circadian timing during adolescence leads to chronic circadian misalignment

- Circadian and preferred sleep timing shift later (delay) during adolescence
- Mismatch with early school start times





#### Why does *when* or *how much* we sleep matter?


### Consequences of Insufficient Sleep:

- Lower grades & achievement test scores
- Falling asleep in school
- More days tardy or absent

- Car crashes
- Depression
- Suicide
- Substance use
- Violence and risk taking
- Weight gain / obesity
- Sports injuries

### Consequences of insufficient sleep in adolescents

- Academic Performance
  - 3 meta-analyses of 16 studies (Dewald, et al., 2010)
  - Sleep quality also examined



#### **Sleep Duration**

#### **Sleepiness**

### Consequences of short sleep: Physical health

- Overweight/obesity
  - Link between short sleep and overweight, obesity in middle school, high school



- High blood pressure and diabetes linked to short sleep duration
- Impairs immune function, and thus, healing and recovery
- Short sleep duration in adolescence in girls predicted increased risk of high cholesterol as a young adult (Gangwisch, et al., 2010, SLEEP)

Shochat et al., 2014, Sleep Med Reviews

### Consequences of insufficient sleep in adolescents

- Increased sports-related injuries
  - 7<sup>th</sup>-12<sup>th</sup> graders in California school (Milewski, et al., 2012 abstract)
  - Those who slept 8+ hours were 68% less likely to be injured
  - Risk also increased for higher grade level
    - Independent of gender, amount of sports participation per year, # of sports, strength training



#### Consequences of insufficient sleep in adolescents





- Motor Vehicle Accidents
  - Leading cause of death in teenagers (CDC, 2012)
    In 2010, 22% of drivers ages 15–20 had been drinking
- Teen drivers ages 16–19 are 3x more likely to be in a fatal crash vs. drivers 20+
- Teen drivers are at the highest risk of car accidents due to falling asleep, accounting for 50% of all crashes
- NSF poll (2006): 68% of HS seniors reported driving while drowsy; 15% reported drowsy driving at least once a week

# Adolescence: A period of vulnerability that may be further exacerbated by sleep loss



Nature Reviews Neuroscience

# Sleep and Youth Psychiatric Disorders

# Sleep is disturbed in youth with psychiatric disorders

- depression & bipolar
- anxiety
- ADHD
- substance use disorders



Sleep problems are:

- a risk factor for developing psychiatric disorders
- symptoms of psychiatric disorders
- associated with worse outcomes in patients with psychiatric disorders

# Meta-analysis of the effects of insomnia on future depression

Study name	Statistics for each study					Odds ratio and 95% CI	
	Odds ratio	Lower limit	Upper limit	Z-Value	p-Value		
Szklo-Coxe et al 2010	2,49	0,83	7,48	1,62	0,10		
Kim et al 2009	2,10	1,48	2,97	4,20	0,00		
Buysse et al 2008	1,60	1,16	2,21	2,85	0,00		
Cho et al 2008	3,05	1,07	8,72	2,08	0,04		o
Jansson-Fröjmark & Lindblom 2008	3,51	2,11	5,83	4,84	0,00		-0
Roane & Taylor 2008	2,20	1,35	3,60	3,15	0,00		-0
Morphy et al 2007	2,71	1,37	5,37	2,86	0,00		
Perlis et al 2006	6,86	1,30	36,14	2,27	0,02		
Hein et al 2003	2,40	1,28	4,51	2,72	0,01		—o—
Roberts et al 2002	1,92	1,30	2,83	3,30	0,00		-0-
Johnson et al 2000	1,53	0,36	6,56	0,57	0,57		o
Mallon et al 2000	2,78	1,59	4,88	3,58	0,00		
Foley et al 1999	1,70	1,29	2,24	3,80	0,00		
Chang et al 1997	1,90	1,16	3,10	2,57	0,01		-0-
Weissman et al 1997	5,40	2,59	11,26	4,50	0,00		
Breslau et al 1996	2,10	1,10	4,00	2,25	0,02		—o—
Vollrath et al 1989	2,16	1,17	3,99	2,46	0,01		
Fixed model O	dds	Ratio	<b>) = 2</b> .	1 (1.9	9 – 2.4	<b>4)</b>	1

#### Baglioni, et al., J Affect Disord, 2011

The "dose" of sleep loss increases negative consequences: Fairfax County VA (n=27,939) Winsler, et al. 2015, *J Youth Adolesc* 



*Note*: Each hour less of sleep is associated with a significant increase in odds of the outcome, *p*'s < .001

Winsler, et al. 2015. Journal of Youth and Adolescence

# Sleep loss and depression are both extremely prevalent during adolescence



# Adolescence: A period of vulnerability that may be further exacerbated by sleep loss



Casey, Jones, & Hare (2008). Annals of the New York Academy of Sciences, 114

### **Consequences of insufficient sleep in adolescents**

#### Mood

 Greater depressive symptoms (Pasch et al. 2011; Roberts & Duong, 2014); suicidal ideation, attempts, and death (Goldstein et al. 2008; Wong et al. 2012)

#### Increased substance use

 Short sleep is associated with more caffeine, smoking, alcohol, substance use, and stimulant abuse (Mcknight-Eily, et al. 2011; Hasler et al. 2017; Terry-McElrath et al., 2017)

### Increased risk taking behavior

 Violence, unsafe behaviors, drug use and sexual activities more common in short sleepers (O'Brien & Mindell, 2005; Owens et al., 2017)

#### Delinquent behavior

- Short sleep duration and delayed bedtimes were directly associated at age 16 (but not ages 22 or 28) in National Longitudinal Study of Adolescent Health (Peach & Gaultney, 2013)
  - Partly mediated by increased sensation seeking and reduced impulse control

## **Discussion Ideas**

- In what ways can parents help support kids getting more sleep?
- Are there ways that schools can help support kids getting more sleep?
- Would starting schools later in the day allow teens to get more sleep, or will they just stay up later?

# Sleep and Better Health Summit

Dawn Golden

October 14, 2022

# Why Sleep Is Important

- Assists students with concentration in the classroom and with classwork/homework assignments
- Allows students to stay focused on tasks
- Assists the brain and other body functioning
- Assists with emotional regulation
- Improves a students overall academic performance

# Why Sleep is Important

• "The National Sleep Foundation (https:www.sleepfoundation.org/teensand-sleep) and the American Academy of Sleep Medicine (https:sleepeducation.org/docs/default-document-library/sleeprecharges/teens/pdf) recommend that teenagers sleep between 8 and 10 hours a night to maintain good health."

• Importance of Sleep for Teenagers (https:quatar-weill.cornell.edu.institute-for-population-health

# Barriers to a Goodnight Sleep

- Difficulty falling asleep
- Student's mental health
- Trauma
- Community violence
- Students current living situation
  - Homelessness
  - Foster care
- Social media/use of electronic devices
- Early school start time
- Heavy homework and school assignments load
- Extra-curricular activities and practices

# Sleep Deprivation Impacts

- Brain functioning
- Mental health
- Physical health

# How Sleep Deprivation Impacts The Brain

• Scientists measuring sleepiness have found that sleep deprivation leads to **lower alertness and concentration**. It's more difficult to focus and pay attention, so you're more easily confused. This hampers your ability to perform tasks that require logical reasoning or complex thought. Sleepiness also impairs judgment.

# How Sleep Deprivation Impacts The Brain

- Sleepiness slows down your thought processes
  - The ability to be alert and concentrate decreases
  - It is more difficult to focus and pay attention, thus leading to confusion
  - It is difficult to perform tasks that require logical reasoning or the need to think with complexity
  - It is more challenging to make sound decisions due to the inability to assess a situation
- Excessive sleepiness impairs memory
  - Lack of sleep interferes with the brains ability to consolidate new information into memories
- Poor sleep makes learning difficult
  - It is more difficult to grasp information
  - It is difficult to remember information being presented

Sleepiness: Cognitive and Emotional Effects (https://www.webmd.com/sleep-disorders)

# How Sleep Deprivation Impacts Mental Health

- Lack of sleep can alter your mood by causing irritability and anger, which in turn, may impact the ability to cope with stress
- Chronic lack of sleep may lead to depression
- Lack of sleep may impact self-esteem
- Lack of sleep can increase psychiatric symptoms and increase risk for suicide (<u>https://columbia</u> psychiatry.org/news/how-to-sleep-deprivation-affects-your-mental-health)

# How Sleep Deprivation Impacts Physical Health

- Lack of sleep is a contributor to diabetes and obesity
- Lack of sleep may impact physiological growth spurt in teenagers

# How Sleep Deprivation Impacts Student Outcomes

- Students have poor school attendance
- Students often times have poor grades
- Students often times have below average assessment scores
- Students experience difficulty completing classwork and homework assignments
- Students physical health begins to impacted
- Students may experience behavioral challenges

# How to support better sleep

- Be supportive of students and parents
- Gain support from parents, guardians
- Assist students in establishing organizational skills and structure
- Assist students with developing time management skills
- Advocate for later school start times
- Encourage and assist parents to seek out support services and programs
- Implement mindfulness or other mind calming activities

# Discussion Ideas

- Would changing the start time increase attendance outcomes for students?
- What are the challenges/barriers in changing school start times for students?

### **Sleep Roses and Thorns**

Jessica Levenson, PhD October 14, 2022 The Pittsburgh Study The Summit on the Science of Sleep

## **Disclosures**

- Research Funding: NIH, University of Pittsburgh
- Royalties: American Psychological Association Books

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• Employment: University of Pittsburgh, UPP





Sleep problems are common among

### Where are the roses?

Good treatments exist!



### **Cognitive Behavioral Interventions for Adolescent Sleep Problems**

- Cognitive Behavioral Therapy for Insomnia (CBTI)
- Interpersonal and Social Rhythm Therapy (IPSRT)
- Transdiagnostic Intervention for Sleep and Circadian Dysfunction (TranS-C)



- Sleep education
- Healthy sleep habits
- Keep the bed for sleep only
- Sleep restriction
- Addressing unhelpful beliefs about sleep
- Regularize daily routines



Harvey & Buysse 2016, *Treating Sleep Problems: A Diagnostic Approach* 

## Some terminology...

- Behavioral Sleep Interventions = BSIs
- Behavioral and/or cognitive strategies
- Address adolescent sleep problems



# **Do BSIs Improve Sleep?**

#### 2017 Systematic Review, Meta-Analysis

- 9 adolescent-focused BSIs
- Improvements in
  - Time to fall asleep
  - Time spent asleep
  - Time awake during the night
  - Sleep efficiency

Review > Clin Child Fam Psychol Rev. 2017 Sep;20(3):227-249. doi: 10.1007/s10567-017-0234-5.

Systematic Review and Meta-analysis of Adolescent Cognitive-Behavioral Sleep Interventions

Matthew J Blake <sup>1</sup>, Lisa B Sheeber <sup>2</sup>, George J Youssef <sup>3</sup>, <sup>4</sup>, Monika B Raniti <sup>1</sup>, Nicholas B Allen <sup>5</sup>, <sup>6</sup>



# **Do BSIs Improve Sleep?**

#### 2018 Systematic Review, Meta-Analysis

- 6 trials, 4+ treatment sessions
- Improvements in
  - Time spent asleep
  - Time to fall asleep

Meta-Analysis > J Clin Sleep Med. 2018 Nov 15;14(11):1937-1947. doi: 10.5664/jcsm.7498.

Cognitive and Behavioral Interventions to Improve Sleep in School-Age Children and Adolescents: A Systematic Review and Meta-Analysis

Lie Åslund <sup>12</sup>, Filip Arnberg <sup>13</sup>, Marie Kanstrup <sup>14</sup>, Mats Lekander <sup>12</sup>



## **Do BSIs Improve Sleep?**

#### 2021 Scoping Review Behavioral Treatments Pediatric Insomnia

#### • 120 studies

	All Groups	RCIS	Typically Developing					
	(n = 120)	(n = 44)	Prevention (n = 14)	Young Children $(n = 47)$	School-Aged Children (n = 9)	$\begin{array}{l} \text{Adolescents} \\ (n=10) \end{array}$		
Bedtime/Positive Routines	62 (51.7)	21 (47.7)	3 (21.4)	29 (61.7)	3 (33.3)	1 (10.0)		
Parent Education	44 (36.7)	19 (43.2)	-	21 (44.7)	5 (55.6)	2 (20.0)		
Sleep Hygiene	41 (34.2)	19 (43.2)	3 (21.4)	2 (4.3)	7 (77.8)	9 (90.0)		
Graduated Extinction	37 (30.8)	18 (40.9)	-	22 (46.8)	4 (44.4)	_		
Positive Reinforcement	34 (28.3)	10 (22.7)	-	11 (23.4)	2 (22.2)	-		
Standard Extinction	29 (24.2)	6 (13.6)	-	14 (29.8)	2 (22.2)	-		
Cognitive Strategies	20 (16.7)	10 (22.7)	-	-	4 (44.4)	9 (90.0)		
Relaxation	19 (15.8)	9 (20.5)		2 (4.3)	5 (55.6)	5 (50.0)		
Stimulus Control	19 (15.8)	9 (20.5)	-	-	3 (33.3)	8 (80.0)		
Extinction with	18 (15.0)	6 (13.6)	_	14 (29.8)	-	-		
Parental Presence								
Bedtime Fading	16 (13.3)	6 (13.6)	-	6 (12.8)	3 (33.3)	1 (10.0)		
Early Education/ Prevention	14 (11.7)	10 (22.7)	14 (100.0)	_	_	-		
Sleep Restriction	12 (10.0)	4 (9.1)	_	1 (2.1)	2 (22.2)	3 (30.0)		
Bedtime Fading with Response Cost	9 (7.5)	2 (4.5)	-	1 (2.1)	1 (11.1)	-		
Mindfulness	5 (4.2)	2 (4.5)	_	-	-	2 (20.0)		
Scheduled Awakenings	4 (3.3)	3 (6.8)	-	2 (4.3)	-	-		
Medications	3 (2.5)	1 (2.3)	-	1 (2.1)	-	-		



### Where are the thorns?



- Of 120 studies reviewed in the 2021 Scoping Review Behavioral Treatments Pediatric Insomnia, only 10 focused on adolescents
- Lack of BSI research with children and families of racially and ethnically minoritized and/or lower SES background
- Evidence-based BSIs are not accessible to nor received by most youth and families



### What impedes access/receipt?






# Why Deliver a Sleep Promotion Program in Schools?

- Most kids are in school
- School-based providers have relevant training
- Provide resources and training to schools
- Most school-based sleep promotion programs have limited impact on sleep behavior







- Universal intervention vs. targeted intervention
  - Inclusion of those with good sleep can diminish effects of intervention
- Low involvement of parents/caregivers
- Limited staff time



**Qualitative Work** 



## How can we adapt an existing sleep promotion program to be suitable for the school setting?

Qualitative work with stakeholders

- High school staff, administrators, board members
- High school students



#### **Study Aim**

Deliver and test a school-based sleep promotion program for adolescents



#### **Study Design**

- School-based providers identify participants
- Pre-program assessment
- Program: 2-3 sessions (30-45 minutes)
- Post-program assessment

University of



#### **School Partnership**

- Woodland Hills School District
- Steel Valley School District
- Schools selected which provider would deliver the program
  - One teacher
  - One social worker
- Study-specific training
- Feedback:
- 3 sessions was not feasible
- Groups?
- •~20 minutes





### **Eligibility**

- 8<sup>th</sup>, 9<sup>th</sup>, or 10<sup>th</sup> grade
- Age 12-16
- Mild to moderate truancy\*
- Regular access to a mobile phone
- Insufficient sleep
  - OR sufficient sleep timing that results in arriving late to school





#### **Program Satisfaction -- Provider**

- Program Training
- Program Relevance
- Program Format
- Overall
- Comments

This program is important to the success of the students it aims to help:

- a. Strongly agree n=1
- b. Agree n=1
- c. Disagree
- d. Strongly Disagree



#### **Program Satisfaction -- Provider**

- Program Training
- Program Relevance
- Program Format
- Overall
- Comments

The thing I liked least about delivering the program was:

- 1. Recruiting (very time consuming) and keeping up to date with tasks involved
- 2. Time constraints with other job responsibilities; recruitment was more time consuming than I thought it would be



#### **Program Satisfaction -- Provider**

- Program Training
- Program Relevance
- Program Format
- Overall
- Comments

Things that made it hard for me to be involved in the research and/or deliver the research program include:

- 1. My schedule and work load as a teacher is demanding, and my schedule provided little time for this
- 2. Other job duties



#### **Program Satisfaction -- Youth**

Things I liked the most:

 "That I am actually getting help with my attendance because my lack of sleep is the reason I miss school mostly"

- "Everyone was very nice and I think I learned more than I expected to"
- "I'm a bad sleeper so it helped me and the compensation"



#### **Program Satisfaction – Youth (n=9)**

Satisfaction Item Rating
--------------------------

## Is the Program Associated with Changes in Sleep?



## **Sleep Diary**

	Baseline (N=9)	Post (N=9)
Total Sleep Time		
Mean (SD)	6:40 (2:01)	7:16 (0:53)
Range	4:14-9:49	6:00-8:46



#### **Lessons Learned**

- School-based sleep program is acceptable, shows promise for improving sleep
- Need to find ways of limiting staff burden (time)
- Provider acceptability may be improved by better integrating the program into existing school workflows
- How to improve acceptability among youth?



#### **Lessons Learned**

- School partnership is critical
- Feasibility = flexibility
  - Listen to your community partners!
- Need additional studies testing BSIs among adolescents, among minoritized youth
- Need to increase receipt of BSIs among youth
- Need to adapt BSIs to suit the needs of various settings



#### **Discussion Ideas**

- How can we better integrate evidence-based sleep programs into accessible settings?
- Which personnel would be most appropriate to deliver a brief sleep program in schools? Clinics? Other community settings?Listen to your community partners!





#### TPS Sleep Summit Survey



## Thriving Children & Racial Equity