

Behavioral Strategies to Manage Your Sleep Health in a COVID-19 and Racism Pandemic

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Outline

- ❑ Sleep is Essential to Human Functioning
- ❑ Sleep Disparities and Health in the United States
- ❑ Structural inequalities in COVID19
- ❑ COVID-19 and Racism Pandemics as Community Trauma
- ❑ Stress and Sleep Health
- ❑ Evidence-Based Behavioral Strategies to Improve Sleep

Learning Objectives

1. To understand the function of sleep and its relationship to health, and health disparities in the United States.
2. To understand the impact of stress, discrimination, and trauma on sleep health in a COVID-19 and racism pandemic.
3. To understand evidence-based behavioral strategies to improve sleep health.

Warm Up Questions



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1. How many hours of sleep per night do you usually get?
2. How has your sleep changed in light of the COVID-19 pandemic and racial justice uprisings?

Sleep is Essential to Human Functioning

Brain Model

- ❑ **Hypothalamus** – control center for sleep and arousal
- ❑ **Brain Stem** – transitions between wake and sleep
- ❑ **Cerebral Cortex** – processes information
- ❑ **Pineal Gland** – produces melatonin

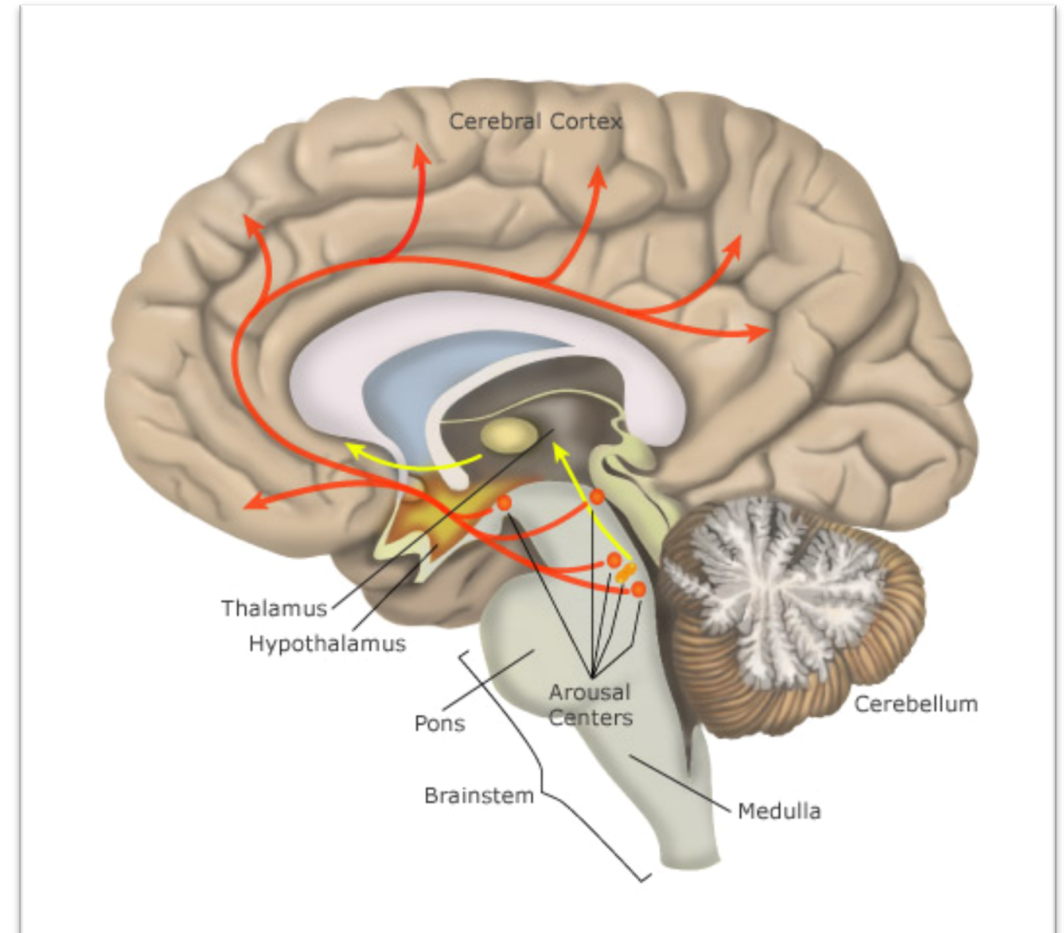


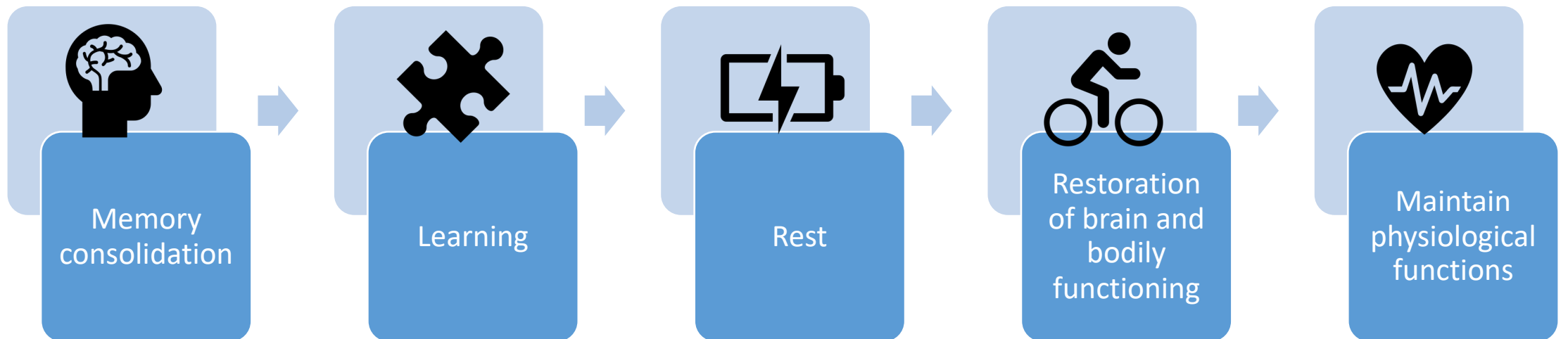
Photo Credit: Harvard University

Sleep is...

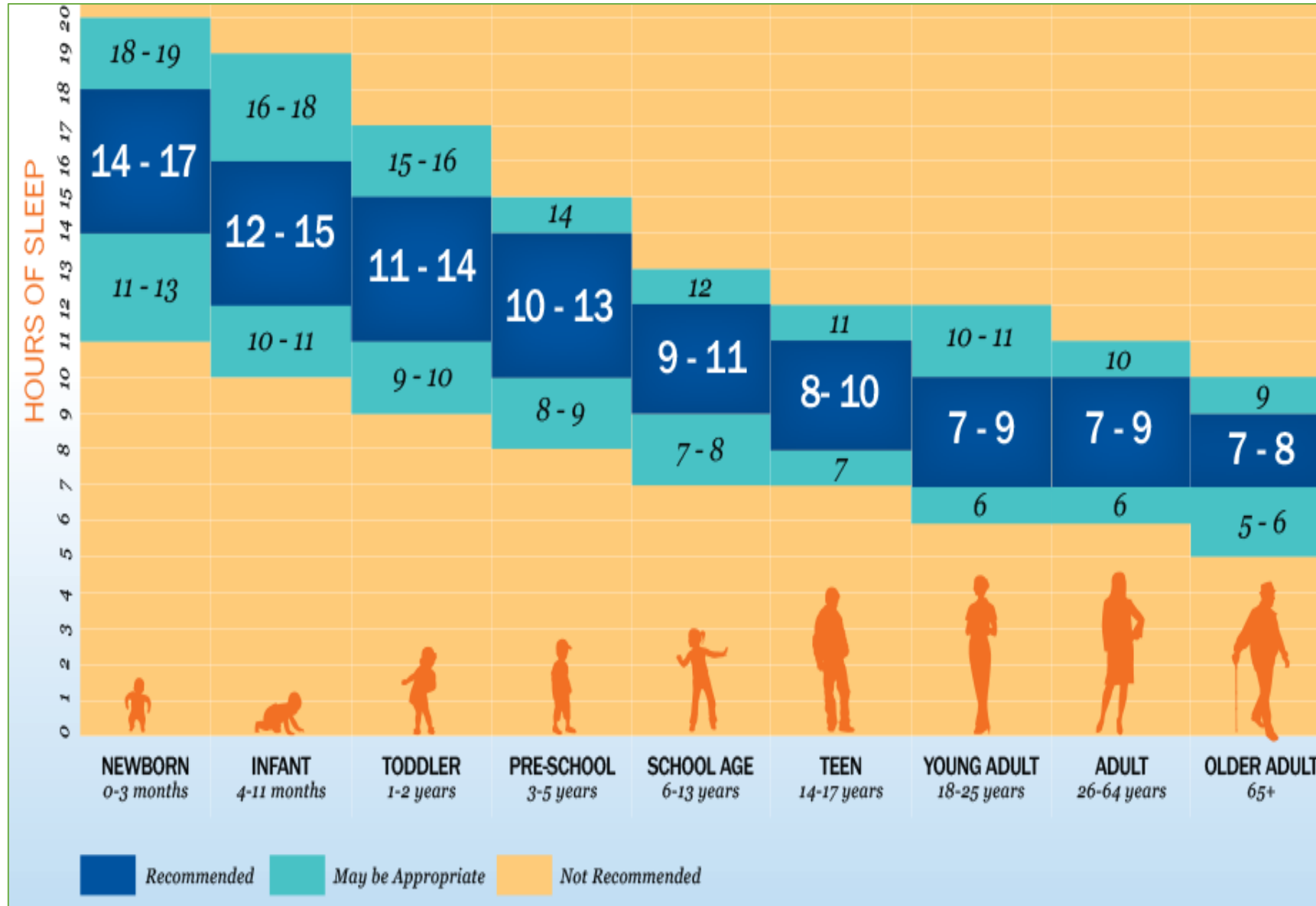
- ❑ Complex, essential, neurophysiological state
- ❑ Closed eyes, behavioral quiescence, & perceptual disengagement
- ❑ Physiological and psychological restoration
- ❑ Fundamental **attachment** behavior
- ❑ Sleep cycles vary across lifecourse

Source: Troxel, 2010; Jacson, Redline, & Emmons, 2015

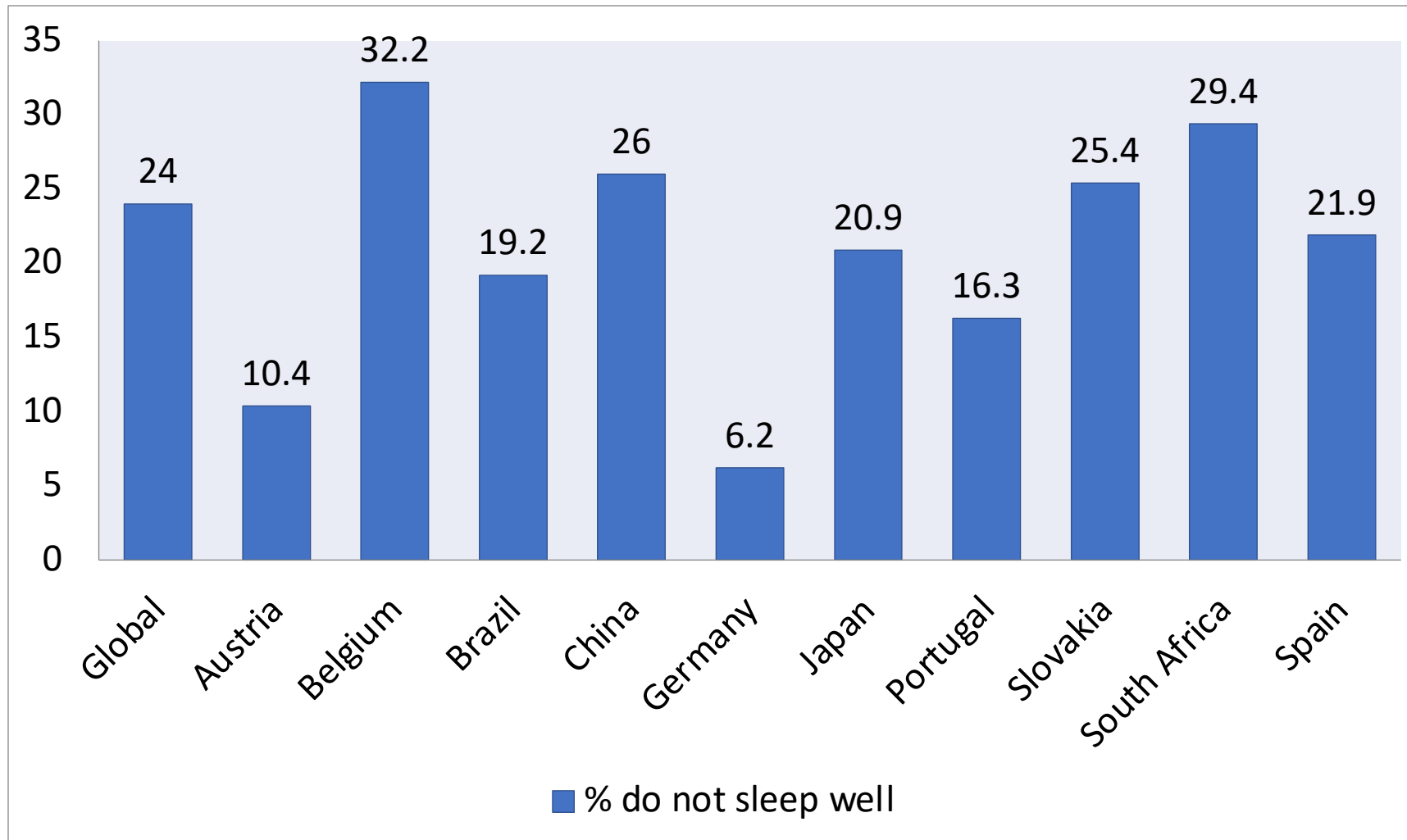
Sleep is Important for...



NSF 2015 Sleep Recommendations

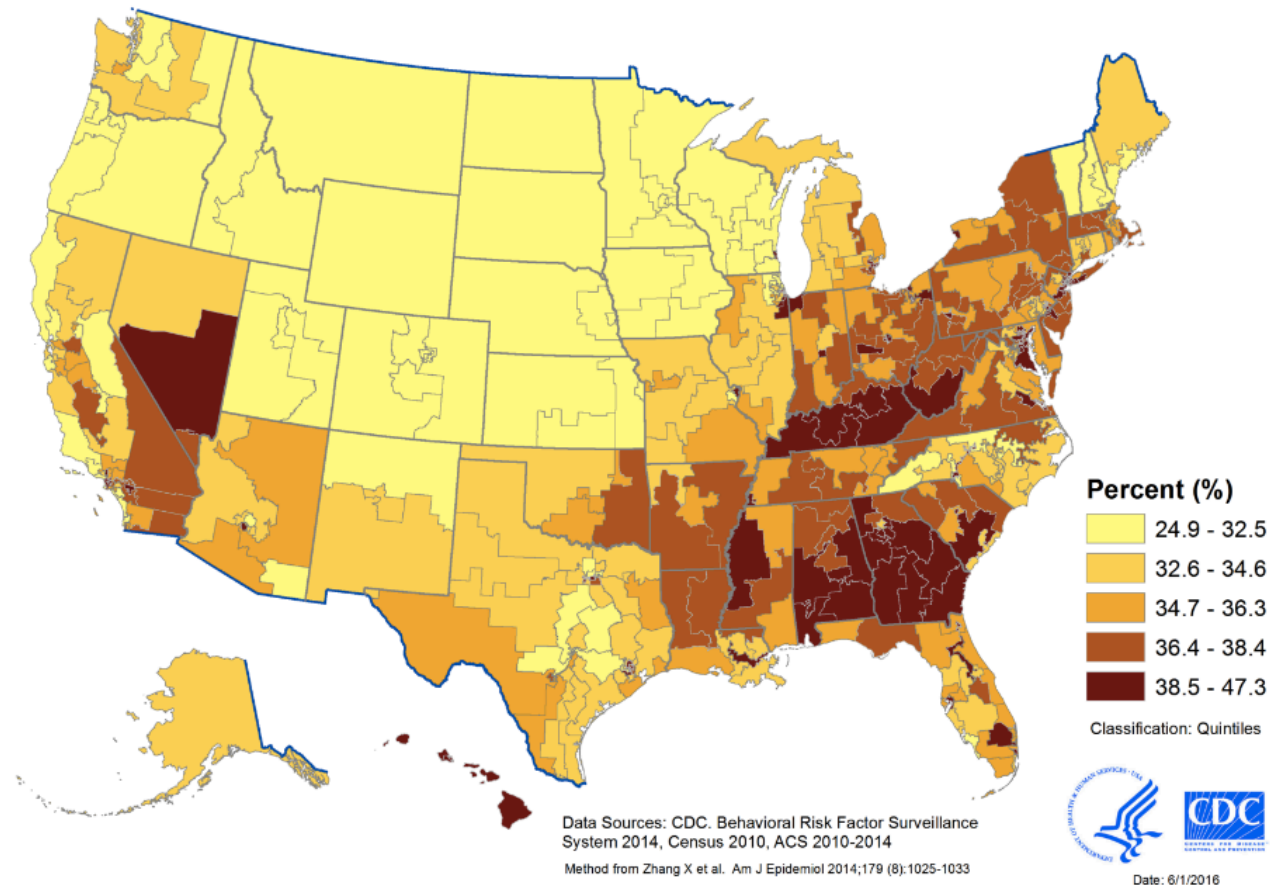


Sleepless Around the Globe



1 in 3 US Adults are Sleepless in America

Figure 3. Prevalence of Short Sleep Duration (<7 hours) for Adults Aged ≥ 18 Years, by Congressional District, United States, 2014



Sleep in New York



Percent (%) of Adults

32.3 - 34.8

34.9 - 36.0





36.1 - 41.9

Classification: Tertiles

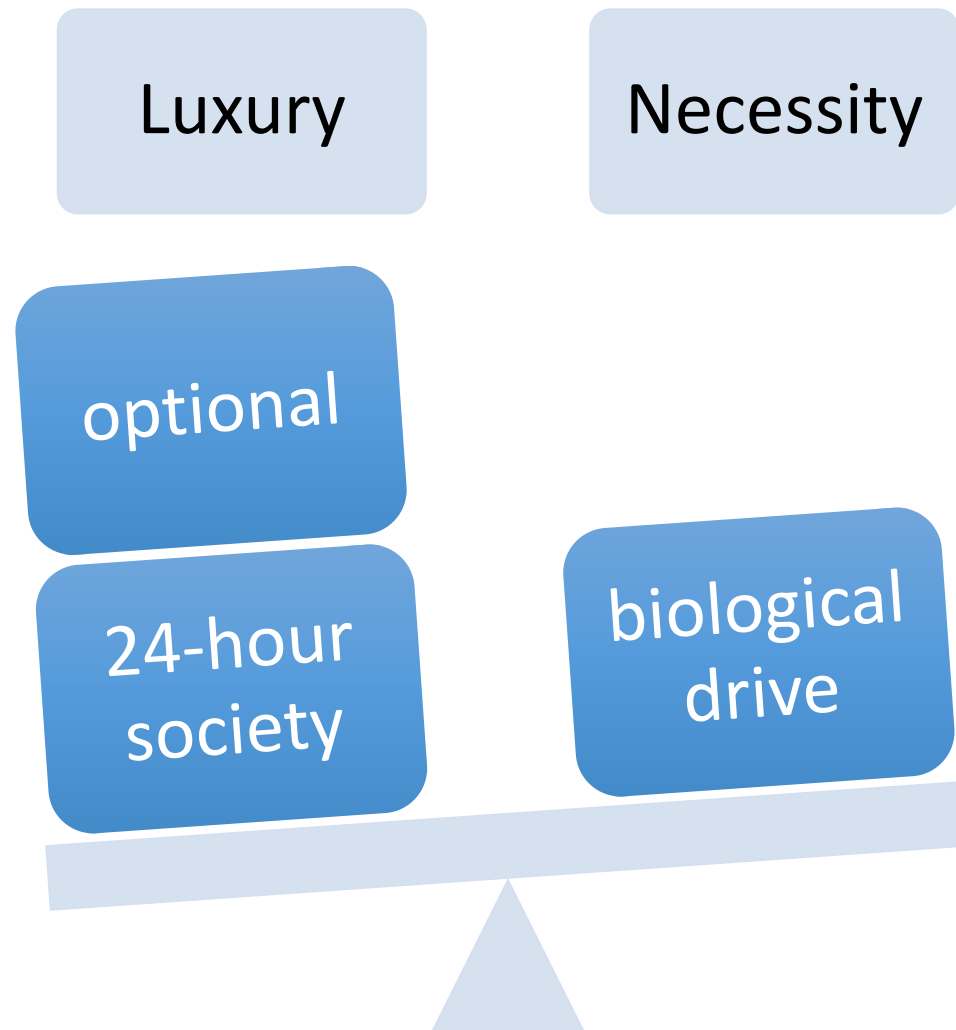
In 2014, 38.1% of New York adults reported sleeping less than 7 hours per night.

LEGEND

	Target met or exceeded ^{2,3}		Improving ^{4,5}		Little or no detectable change ⁶⁻¹⁰		Getting worse ^{11,12}		Baseline only ¹³		Informational ¹⁴
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	Objective Description	Baseline Value (Year)	Midcourse Value (Year)	Target	Movement Toward Target ¹⁵	Movement Away From Baseline ¹⁶	Movement Statistically Significant ¹⁷
 ¹³	SH-1 Adults with symptoms of obstructive sleep apnea who seek medical evaluation (age-adjusted, percent, 20+ years)	25.5% (2005–2008)		28.0%			
 ⁶	SH-2 Motor vehicle crashes involving drowsy driving (per 100 million vehicle miles)	2.7 (2008)	2.4 (2013)	2.1	50.0%		No
 ⁶	SH-3 Students getting sufficient sleep on school nights (percent, grades 9–12)	30.9% (2009)	31.7% (2013)	33.1%	36.4%		No
 ¹¹	SH-4 Adults getting sufficient sleep (percent, 18+ years)	69.6% (2008)	67.6% (2014)	70.8%		2.9%	Yes

Sleep is considered either a...



Structural Constraints

- poverty
- multiple jobs
- commuting long distances
- neighborhood factors
- financial stress

Sleep Disturbances ...

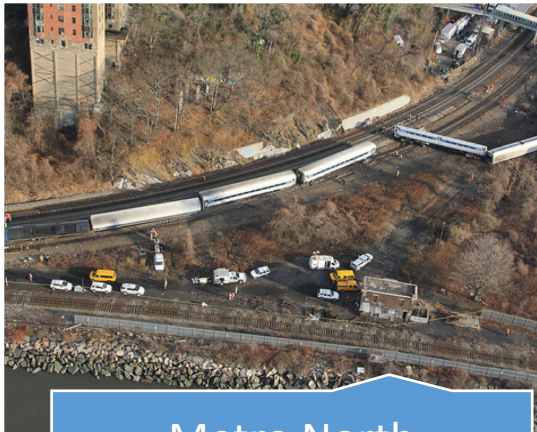


- ☐ Increase cardiovascular, obesity, diabetes, cancer, mortality, & depression risk.
- ☐ Increase work absenteeism.
- ☐ Often undertreated.

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Source: Luyster et al., 2012; Chen et al., 2014

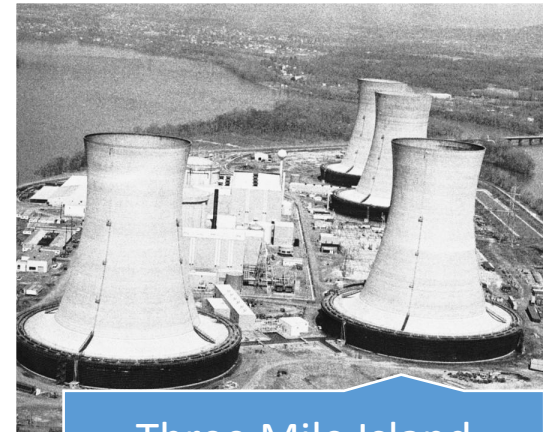
Sleep Loss and Industrial Accidents in USA



Metro North
Derailment 2013



Exxon Valdez Oil Spill
1989



Three Mile Island
Nuclear Accident 1973

Sleep Disparities

Table 1 Racial/ethnic disparities in selected sleep dimensions compared to non-Hispanic White adults

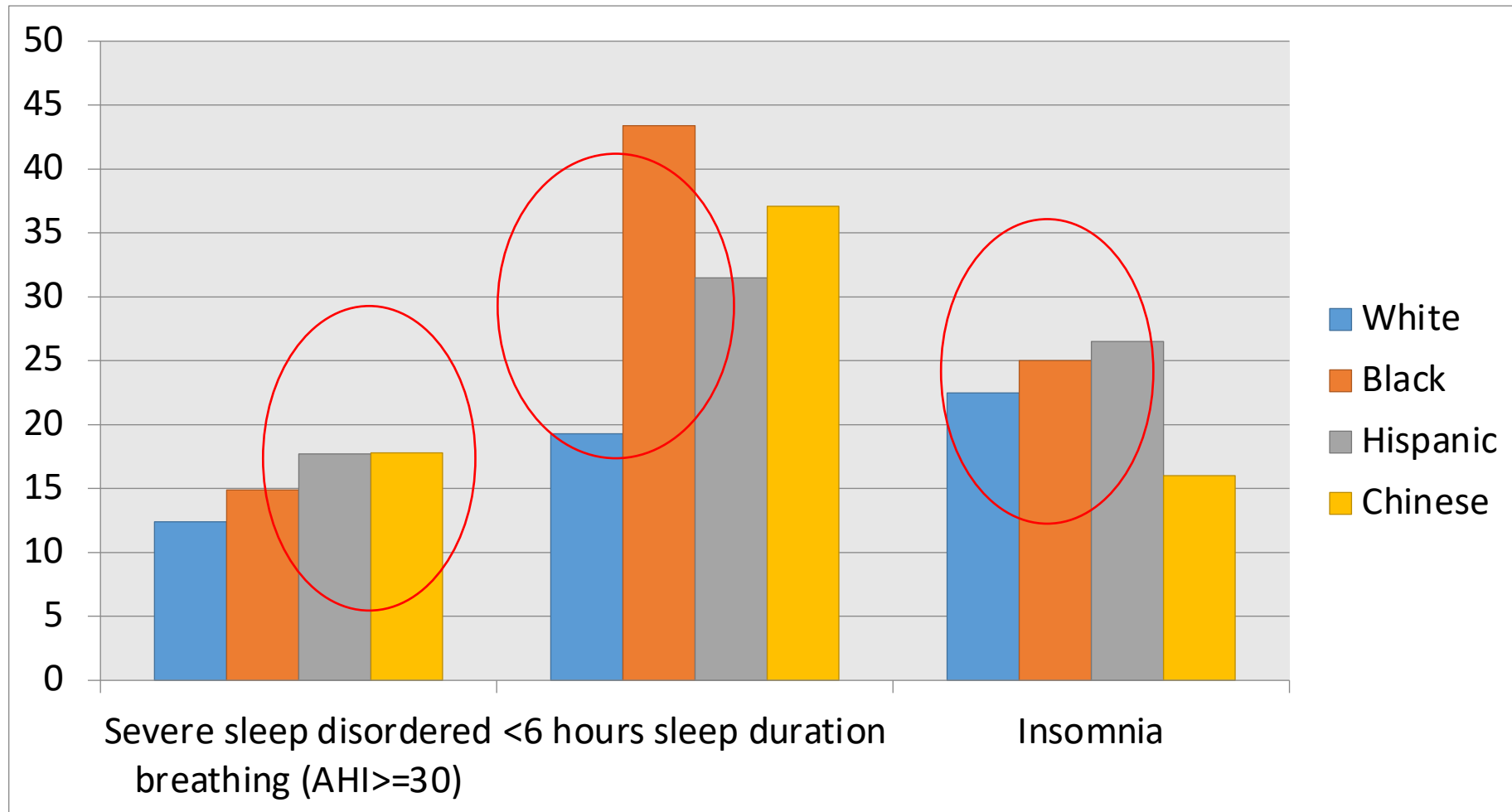
	Sleep duration	Sleep quality	Sleepiness	Sleep complaints
American Indian and Alaska Native	↑ ⁴⁵	IE	IE	IE
Asian	↓ ^{22,26,37,49}	↓ ^{22,28}	↓ ²²	↑ ²⁸
Black	↓ ^{22,32,37,43,53}	↓ ^{22,33,36,44}	↑ ²²	MR ^{22,57}
Hispanic/Latino	↓ ^{22,26,32,37,43,64}	↓ MR ^{22,44,61}	MR ²²	↓ ^{22,26,29,44,64}
Native Hawaiian and Pacific Islander	↓ ^{66,114}	IE	IE	↑ IE ⁶⁶

Note: The direction of the arrow refers to the direction of the association (e.g. lower or higher).

Abbreviations: IE-insufficient evidence; MR-mixed results.

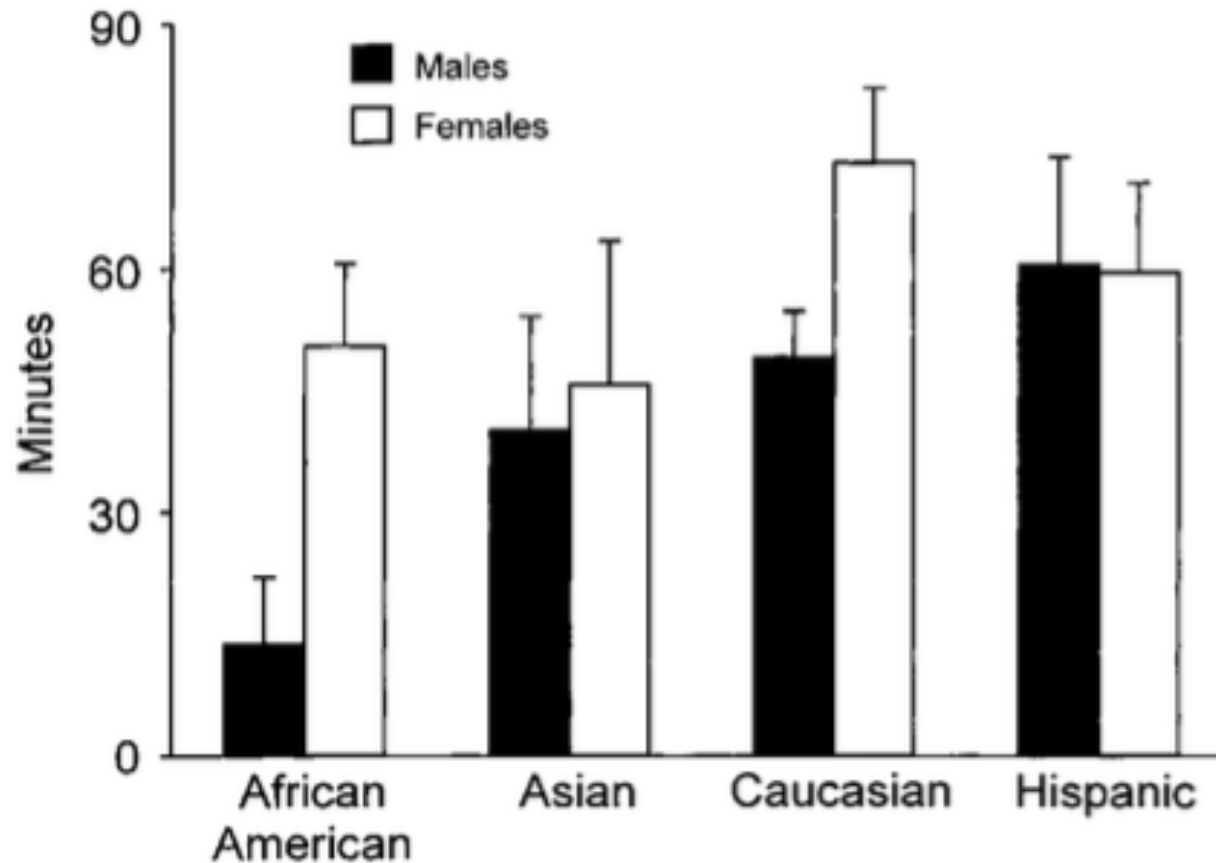
Johnson, Jackson, Williams, & Alcántara, 2019, Nature and Science of Sleep

Racial/Ethnic Differences in Sleep Disturbances in MESA (N=2,230)



Source: Chen et al., 2014, SLEEP

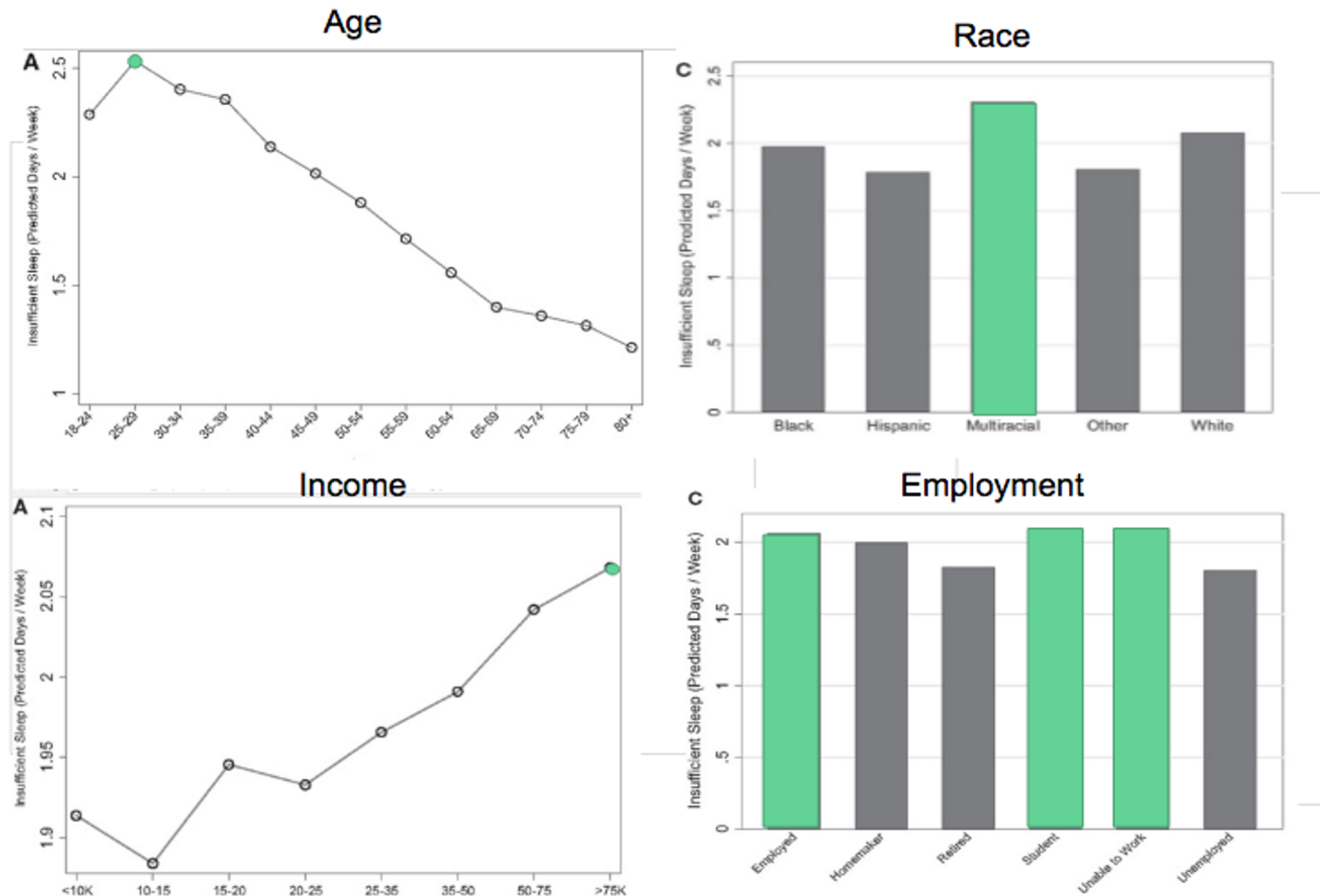
Sleep Architecture



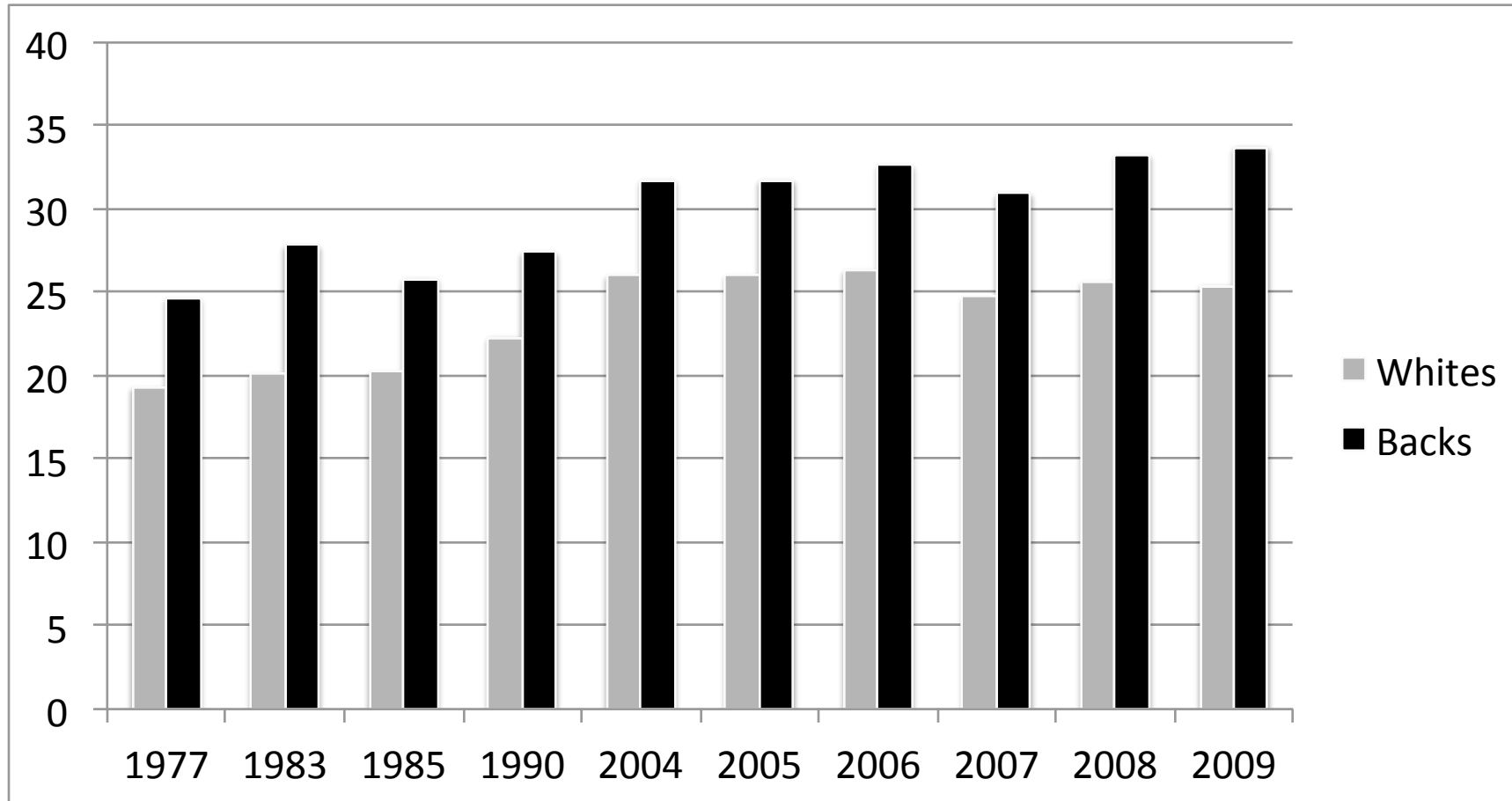
Stage 4 sleep
(Mean)

Rao et al., 1999, Jnl of Psychiatric Research

How many days have you felt you did not get enough rest or sleep?



Short Sleep Duration Over Three Decades



Jean-Louis, et al. 2015, BMC Public Health

Social Determinants

Multivariate-adjusted associations of insufficient sleep and socio-demographic, medical, health risk, and social and contextual factors.^a

Variables	OR ^b	95% CI	p
Race/ethnicity, black	1.37	1.37–1.38	.001
Working, >40 hours per week	1.65	1.65–1.66	.001
Caregiving	1.50	1.49–1.51	.001
No social and emotional support	1.24	1.23–1.25	.001
Current smoker	1.14	1.13–1.15	.001
Lack of physical activity	1.20	1.19–1.21	.001
History of heart disease	1.26	1.25–1.28	.001
General health	1.20	1.19–1.21	.001

Williams et al. 2016. Sleep Medicine 2016

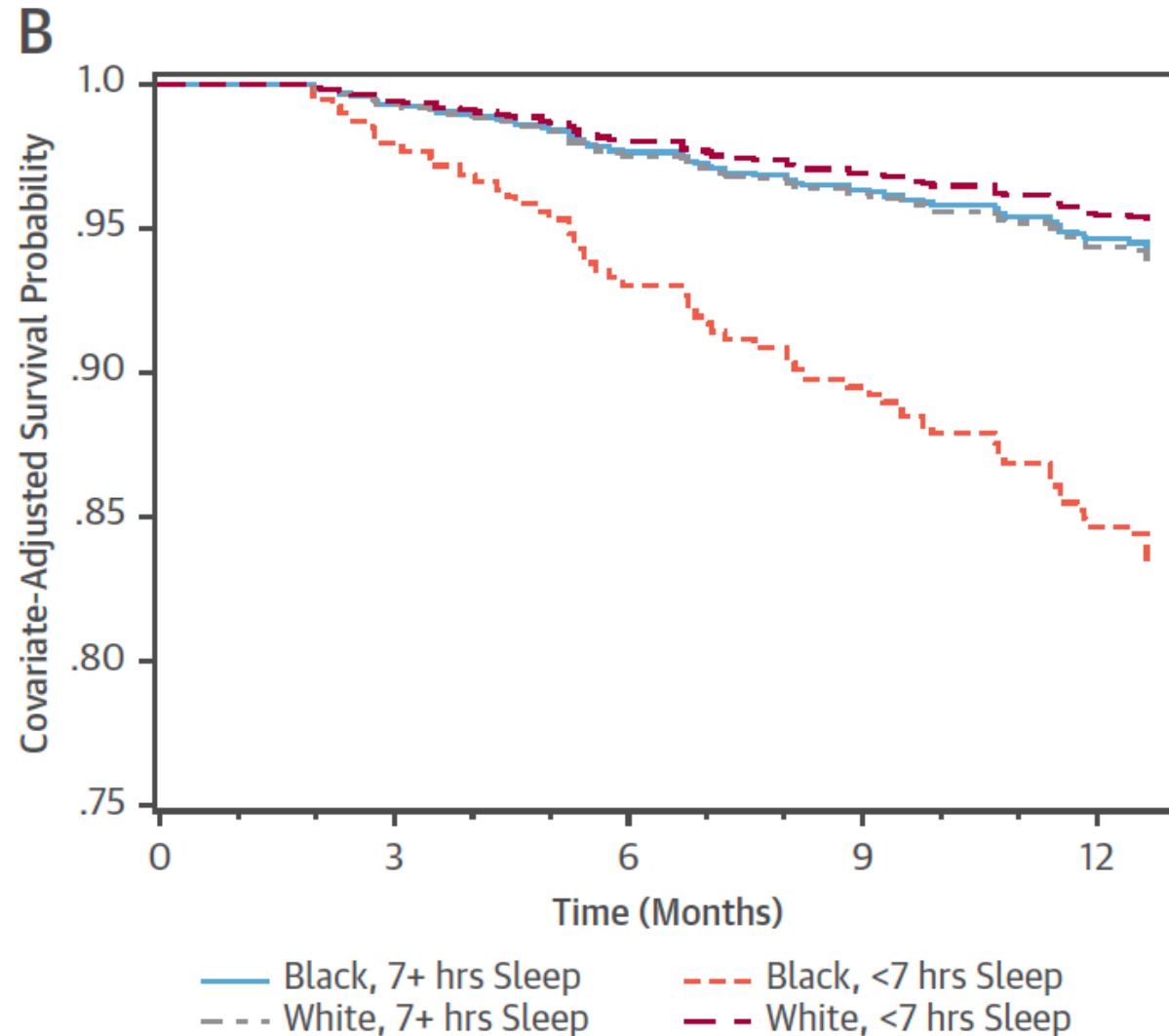
Health Disparities and Sleep in the USA

- ❑ Racial/ethnic and socioeconomic disparities in cardiovascular health risk behaviors and disease are well established.
- ❑ Sleep may be a mechanism through which cardiovascular health disparities arise.

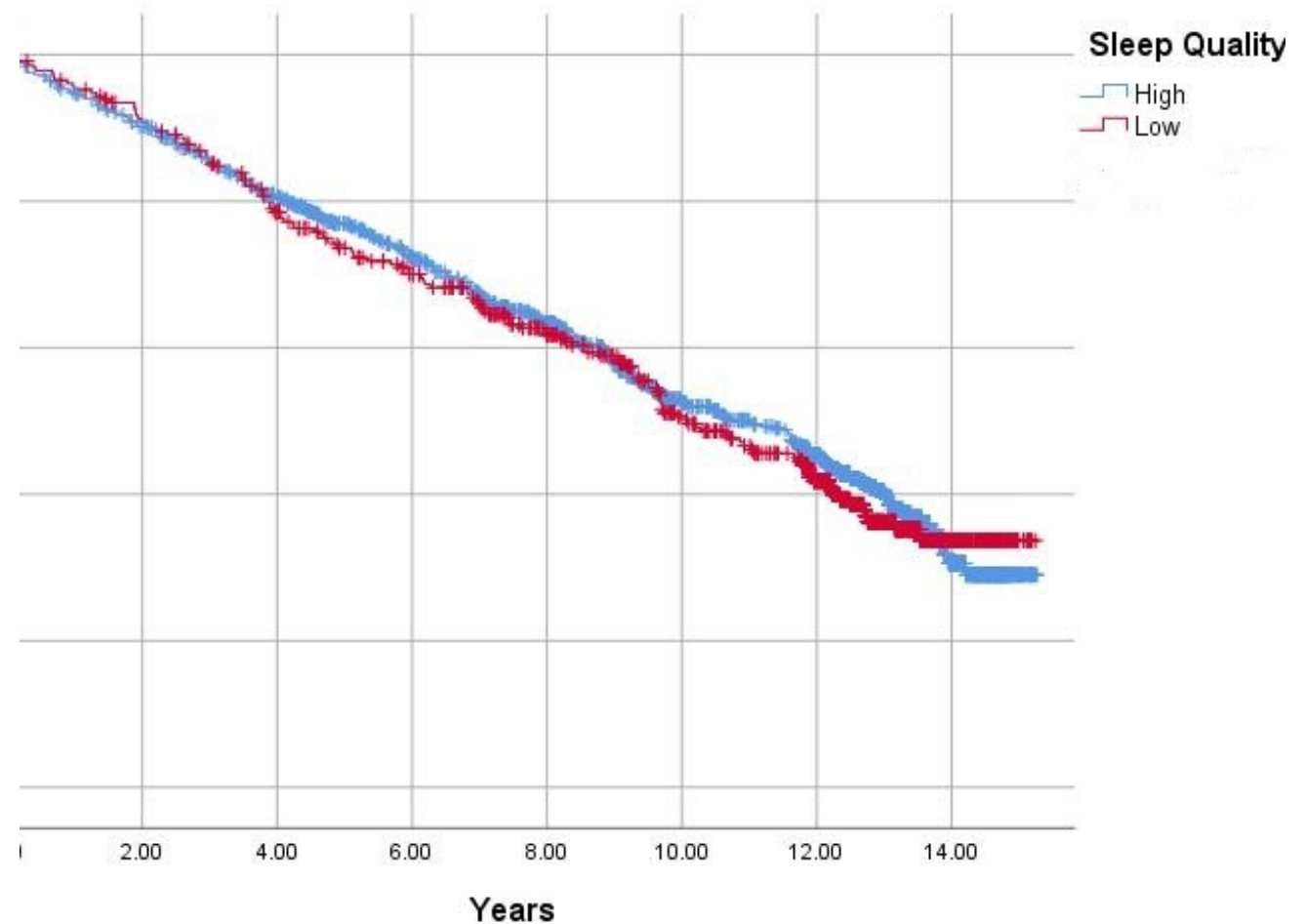
Source: Braveman et al., 2011; Williams, 2005; Jackson et al., 2015; St. Onge et al., 2016

07/16/2020

Covariate-adjusted predicted survival curves for time to MACE $p < 0.001$ by log-rank test.



Jackson Heart Study, Sleep Quality and CVD



Butler et al. 2020, Under Review, Sleep Medicine

Structural Inequalities in COVID-19 Pandemic

Frontline Workers

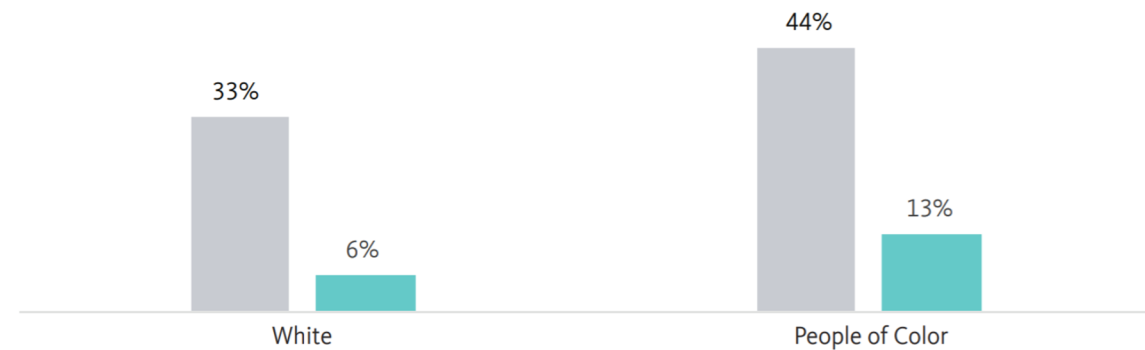


Photo credit: Unsplash

People of color are more likely to be frontline or essential workers and more likely to be uninsured.

Frontline and essential workers and the uninsured population by race/ethnicity, United States

- Frontline/ essential workers (employed population)
- Uninsured population (total population)



Sources: U.S. Census Bureau, 2018 American Community Survey 1-Year Estimates.

Notes: Worker data is for the civilian employed population 16 years and over. Uninsured data is for the total population. Frontline and essential occupations include service occupations (e.g., health-care support, protective services, food preparation, building and ground cleaning and maintenance); production, transportation, and material moving occupations; and health-care practitioners and technical occupations. The racial/ethnic category of White pertains to non-Hispanic White.

Frontline Workers

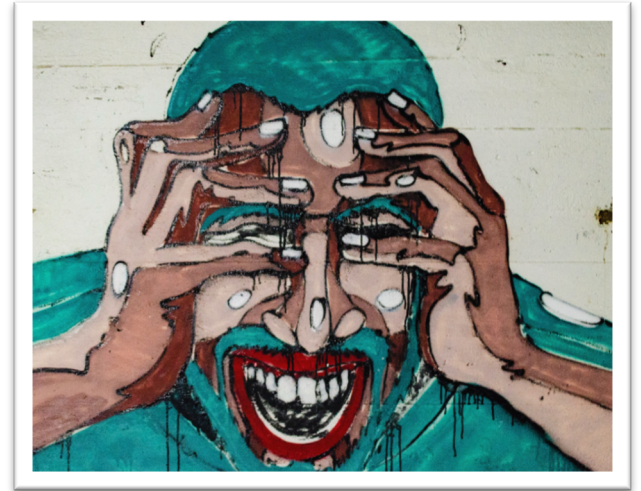
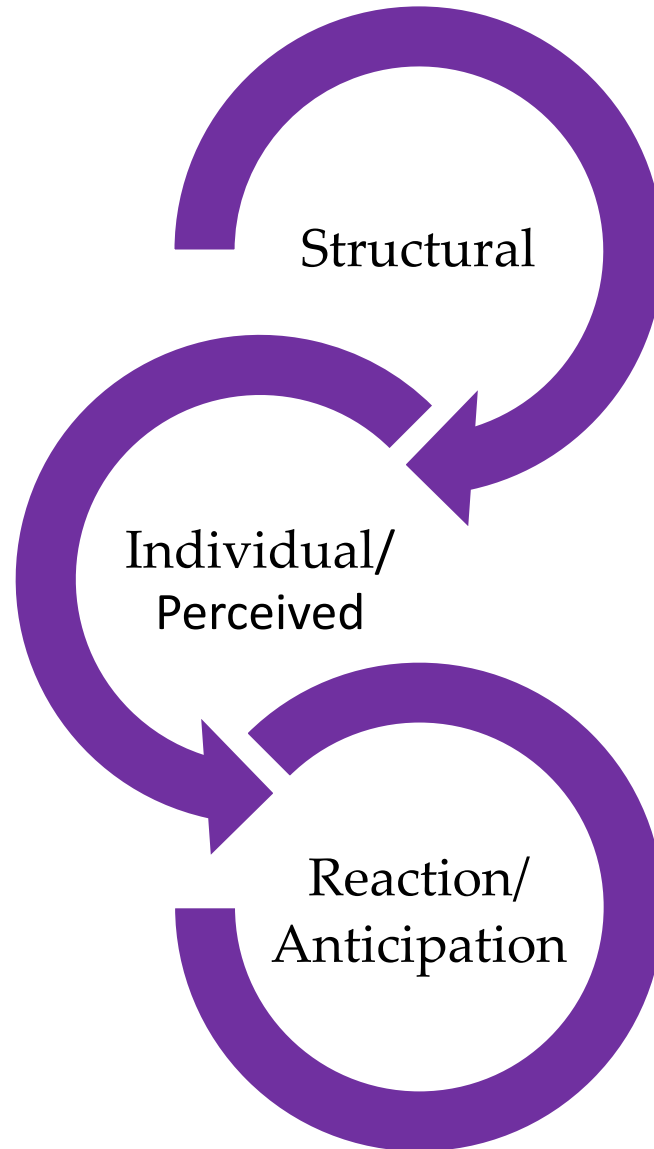
- ❑ CDC Study
- ❑ COVID-19 cases among U.S. workers in 115 meat and poultry processing facilities.
- ❑ Among approximately 130,000 workers at these facilities, 4,913 cases and 20 deaths occurred.
- ❑ Factors potentially affecting risk for infection include difficulties with workplace physical distancing and hygiene and crowded living and transportation conditions.

Financial Stressors

- ❑ 61% of Latinos report they or someone in their household experienced a job or wage loss
- ❑ Tax-paying Immigrants ineligible for federal stimulus aid
- ❑ Increased in likelihood of running out of money – African Americans & Latinos

COVID-19, Racism, & Community Trauma

Racism & COVID

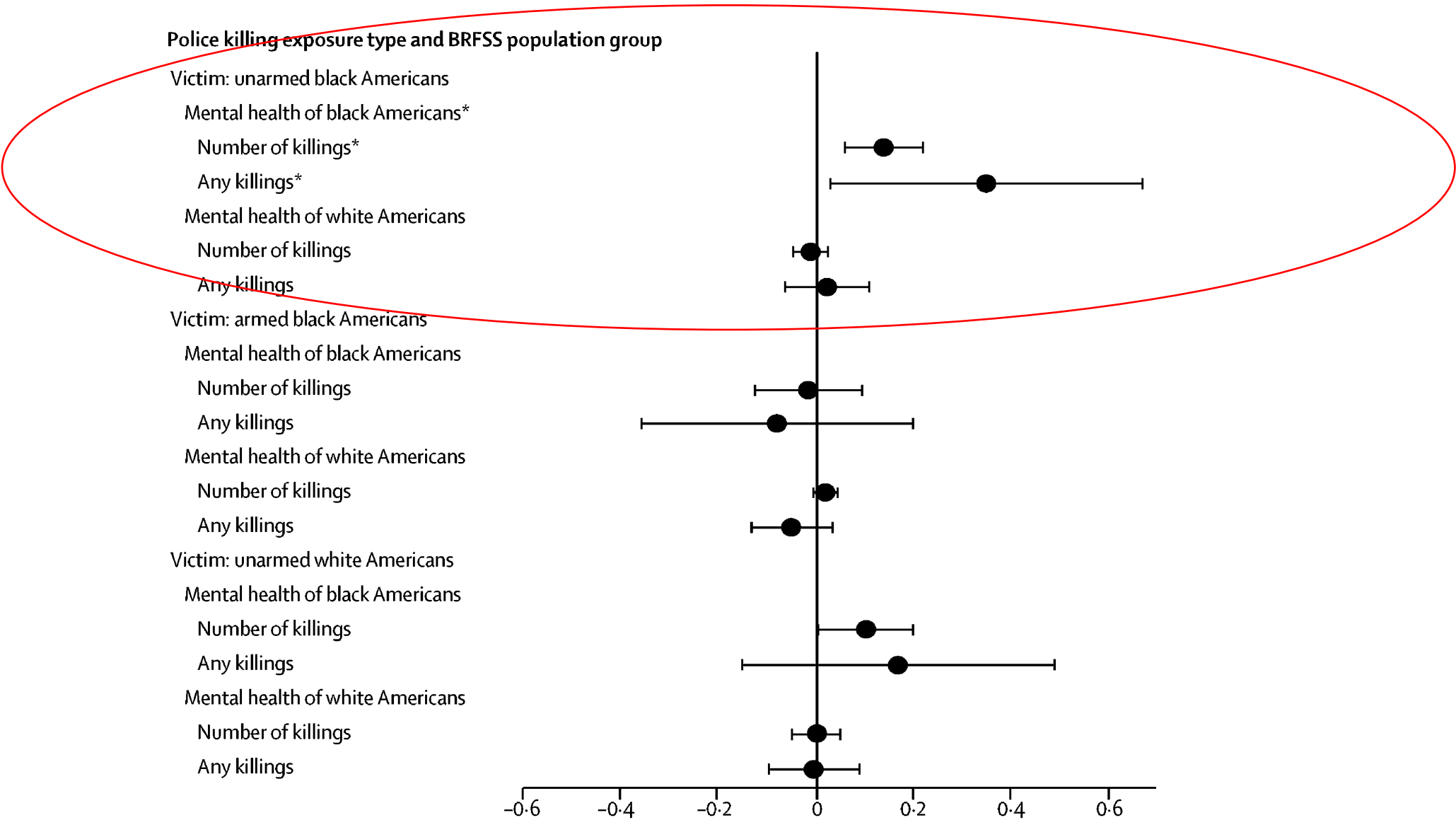


Trauma & COVID

Individual trauma results from an event, series of events, or set of circumstances that is experienced by an individual as physically or emotionally harmful or life threatening and that has lasting adverse effects on the individual's functioning and mental, physical, social, emotional, or spiritual well-being.

SAMHSA's Trauma and Justice Strategic Initiative

Figure 2. Changes in poor mental health days associated with exposure to police killings by race of police killing victim, whether the victim was armed, and race of the BRFSS respondent N=38993



Stress and Sleep Health

Psychosocial Stress and Sleep

- ❑ Experimental and field research shows psychosocial stress is associated with multiple dimensions of sleep health.
- ❑ Black, indigenous, and people of color (BIPOC) face specific stressors associated with their marginalized status.

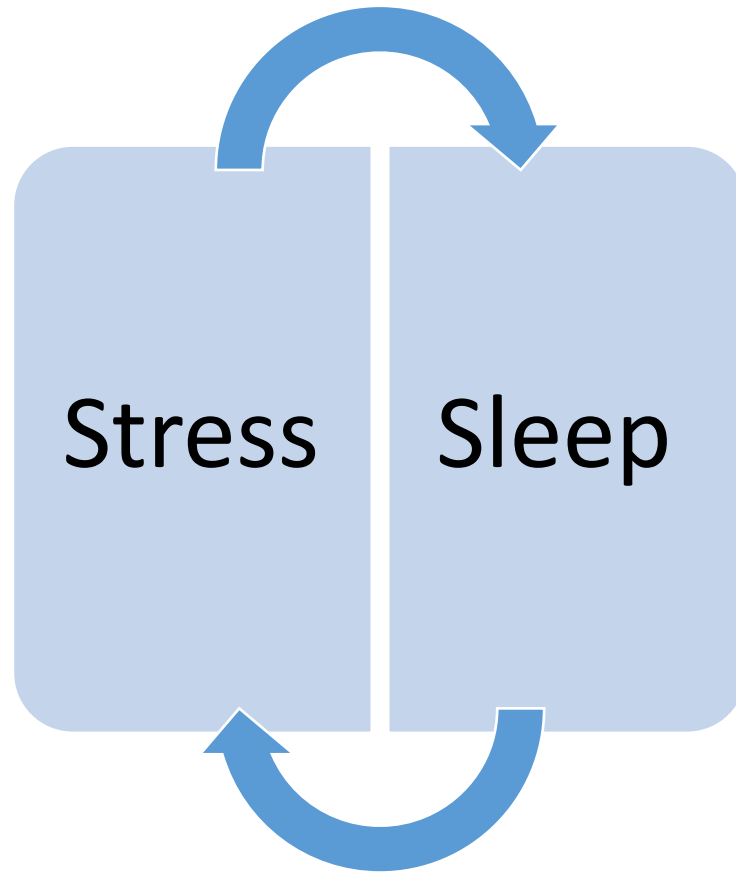
Sources: Hall et al., 2015; Akerstedt, et al., 2007; Hall et al., 2004; Kim & Dimsdale, 2007; Slopen et al., 2016; Alcantara et al., 2017

Sociocultural Stressors and Sleep

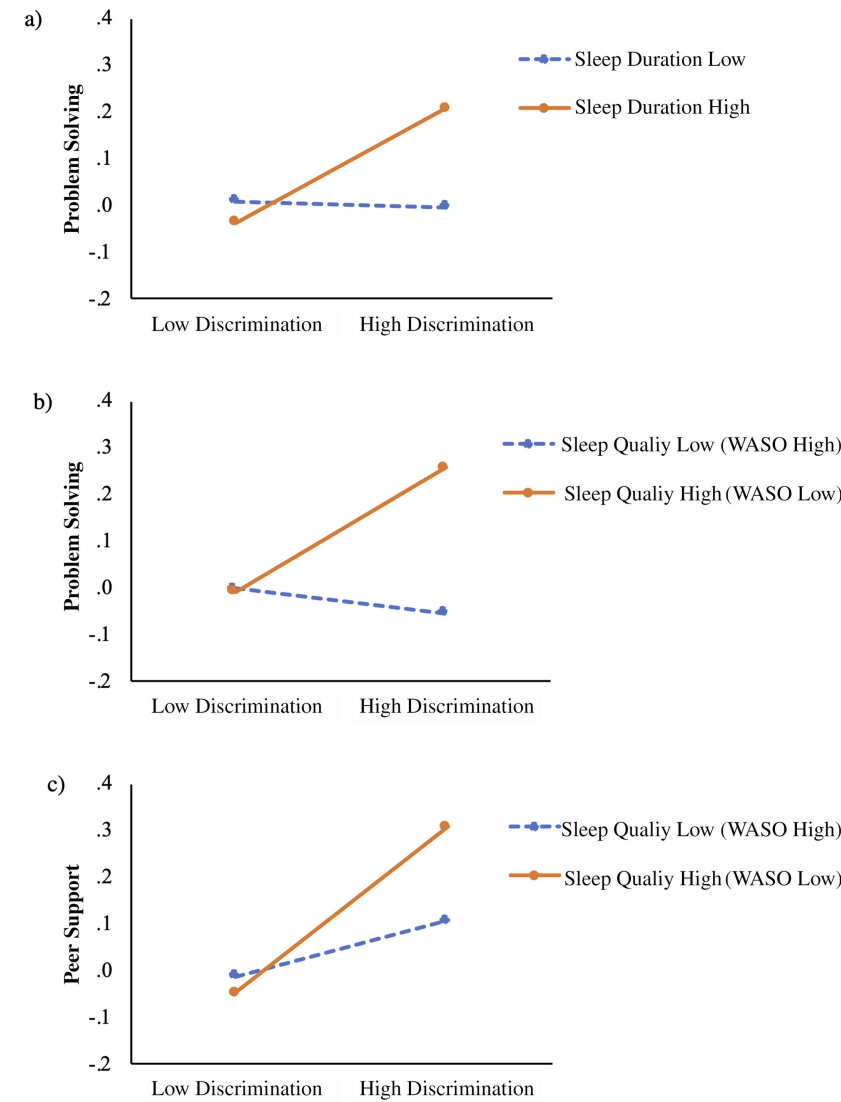
- ❑ Exposure to ethnic discrimination is strongly associated with self-reported sleep in racial/ethnic minorities.
- ❑ Acculturation stress is a consistent correlate of insomnia in Latinx adults.

Sources: Slopen et al., 2016; Alcantara et al., 2017, SSM-Population Health; Alcantara et al., 2019, SLEEP

Bidirectional Relationships



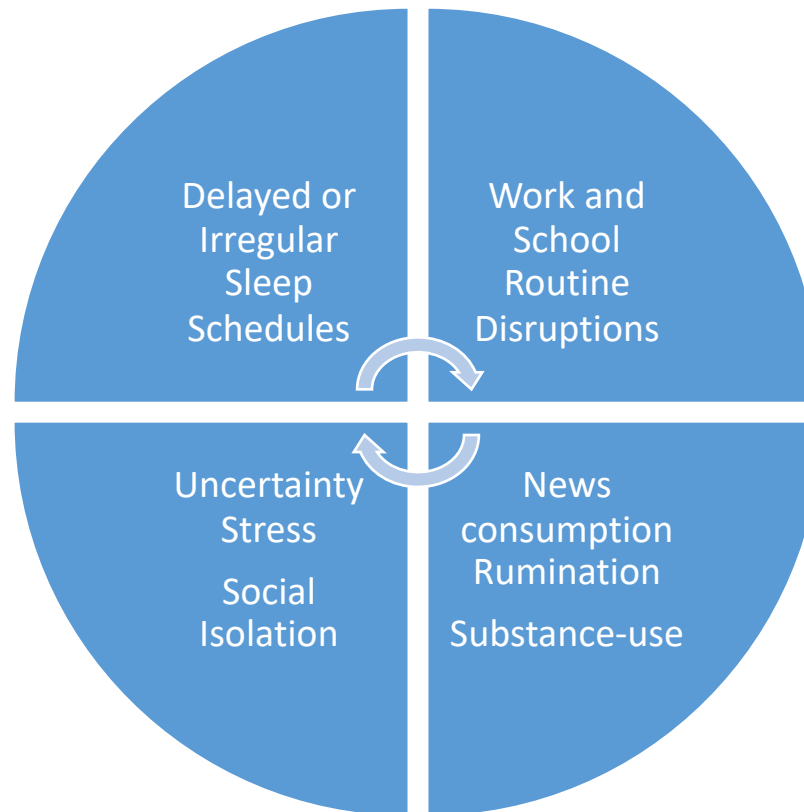
Sleep Facilitates Coping: Moderated Mediation of Daily Sleep, Ethnic/Racial Discrimination, Stress Responses, and Adolescent Well-Being



Child Development, First published: 28 October 2019, DOI: (10.1111/cdev.13324)

Source: Wang & Yip, 2019, *Child Development*

COVID-19 & Sleep (“COVID-somnia”)



Crew, Baron, Grandner et al. 2020, *Behavioral Sleep Medicine*;
https://journals.lww.com/neurotodayonline/Fulltext/2020/07090/Sleep_Neurologists_Call_It.1.aspx

COVID-19 Pandemic and Sleep

- ❑ 94% experienced subsequent insomnia symptoms
- ❑ 43% having nightmares
- ❑ There were significant positive correlations between sleep disturbances and peritraumatic distress ($r=0.41$, $p<0.001$), PTSD ($r=0.76$, $p<0.001$), symptoms of depression ($r=0.32$, $p<0.001$)



❑ Blanc et al, SLEEP 2019

Psychological Distress in NYC Healthcare Workers during COVID-19 Pandemic (April 9-24, 2020)

- ❑ 71% had insomnia symptoms
- ❑ 65% felt lonely
- ❑ 57% had Acute Stress
- ❑ 48% had depressive symptoms
- ❑ 33% had anxiety

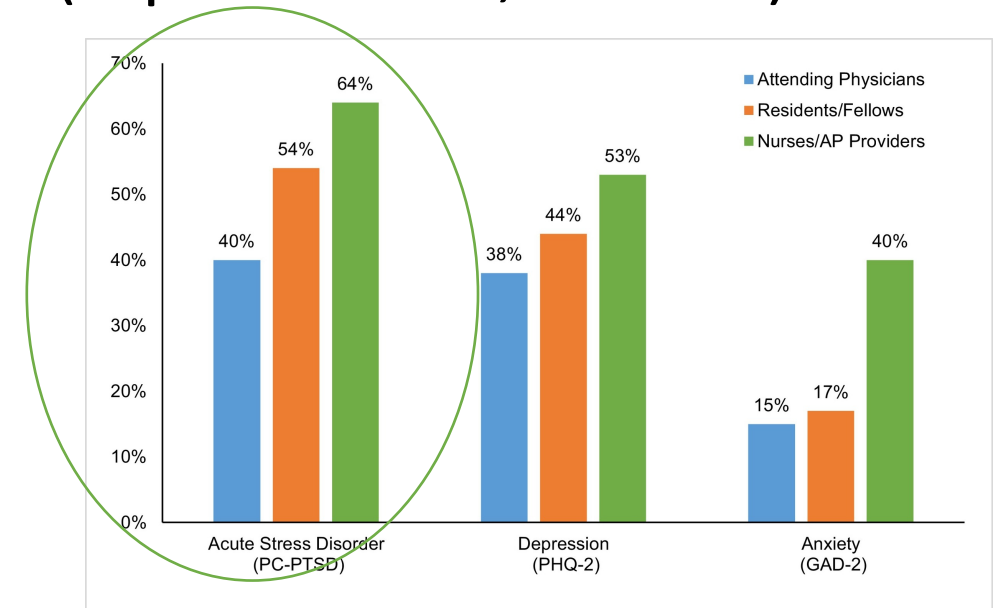
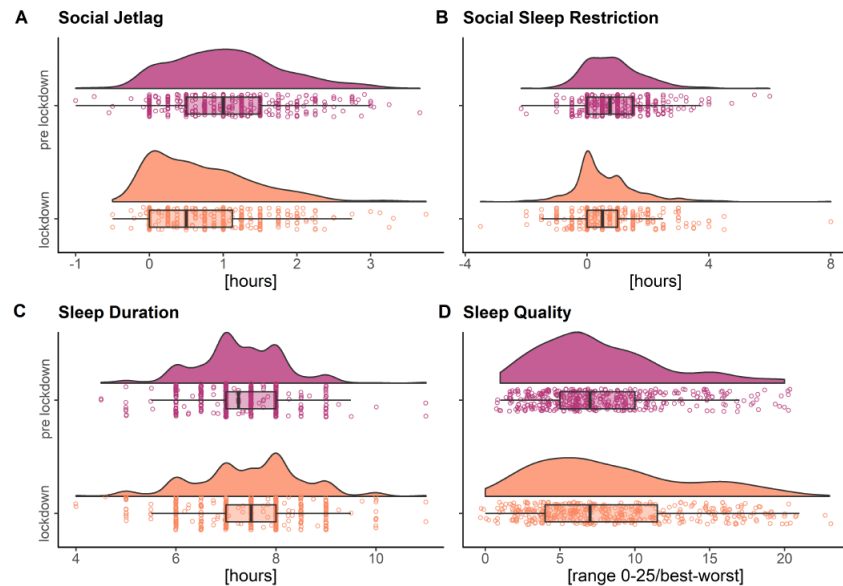


Fig. 2. Percentage of participants who screened positive for acute stress, depressive symptoms, and anxiety by clinical role.

Effects of the COVID-19 lockdown on human sleep and rest-activity rhythms

- Three European countries (Austria, Germany, Switzerland)
- N=435; median age 26-35
- Improved individual sleep-wake timing and more sleep
- And decreased quality



Blume et al., June 2020, Current Biology

What Is Insomnia?

- ❑ People with **insomnia** have trouble falling asleep, staying asleep, or both.
- ❑ They may get too little sleep or do not have good quality sleep that makes it hard to function during the daytime.

Who Suffers from Insomnia?

☐ We don't know exactly why some people have insomnia and others don't, but your chances of getting insomnia increase if you:

- ☐ Are female
- ☐ Older age (55 and older)
- ☐ Have another health problem like diabetes or depression
- ☐ Have lower income
- ☐ Have another sleep problem like sleep apnea
- ☐ Something bad has happened in your life like the death of a loved one

Evidence-Based Behavioral Strategies to Improve Your Sleep

Treatment Options for Sleep Problems



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Medications



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Behavioral



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Lifestyle

Effective Behavioral Interventions

- ❑ Behavioral therapies
- ❑ Sleep restriction, stimulus control, sleep hygiene
- ❑ Mindfulness based stress reduction
- ❑ Motivational enhancement with CPAP
- ❑ Cognitive behavioral therapy for insomnia (CBT-I)

How does Behavioral Therapy work?

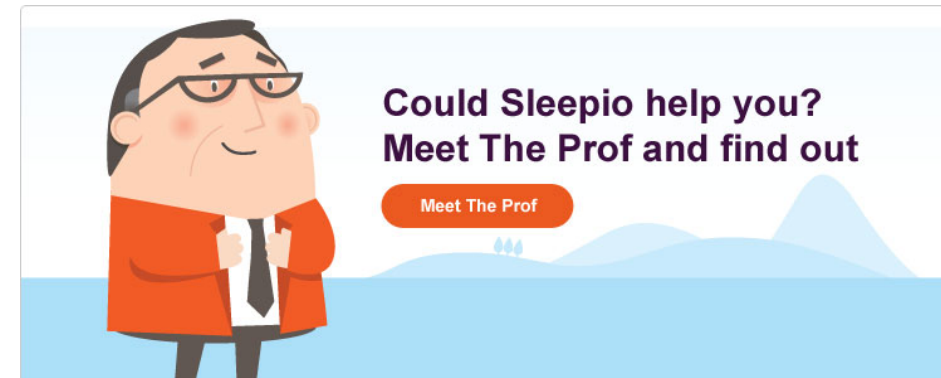
- ☐ You can do behavioral therapy:
 - ☐ On your own by reading self-help books
 - ☐ One-on-one with the insomnia expert
 - ☐ In a group with other people like you
 - ☐ Through the Internet with a Virtual Coach
 - ☐ Self-guided with a digital therapeutic



Digital Therapeutics for Insomnia



CBT-i Coach
By US Department of V
Open iTunes to buy and dowi



How does Behavioral Therapy work?

Behavioral therapy works by figuring out what is causing the insomnia and learning about your current sleep habits. The insomnia expert talks to you about ways to improve your sleep. You will have to do work in between your appointments. Here are a few things to expect if you choose behavioral therapy:

- You will have to go to bed and wake up the same time everyday
- You will have to get out of bed after 20 minutes if you can't sleep
- You can't take naps
- You have to keep a sleep diary
- You have to meet with the insomnia expert 4-6 times for about 45 minutes to talk about your sleep habits and thoughts about sleep



How does Behavioral Therapy work?

These methods all work well but each will depend on your preferences. Below are the pros and cons of behavioral therapy.

Pros	Cons
Your sleep will get better	It takes a lot of time
Your symptoms will go away	May take a while before your sleep gets better
You will have improved sleep quality	Your health insurance plan may not pay for treatment

Behavioral Therapy

- 70-80% of subjects report
- 40% of subjects maintain clinical gains at 12 month
- Clinical gains pertain to LS and WASO *not* TST
- Cognitive Behavioral Therapy
 - Standard treatment duration 6-8 weekly 1-hr sessions
 - Sleep Restriction
 - Cognitive restructuring strategies
 - Stimulus control
 - Relaxation techniques
 - Educational sleep hygiene

ACP Recommends Cognitive Behavioral Therapy as Initial Treatment for Chronic Insomnia

Only 1 RCT included sufficient enrollment of AA/Black and HL

Values Clarification Exercise

Below are a list of questions to help you figure out what is most important to you in choosing the right treatment. Think about what matters most to you in this decision. Please answer the following questions on a scale of 1 to 10 with 1 being not at all important and 10 being extremely important.

1. It is important for me to get relief right away
2. It is important for me not to have side effects like headaches
3. It is important for me not to become dependent on medications
4. It is important for my symptoms not to come back
5. It is important for me to have support from an expert or coach
6. It is important for my treatment to be free or affordable



Sleep Hygiene 101

Lifestyle Changes for Better Sleep (1)



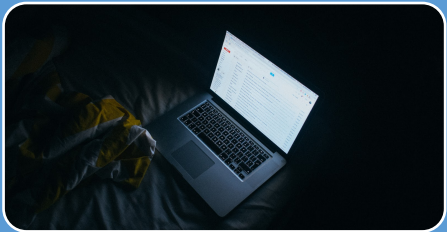
Keep **you/your family** sleep schedule the same

- This means go to bed at the same time every night and wake up at the same time, even on weekends



Get plenty of bright light during the day

- The “master clock” in the brain gets its cues from sunlight to determine when we are asleep and when we are awake



Avoid bright light close to bedtime

- This includes light from your computer, tablet, television, and mobile phone

Lifestyle Changes for Better Sleep (2)



Avoid caffeine close to bedtime

- This includes from coffee, tea, soda, or energy drinks. Caffeine can make it hard to sleep for 6 hours or longer after drinking it



Don't smoke

- Nicotine (the drug in cigarettes) can make it hard to fall asleep



Avoid alcohol near bedtime

- More than 1-2 drinks close to bedtime may make it harder to stay asleep

Lifestyle Changes for Better Sleep (3)



Keep your sleeping room temperature cool

Between 60-70 degrees. If it's too cold wear warm socks and use extra blankets to keep warm. If it's too hot, wear lighter clothes and use a fan to cool off



Limit naps

If you take naps, only nap during the afternoon and keep the nap to 20 minutes or less. Too much napping could make it harder to fall asleep at night



Exercise!

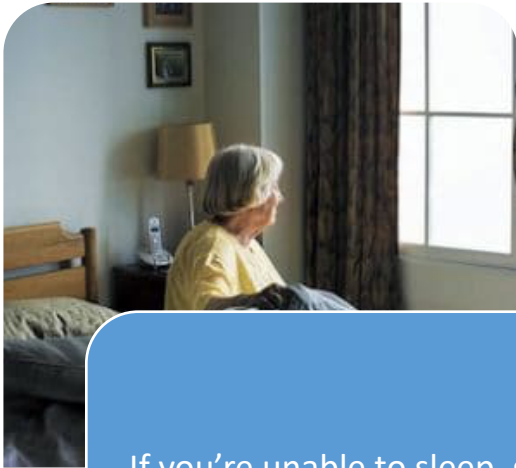
Stay as physically active as possible during the day



Keep your bed for sleep and sex only

Don't watch TV or do other activities in bed that may make it harder to sleep

Additional Sleep Hygiene Tips



This

If you're unable to sleep, get up and out of bed. Try going into another room until you feel tired again before returning to sleep. Repeat this process if necessary.



Photo by
Q

Establish a buffer zone. Set aside some quiet time before bed to spend doing enjoyable activities that will help you to feel calm and relaxed.



Try not to worry while in bed. If you are planning, feeling anxious or having racing thoughts, get up and out of bed until these mental activities are no longer preventing you from falling asleep.

The Most Important Tip

“Don’t try too hard to sleep. *Instead, let sleep unfold.*”

Strategies for Managing Acute Onset Insomnia during COVID-19

- ❑ DETECT (track sleep with a sleep diary)
- ❑ DETACH (avoid bedroom activities; get out of bed when not sleeping)
- ❑ DISTRACT (practice cognitive control and imagery distraction techniques).
- ❑ Assess for maladaptive coping strategies (e.g., alcohol).
- ❑ Enhance resources for coping with recurrent daytime stressors

Source: Ellis et al., 2015; Crew, Baron, Grandner et al. 2020, *Behavioral Sleep Medicine*

Sleep Recommendations during COVID-19

- ❑ Establish exercise/meals/socialization routines
- ❑ Practice deep breathing after waking from nightmares
- ❑ Limit triggers (e.g, news consumption)
- ❑ For parents with children/adolescents– prioritize activities that build sleep need (outdoor activity), and discourage sleep disruption (screen time, napping)
- ❑ Prioritize bright light exposure in the day (30-60 minutes after waking), avoid bright light at night (screen time)

Concluding Questions

1. Which of these behavioral strategies or lifestyle changes for better sleep are you more likely to implement tonight?
Why or Why not?
2. How can you frame your sleep as healing? As radical self care?

Questions



Helpful Resources

- ❑ <https://www.sleepfoundation.org/>
- ❑ <https://behavioralsleep.org/>
- ❑ <https://www.naminycmetro.org/>
- ❑ <https://www.med.upenn.edu/bsm/>
- ❑ <https://sleep-mind-health.socialwork.columbia.edu/content/sleep-health-community-resources>
- ❑ <https://aasm.org/clinical-resources/patient-info/>

Learning Objectives

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2. To understand the impact of stress, discrimination, and trauma on sleep health in a COVID-19 and racism pandemic.
3. To understand evidence-based behavioral strategies to improve sleep health.

Thank You!

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<https://sleep-mind-health.socialwork.columbia.edu/>

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