Sleep and Circadian Problems during the COVID-19 pandemic

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Outline of Presentation

• Context: What do we know about insomnia, sleep loss, and potential impact of chronic sleep loss on mental and physical health (pre-pandemic)?

• What have we learned about the impact of COVID-19 pandemic on sleep (insomnia), circadian problems, dreams/nightmares, and psychological symptoms?

• The International collaborative COVID-19 sleep study (ICOSS)
Introduction

- The COVID-19 pandemic has produced unprecedented changes in our lives, with major shifts in our social, work, and leisure activities.
- Many have experienced significant stress about health and the fear of infection, about losing jobs and financial problems, family obligations and home-schooling, and about the uncertainty of the future.
- The COVID-19 pandemic has also produced major changes in sleep, which is essential at all times, but more so during a worldwide health crisis such as the COVID-19 pandemic.
Introduction

• Adequate sleep quality and duration are essential to both physical and mental. Sleep loss and disrupted sleep increase risks for mental health problems (depression) and physical illness, and may lower immune functions in already predisposed individuals.

• Sleep is therefore particularly important during a crisis such as the COVID-19 pandemic, to protect oneself from infection and to cope more adaptively with the stress produced by the pandemic.

• Sleep-wake cycles are regulated by homeostatic and circadian processes. Along with stress, confinement, social isolation, flexible work schedules, reduced daylight exposure, decreased zeitgebers may all increase the vulnerability to develop sleep and circadian problems during a major crisis such as the COVID-19 pandemic.
Burden of Insomnia

Mental Health
- Depression ++
- Anxiety ++
- Suicidality +
- Suicide ??

Physical Health
- Hypertension ++
- Infarct ++, Mortality ??

Occupational Health
- Absenteism /Presenteism
- Productivity

Public Safety
- Road Accidents
- Work-related accidents

Prevalence of sleep problems (all measures)
Meta-analysis of 44 surveys (18 from China), N = 54,231 participants

- **Overall prevalence:** 35.7% (95% CI, 29.4-42.4)
- **General population:** 32.3% (95% CI, 25.3-40.2); K = 26; n = 46,751;
- **Health-care workers:** 36% (95% CI, 21.2-54.2); K = 11, n = 4,854;
- **COVID-19 patients:** 74.8% (95% CI, 28.7-95.6); K = 3; n = 1884.
- **Lower prevalence in China (27%) relative to Italy (55%), France (51%), and Germany (39%).

Prevalence of sleep problems (PSQI)

Cases defined by Pittsburgh Sleep Quality Index; 18 studies, n = 20,570

- **General population:** 37.9% (95% CI, 25.2-52.4); K = 9; n = 16,516;
- **Health-care workers:** 39.7% (95% CI, 21.2-61.6); K = 8, n = 4,854;
- **Mean PSQI score of 7.1 across all participants;** K = 15; n = 9230; 6.0 gen pop vs. 7.7 health-care workers

The International COVID-19 Study (ICOSS)

- Initiative led by Markku Partinen (Finland), Bjorn Bjorvatn (Norway), Frances Cheung (Canada), Colin Espie (UK), Charles Morin (Canada), Thomas Penzel (Germany), with collaborators from other countries
- 13 participating countries from four continents (Europe, Asia, North America, South America)
- Developed a standardized survey (100 questions) using validated questionnaires: Basic Nordic Sleep Questionnaire, Insomnia Severity Index, STOP-Bang, PHQ-2, GAD-2, WHO-5, PTSD, Fatigue, RLS
- Translation of survey into national languages
- Online survey using RedCap, Qualtrics, and similar platforms
- Participants were solicited from the community thru media stories/social media
The International COVID-19 Study (ICOSS) Participants

- 22,151 respondents (64% women; mean age 41.8 y/o, range 18-95 y/o), 26.8% with college/university degree
- 42.2% reported having been in confinement, 55.9% having suffered financially, 3% (n = 739) infected with COVID-19
- Dates of survey completion: May thru August 2020
Types of Sleep and Daytime Problems

- Proportion of respondents endorsing symptoms at least 3 nights/days per week
- All symptoms endorsed by significantly more responders during compared to before pandemic
- Factors associated with symptoms: covid infection, confinement, financial problems

Partinen M, Holzinger B, Morin CM, et al. Increased sleep and daytime problems due to the COVID-19 pandemic: Results from a multinational harmonized questionnaire study. *Manuscript under review*
# Types of Sleep and Daytime Problems

## Distribution of responders

<table>
<thead>
<tr>
<th>All countries</th>
<th>Before pandemic (CI)</th>
<th>During pandemic (CI)</th>
<th>Improved</th>
<th>Unchanged</th>
<th>Worsened</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Poor sleep quality</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td>12.5% (11.8-13.2%)</td>
<td>28.2% (27.1-29.3%)*</td>
<td>5.2%</td>
<td>74.0%</td>
<td>20.8%</td>
</tr>
<tr>
<td><strong>Sleep onset problems</strong>&lt;sup&gt;2&lt;/sup&gt;</td>
<td>14.8% (13.9-15.7%)</td>
<td>27.9% (26.9-29.1%)*</td>
<td>4.4%</td>
<td>77.8%</td>
<td>17.8%</td>
</tr>
<tr>
<td><strong>Sleep maintenance problems</strong>&lt;sup&gt;3&lt;/sup&gt;</td>
<td>17.1% (16.2-18.1%)</td>
<td>27.9% (26.8-29.1%)*</td>
<td>4.2%</td>
<td>80.6%</td>
<td>15.2%</td>
</tr>
<tr>
<td><strong>Early morning awakening</strong>&lt;sup&gt;4&lt;/sup&gt;</td>
<td>13.6% (12.7-14.5%)</td>
<td>21.7% (20.6-22.7%)*</td>
<td>5.0%</td>
<td>81.8%</td>
<td>13.2%</td>
</tr>
<tr>
<td><strong>Nightmares</strong>&lt;sup&gt;5&lt;/sup&gt;</td>
<td>8.5% (7.7-9.4%)</td>
<td>15.0% (14.0-16.0%)*</td>
<td>2.9%</td>
<td>87.6%</td>
<td>9.5%</td>
</tr>
<tr>
<td><strong>Hypnotic use</strong>&lt;sup&gt;6&lt;/sup&gt;</td>
<td>7.8% (7.1-8.6%)</td>
<td>12.2% (11.2-13.2%)*</td>
<td>2.4%</td>
<td>90.7%</td>
<td>6.9%</td>
</tr>
<tr>
<td><strong>Fatigue</strong>&lt;sup&gt;7&lt;/sup&gt;</td>
<td>20.7% (19.8-21.7%)</td>
<td>29.9% (28.8-31.0%)*</td>
<td>8.0%</td>
<td>74.9%</td>
<td>17.1%</td>
</tr>
<tr>
<td><strong>Excessive sleepiness</strong>&lt;sup&gt;8&lt;/sup&gt;</td>
<td>18.5% (17.6-19.5%)</td>
<td>27.7% (26.6-28.9%)*</td>
<td>6.9%</td>
<td>76.9%</td>
<td>16.2%</td>
</tr>
</tbody>
</table>
Adjustments for three key factors: Covid infection, confinement, financial problems

<table>
<thead>
<tr>
<th></th>
<th>Poor sleep quality¹</th>
<th>SO problems²</th>
<th>SM problems³</th>
<th>EMA problems⁴</th>
<th>Nightmares⁵</th>
<th>Hypnotic use⁶</th>
<th>Fatigue⁷</th>
<th>Excessive sleepiness⁸</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COVID-19 infection</strong></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Yes (% (CI))</td>
<td>34-3 (29-2-39-9)</td>
<td>31-2 (26-2-36-7)</td>
<td>32-9 (27-6-38-6)</td>
<td>32-8 (27-6-38-5)</td>
<td>27-8 (22-8-33-5)</td>
<td>32-8 (23-4-34-3)</td>
<td>36-0 (30-7-41-6)</td>
<td>40-8 (35-2-46-6)</td>
</tr>
<tr>
<td>No (% (CI))</td>
<td>27-8 (26-7-28-9)</td>
<td>27-7 (26-6-28-8)</td>
<td>27-5 (26-4-28-7)</td>
<td>20-8 (19-7-21-8)</td>
<td>14-0 (13-0-15-0)</td>
<td>10-9 (10-0-11-9)</td>
<td>29-4 (28-3-30-6)</td>
<td>26-7 (25-6-27-8)</td>
</tr>
<tr>
<td>OR adjusted¹</td>
<td>1-62 (1-26-2-07)</td>
<td>1-35 (1-04-1-75)</td>
<td>1-42 (1-09-1-84)</td>
<td>1-93 (1-48-2-50)</td>
<td>1-64 (1-20-2-47)</td>
<td>2-05 (1-53-2-75)</td>
<td>1-43 (1-11-1-83)</td>
<td>1-92 (1-49-2-46)</td>
</tr>
<tr>
<td>OR adjusted-²</td>
<td>1-71 (1-31-2-22)</td>
<td>1-27 (0-94-1-72)</td>
<td>1-25 (0-89-1-77)</td>
<td>1-64 (1-20-2-47)</td>
<td>1-59 (1-09-2-33)</td>
<td>1-83 (1-15-2-91)</td>
<td>1-35 (1-01-1-79)</td>
<td>1-72 (1-29-2-30)</td>
</tr>
<tr>
<td>OR fully adjusted¹¹</td>
<td>1-55 (1-18-2-03)</td>
<td>1-11 (0-82-1-52)</td>
<td>1-12 (0-79-1-59)</td>
<td>1-48 (1-07-2-04)</td>
<td>1-19 (0-80-1-76)</td>
<td>1-44 (0-88-2-35)</td>
<td>1-20 (0-89-1-61)</td>
<td>1-51 (1-13-2-02)</td>
</tr>
<tr>
<td><strong>Confinement</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Yes (% (CI))</td>
<td>30-3 (28-8-31-8)</td>
<td>31-9 (30-4-33-4)</td>
<td>29-6 (28-1-31-2)</td>
<td>23-2 (21-8-24-7)</td>
<td>17-4 (16-1-18-8)</td>
<td>13-5 (12-3-14-9)</td>
<td>32-6 (31-0-34-2)</td>
<td>30-8 (29-3-32-4)</td>
</tr>
<tr>
<td>No (% (CI))</td>
<td>24-4 (22-9-25-8)</td>
<td>20-4 (18-9-21-9)</td>
<td>24-7 (23-1-26-2)</td>
<td>18-8 (17-3-20-3)</td>
<td>10-8 (9-4-12-3)</td>
<td>10-0 (8-7-11-5)</td>
<td>24-8 (23-2-26-4)</td>
<td>22-0 (20-5-23-7)</td>
</tr>
<tr>
<td>OR adjusted¹</td>
<td>1-37 (1-22-1-53)</td>
<td>1-67 (1-47-1-88)</td>
<td>1-42 (1-25-1-60)</td>
<td>1-38 (1-20-1-59)</td>
<td>1-30 (1-12-1-53)</td>
<td>1-50 (1-26-2-04)</td>
<td>1-36 (1-20-1-53)</td>
<td>1-46 (1-29-1-65)</td>
</tr>
<tr>
<td>OR adjusted-²</td>
<td>1-37 (1-22-1-54)</td>
<td>1-35 (1-11-1-63)</td>
<td>1-30 (1-11-1-53)</td>
<td>1-30 (1-12-1-53)</td>
<td>1-30 (1-10-1-68)</td>
<td>1-30 (1-10-1-68)</td>
<td>1-35 (1-18-1-53)</td>
<td>1-24 (1-06-1-45)</td>
</tr>
<tr>
<td>OR fully adjusted¹¹</td>
<td>1-19 (1-02-1-37)</td>
<td>1-28 (1-09-1-50)</td>
<td>1-15 (0-97-1-36)</td>
<td>0-95 (0-80-1-13)</td>
<td>1-09 (0-84-1-43)</td>
<td>0-70 (0-53-0-92)</td>
<td>1-02 (0-87-1-18)</td>
<td>1-07 (0-91-1-25)</td>
</tr>
<tr>
<td><strong>Suffered financially</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Yes (% (CI))</td>
<td>33-7 (30-6-36-9)</td>
<td>34-3 (31-1-37-7)</td>
<td>33-6 (30-4-37-0)</td>
<td>31-1 (28-0-34-5)</td>
<td>25-0 (21-9-28-4)</td>
<td>22-3 (19-2-25-7)</td>
<td>37-8 (34-5-41-2)</td>
<td>36-2 (32-9-39-6)</td>
</tr>
<tr>
<td>No (% (CI))</td>
<td>27-3 (26-2-28-4)</td>
<td>26-7 (25-6-27-9)</td>
<td>26-8 (25-7-28-0)</td>
<td>19-9 (18-8-21-0)</td>
<td>13-0 (12-1-14-1)</td>
<td>10-3 (9-4-11-3)</td>
<td>28-4 (27-2-29-6)</td>
<td>26-2 (25-0-27-4)</td>
</tr>
<tr>
<td>OR adjusted¹</td>
<td>1-44 (1-23-1-69)</td>
<td>1-46 (1-24-1-73)</td>
<td>1-47 (1-25-1-73)</td>
<td>1-87 (1-57-2-23)</td>
<td>1-87 (1-57-2-23)</td>
<td>2-06 (1-68-2-53)</td>
<td>1-57 (1-34-1-84)</td>
<td>1-61 (1-37-1-90)</td>
</tr>
<tr>
<td>OR adjusted-²</td>
<td>1-45 (1-22-1-72)</td>
<td>1-40 (1-15-1-70)</td>
<td>1-36 (1-10-1-67)</td>
<td>1-72 (1-41-2-09)</td>
<td>1-72 (1-41-2-09)</td>
<td>1-68 (1-31-2-16)</td>
<td>1-47 (1-23-1-77)</td>
<td>1-56 (1-29-1-89)</td>
</tr>
<tr>
<td>OR fully adjusted²¹</td>
<td>1-38 (1-16-1-64)</td>
<td>1-36 (1-12-1-66)</td>
<td>1-32 (1-07-1-64)</td>
<td>1-67 (1-36-2-05)</td>
<td>1-67 (1-36-2-05)</td>
<td>1-67 (1-36-2-05)</td>
<td>1-44 (1-20-1-73)</td>
<td>1-50 (1-23-1-82)</td>
</tr>
</tbody>
</table>
## Insomnia, Anxiety, and Depression by Country

(N = 22,330, 13 countries, weighted data)

<table>
<thead>
<tr>
<th>Country</th>
<th>Insomnia Symptoms (ISI ≥10)</th>
<th>Probable Insomnia Dx (ISI ≥ 15)</th>
<th>Probable Anxiety Cases (GAD2 ≥ 3)</th>
<th>Probable Depression Cases (PHQ2 ≥ 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>30.3%</td>
<td>12.5%</td>
<td>21.2%</td>
<td>18.2%</td>
</tr>
<tr>
<td>Brazil</td>
<td>48.8%</td>
<td>25.4%</td>
<td>47.2%</td>
<td>38.0%</td>
</tr>
<tr>
<td>Canada</td>
<td>47.1%</td>
<td>26.3%</td>
<td>35.3%</td>
<td>28.1%</td>
</tr>
<tr>
<td>China, Jilin, H.K.</td>
<td>23.1%</td>
<td>8.0%</td>
<td>12.3%</td>
<td>14.1%</td>
</tr>
<tr>
<td>Finland</td>
<td>28.9%</td>
<td>13.6%</td>
<td>13.9%</td>
<td>12.8%</td>
</tr>
<tr>
<td>France</td>
<td>38.0%</td>
<td>19.0%</td>
<td>29.2%</td>
<td>19.1%</td>
</tr>
<tr>
<td>Italy</td>
<td>27.5%</td>
<td>8.2%</td>
<td>22.0%</td>
<td>17.1%</td>
</tr>
<tr>
<td>Japan</td>
<td>25.2%</td>
<td>7.9%</td>
<td>12.5%</td>
<td>11.7%</td>
</tr>
<tr>
<td>Norway</td>
<td>40.8%</td>
<td>22.2%</td>
<td>19.9%</td>
<td>23.4%</td>
</tr>
<tr>
<td>Poland</td>
<td>45.2%</td>
<td>24.4%</td>
<td>32.5%</td>
<td>25.6%</td>
</tr>
<tr>
<td>Sweden</td>
<td>32.2%</td>
<td>16.0%</td>
<td>19.9%</td>
<td>22.5%</td>
</tr>
<tr>
<td>UK</td>
<td>48.6%</td>
<td>25.6%</td>
<td>31.3%</td>
<td>28.3%</td>
</tr>
<tr>
<td>USA</td>
<td>59.8%</td>
<td>31.4%</td>
<td>51.3%</td>
<td>50.7%</td>
</tr>
<tr>
<td>Overall</td>
<td><strong>36.7%</strong></td>
<td><strong>17.4%</strong></td>
<td><strong>25.6%</strong></td>
<td><strong>23.1%</strong></td>
</tr>
</tbody>
</table>
Cases of Insomnia as a Function of Time since Start of Pandemic (weighted %, with SE)

% in 2018 (Canada) = 12.2%

% in 2018 (Canada) = 32.8%
Sample
- 1434 adults living in Province of Quebec, part of a larger Canadian cohort (N > 4000), who completed 10-year follow-up in 2018
- Solicited to complete an online survey; 611 responded, including 594 (64% women; mean age 47.3 y/o) with complete data

Measures
- Sleep/health survey, Insomnia Severity Index, Pittsburgh Sleep Quality Index, Multidimensional Fatigue Inventory, Perceived Stress Scale; State-Trait Anxiety Inventory, and the Beck Depression Inventory;

Mean interval between two assessments
- 27 months between baseline (2018) and follow-up (April-May 2020)

Prevalent, Incident, and Persistent Rates of Insomnia

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Good Sleepers</td>
<td>Insomnia Symptoms</td>
</tr>
<tr>
<td></td>
<td>N = 290</td>
<td>N = 191</td>
</tr>
<tr>
<td>Good Sleepers</td>
<td>N = 343</td>
<td>231 (67%)</td>
</tr>
<tr>
<td>Insomnia Symptoms</td>
<td>N = 151</td>
<td>46 (30%)</td>
</tr>
<tr>
<td>Insomnia Disorder</td>
<td>N = 100</td>
<td>13 (13%)</td>
</tr>
</tbody>
</table>

Prevalence = 42.2%, 52.9%  Incidence Rate = 32.5%  Persistence Rate = 76.5%

# Changes in Sleep Schedules during Pandemic

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2020</th>
<th>( p ) value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bedtime</td>
<td>22:38</td>
<td>22:50</td>
<td>***</td>
</tr>
<tr>
<td>Arising time</td>
<td>6:58</td>
<td>7:16</td>
<td>***</td>
</tr>
<tr>
<td>Sleep duration (hrs)</td>
<td>7:18</td>
<td>7:19</td>
<td>n.s.</td>
</tr>
<tr>
<td>Sleep efficiency (%)</td>
<td>88.9</td>
<td>81.6</td>
<td>***</td>
</tr>
<tr>
<td>Naps (frequency)</td>
<td>1.15</td>
<td>2.11</td>
<td>***</td>
</tr>
<tr>
<td>Use of sleep medication (%)</td>
<td>13.5</td>
<td>15.2</td>
<td>0.098</td>
</tr>
</tbody>
</table>

Note. ***\( p < 0.001 \)  n.s. = not significant

Changes in sleep schedule/habits since the beginning of the COVID-19 pandemic (N = 594)
Subgroup Profiles of Changes in Sleep Schedules and Behaviors

Cluster 1: Extended TIB; Cluster 2: Reduced TIB; Cluster 3: Delayed Sleep

Significant shift in sleep timing (bedtime and risetime) as a function of the lockdown and working status

Online survey with 1622 subjects, 72% F, mean age 34.1 y/o

Time in bed and Sleep latency as a function of the lockdown and working condition of participants

Moderators of Sleep Disturbances during COVID-19

- Stress and anxiety about health/fear of infection, financial hardship, job situation, home-schooling
- Increased alcohol and substance use
- Confinement, social isolation and depression
- Increased screen time
- Potential mechanisms: Loss of daily routines/zeitgebers, reduced daylight exposure, stress and cortisol
Multiple binary logistic regression model with dream recall frequency (high vs. low) as dependent variable

Dreams and Nightmares during COVID-19

• Major increase in dream reports during COVID-19, more than ever reported even after extraordinary events such as 9/11 terrorist attacks in 2001 and the 1989 San Francisco earthquake
  • 29% Americans recalled more dreams than usual
  • 37% of Finnish report pandemic dreams
  • Text mining indicate many words related to anxiety, anger, sadness; fear of infection, contamination, and cleanliness; social distancing; negative emotions more common among individuals with higher stress during the day
• Confinement has led to increased sleep duration (30-45 min) in many people; sleeping longer increase REM sleep and dreams (more vivid and emotional in the morning)
• Nightmares more common among frontline HCW and ICU patients
• COVID-19 dream surge may have been amplified in scope by the media

CORONOSOMNIA - Sleep and Circadian Problems during COVID-19 Pandemic

• Worsening of sleep quality
• Increase prevalence of insomnia
• Increase rates of «social jet lag»
• Opportunity for some people to «catch up» on sleep, due to more flexible work schedules and reduced time commuting to and from work
Key Points

- Sleep/insomnia problems very prevalent under normal circumstances; dramatic increase during COVID-19 pandemic
- Many contributing factors including stress, anxiety, depression, confinement, social isolation, reduced daylight exposure, decrease zeitgebers, etc
- Great opportunity for the sleep community to disseminate evidence-based intervention about sleep health
Changes in Clinically Meaningful Sleep Difficulties
5525 Canadian respondents (67% females, 55.6 ± 16.3 y/o)

- Occurrences of clinically meaningful sleep difficulties (PSQI increase > 3 points) significantly increased from 36% before the outbreak to 50.5% during (all ps < .001).
- Emergence of new sleep difficulties was independently associated with female sex, chronic illness, being employed, family responsibilities, higher stress levels, more alcohol use, and television exposure.

Sleep & Daily Rhythms during COVID-19

**Get up around the same time every day**
- Keep your wake time within 45 minutes
- Sleeping in will make it harder to fall asleep.

*Tip:* Motivate yourself to get up by scheduling something you want to do in the morning!

**Get light when you wake up and during the day**
- Morning light is one of the most important cues for our brain clock
  - Helps you feel more alert
  - Keep spaces active and bright (with light) during the day

*Tip:* Open the curtains! Step outside! Turn on bright lights!

**Have social interactions every day**
*Tip:* Schedule a call or video chat with a friend. Go for a walk around the block and wave to your neighbors from afar!

**Eat meals and exercise around the same time each day**
*Tip:* Start your morning with a stretch, walk, or run. Exercise will help you use up energy and feel ready for sleep!

**Why is this important?**
Your brain has a clock that helps everything in your body on a schedule.
This can affect everything from your mood, energy, sleep, digestion, heart, and immune system!

We have developed some tips to stay on a schedule and improve sleep to support your health and well-being during these challenging times.
www.sleep.pitt.edu

**Keep lights dim at night and avoid electronics 30-60 mins before bed**
Light reduces your brain’s natural melatonin and increases alertness, making it harder to fall and stay asleep.
News and social media may generate anxiety and interfere with sleep

*Tip:* Limit overhead lights in the last 1-2 hours before going to sleep. Use F.lux (free!) and nightshift on your electronics!
Getting healthy sleep during COVID-19

Why is this important?
Healthy sleep is important for our health and well-being.
Poor sleep has been shown to be related to higher levels of inflammation and greater risk of developing the common cold.
We have developed tips to manage your sleep to optimize wellness during these times.
www.sleep.pitt.edu

Use the bed only for sleep
Your work and home space may have merged. Doing work in bed may make it a space for stress, not rest.
Tip: Create a separate workspace in another room or at least not in the bed!

Only go to bed when you are sleepy
You may feel bored but going to bed too early is inconsistent with your body’s clock time, which will make it harder to fall or stay asleep.
Tip: Make a list of relaxing activities to do if you are bored

Follow a 1-hour wind-down routine
Tip: Do something relaxing, enjoyable, and in low light before bedtime. No social media or COVID-19 news! (Audiobooks, meditation, or puzzles?)

Avoid excessive time in bed
Tip: Match your time in bed to your actual amount of sleep, not to the amount of sleep that you wish that you could get.

Wake up at the same time every day
Consistent wake-up times tells the brain what is “day” and what is “night”, which is critical now that we’re leaving the home less often. Do different activities to separate your day and night.
Tip: Schedule a virtual coffee date in the morning, take a midday walk, and stop work and screen time by a certain time each day.
Results of the comparisons (paired t-tests) between pre-lockdown (black bars) and lockdown (white bars), performed on the dream variables. Each box represents a dream feature. * p < 0.05

Multiple binary logistic regression model with dream recall frequency (high and low dream recall frequency) as dependent variable.

Multiple binary logistic regression model with nightmare frequency (high and low nightmare frequency) as dependent variable.