

Consequences of Sleep Deprivation

Emily Chu, Celine Glennon, Frances Kestel, Janet Puma
MHC 200 / Professor Wheeler

Introduction / Abstract:

Sleep deprivation is a well-documented, widespread phenomenon amongst college students, who often face an unprecedented workload and stressors. Many sacrifice a full night's sleep even though chronic sleep deficits are known to produce suboptimal outcomes. We seek to understand potential negative cascades in the health and social domains. Our data will be derived from a survey—taken by MHC students recruited in the lounge and via word-of-mouth—and research articles.

Research Question: Exploring the prevalence of sleep deprivation in Macaulay Honors College students and identifying subsequent physical, mental, and social consequences.

Research Findings / Data:

(1) Health Effects

Physical Health:

- 59% of MHC students (13/22) reported being sleep-deprived (<7 hours/night).
- Effects similar to brain's endocannabinoid (eCB) system, which regulates appetite and energy. (9)
- Hedonic drive** grows stronger and resistance to junk food weakens.
- **Poor sleep quality** (4) is linked to **increased health disparities** (depression, insomnia, etc.).
- Impairs the **immune system** and limits performance.

Mental Health:

- Short sleep duration has been linked to an increased risk of depression and anxiety. (5)
- **7.5 to 8.5 hours of sleep** per night was the **most significant protective factor**. Long-term sleep debt and daytime sleepiness are other mediators.
- Strong correlation between **interpersonal stress** and insomnia / poor mental health, more so than FOMO. (1)

(2) Social Effects

Loneliness/Isolation:

- Sleep-deprived students stopped a neutral, approaching person **18-60%** further than if well-rested. (2)
- Decreased willingness to socialize attributed to changes in neural reactivity (danger / theory-of-mind networks).
- Loneliness is often **“self-reinforcing.”**

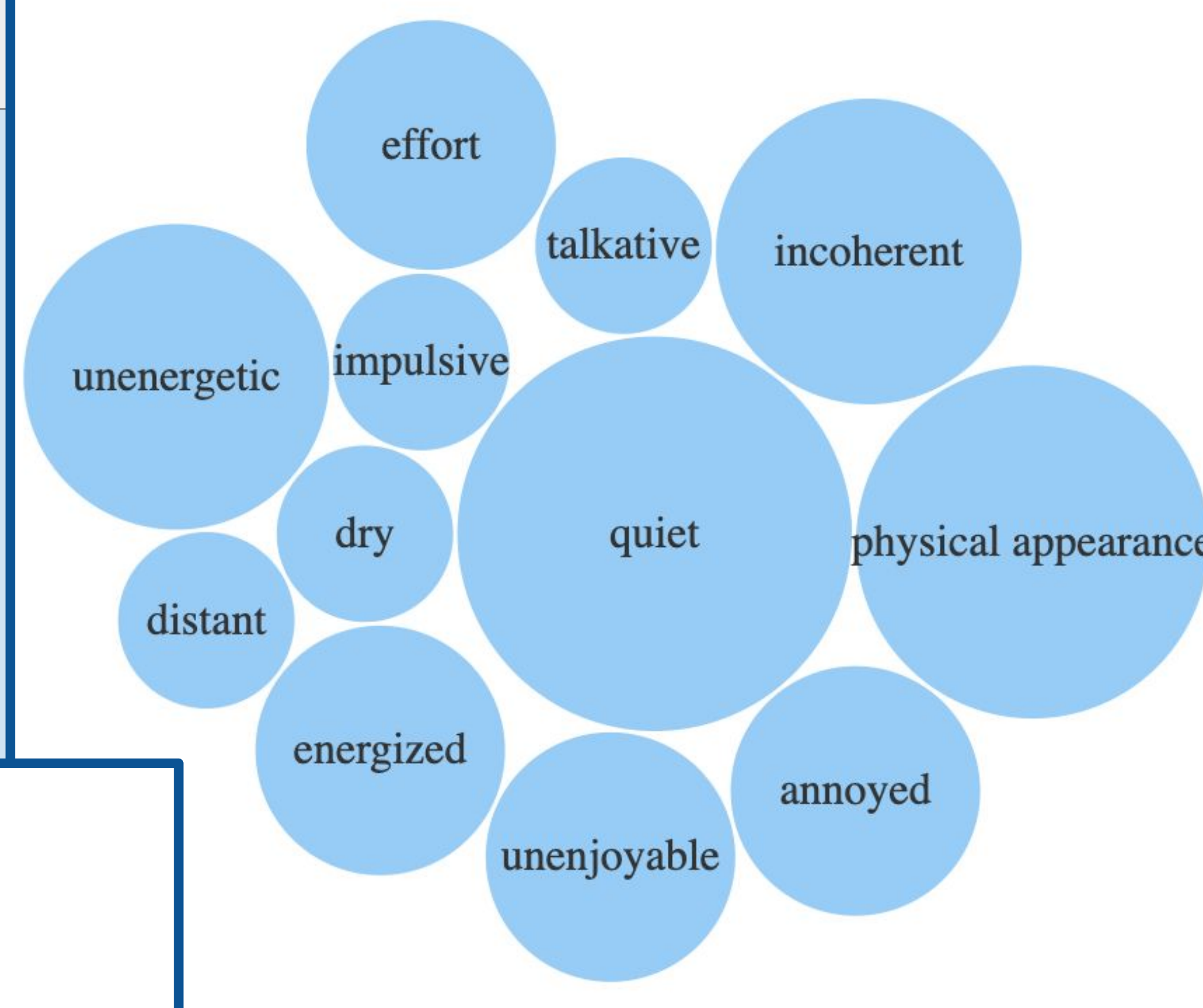
Social Contagion: “Emotions are contagious” (3).

- Can influence both individual and group mood. More negative.
- Humans are susceptible to **sharing emotions** — frown mimicry.

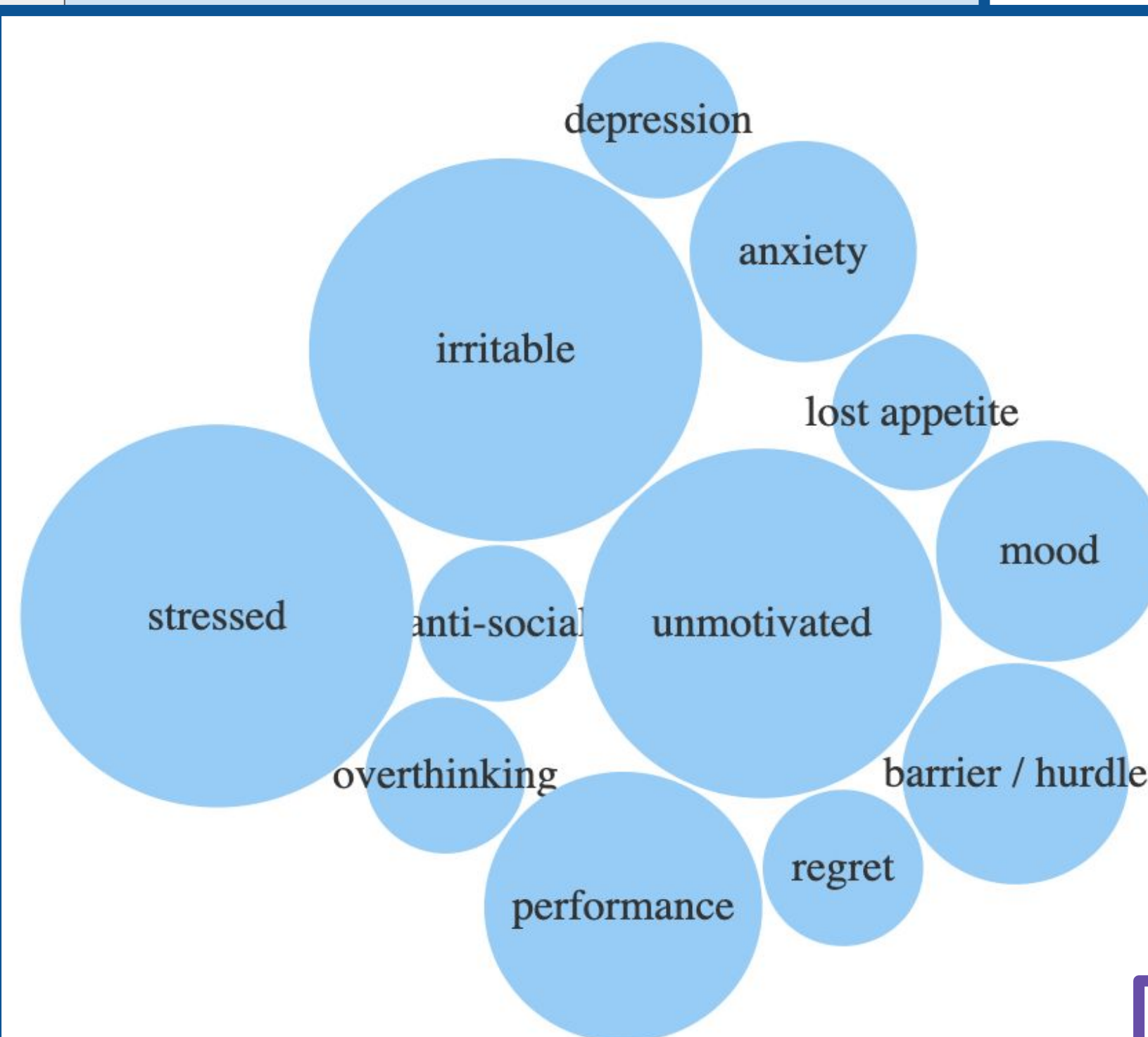
Academic Performance:

- No direct relationship between sleep and success. Longer sleepers (>9 hours) do tend to have **higher GPAs**. (8)
- **20 / 22** MHC survey respondents reported significant impairment of their **attention / alertness** ($\geq 7/10$). Similar for effort.

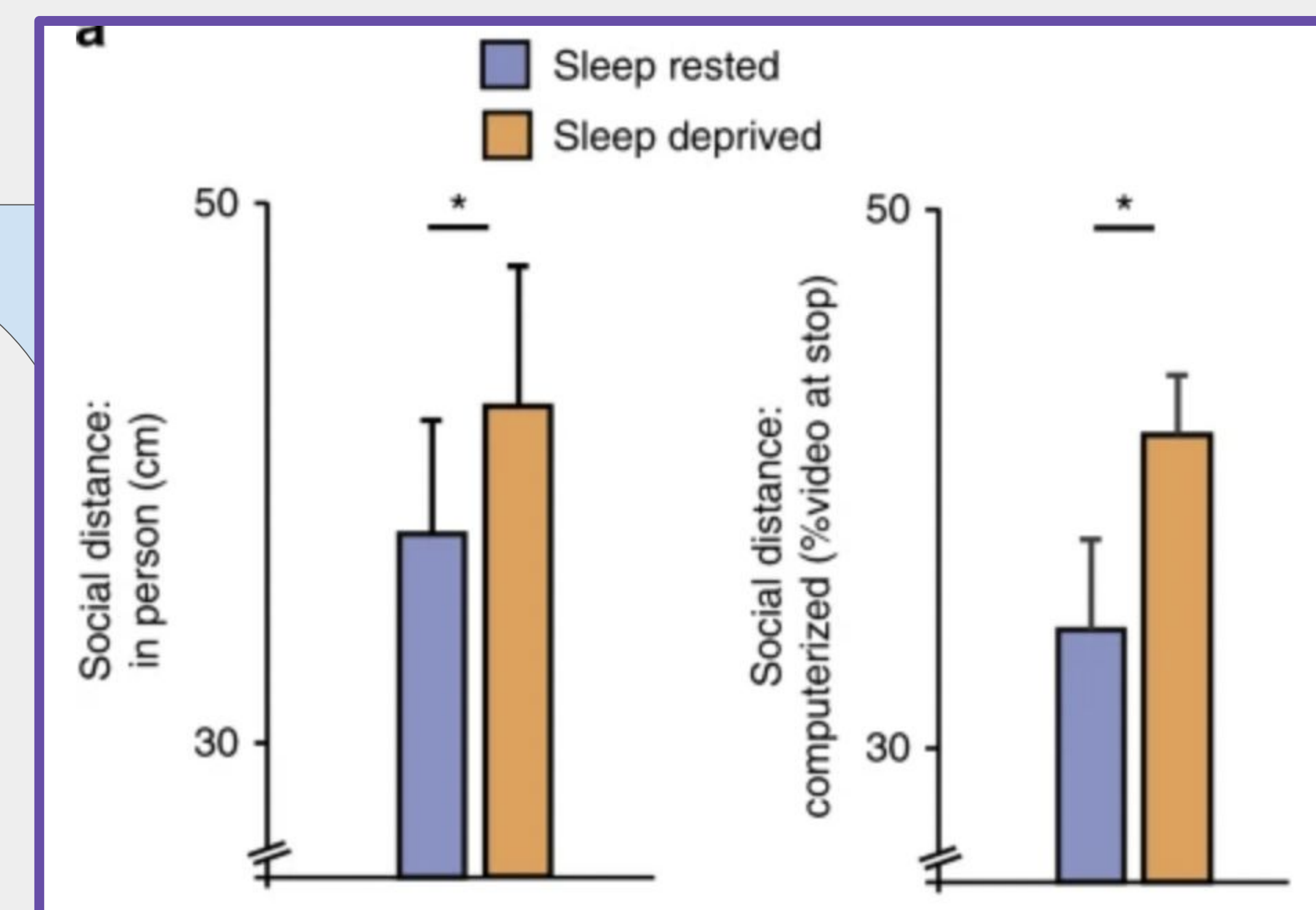
MHC students included these phrases / themes about SD's influence on their **willingness to socialize**.



MHC students included these phrases about sleep deprivation's **mental health effects**.

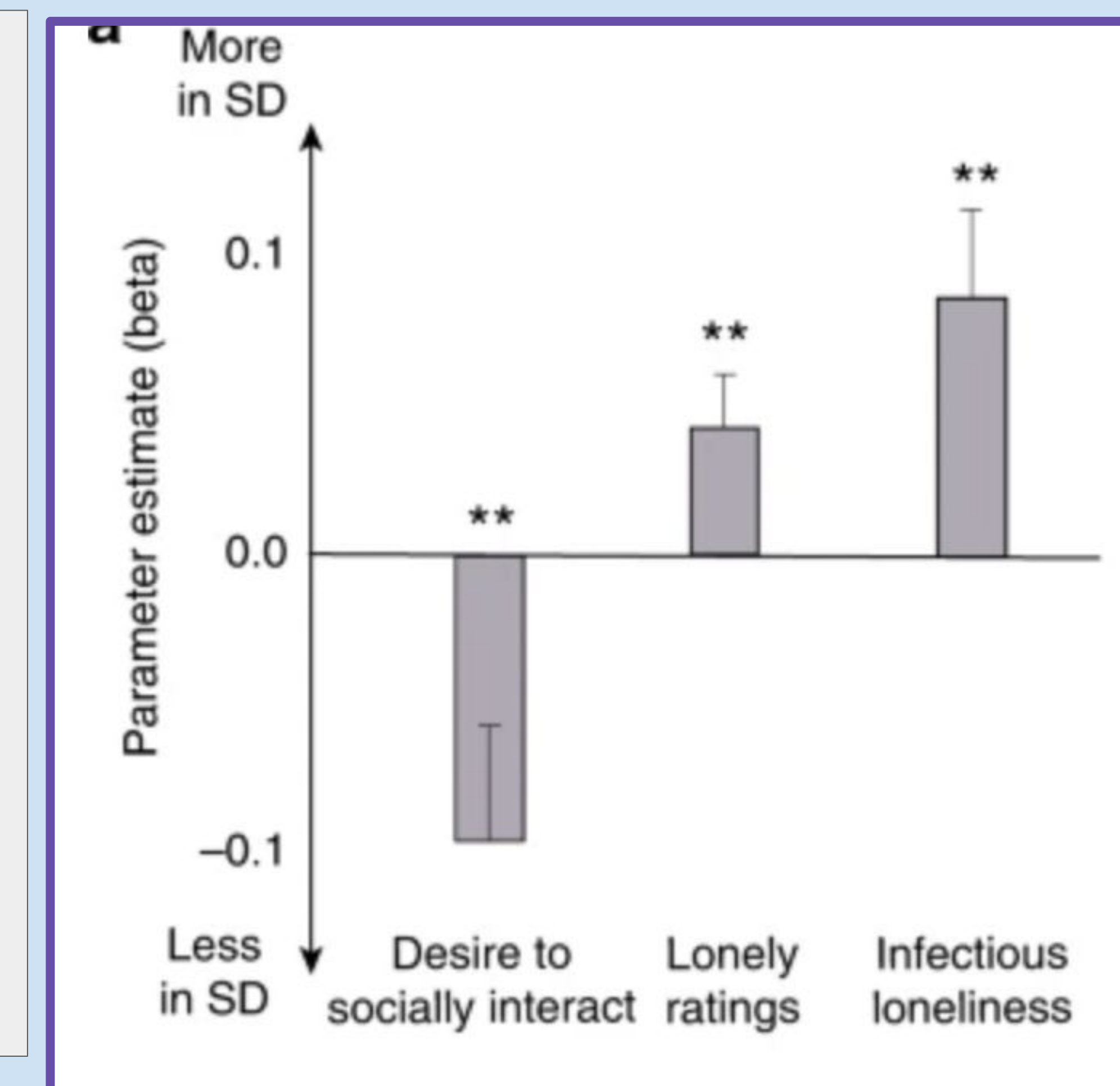


The red U-shaped curve illustrates that a sleep duration of **7-9 hours/night** aligns with the **lowest** scores of **depression and anxiety***. (5)



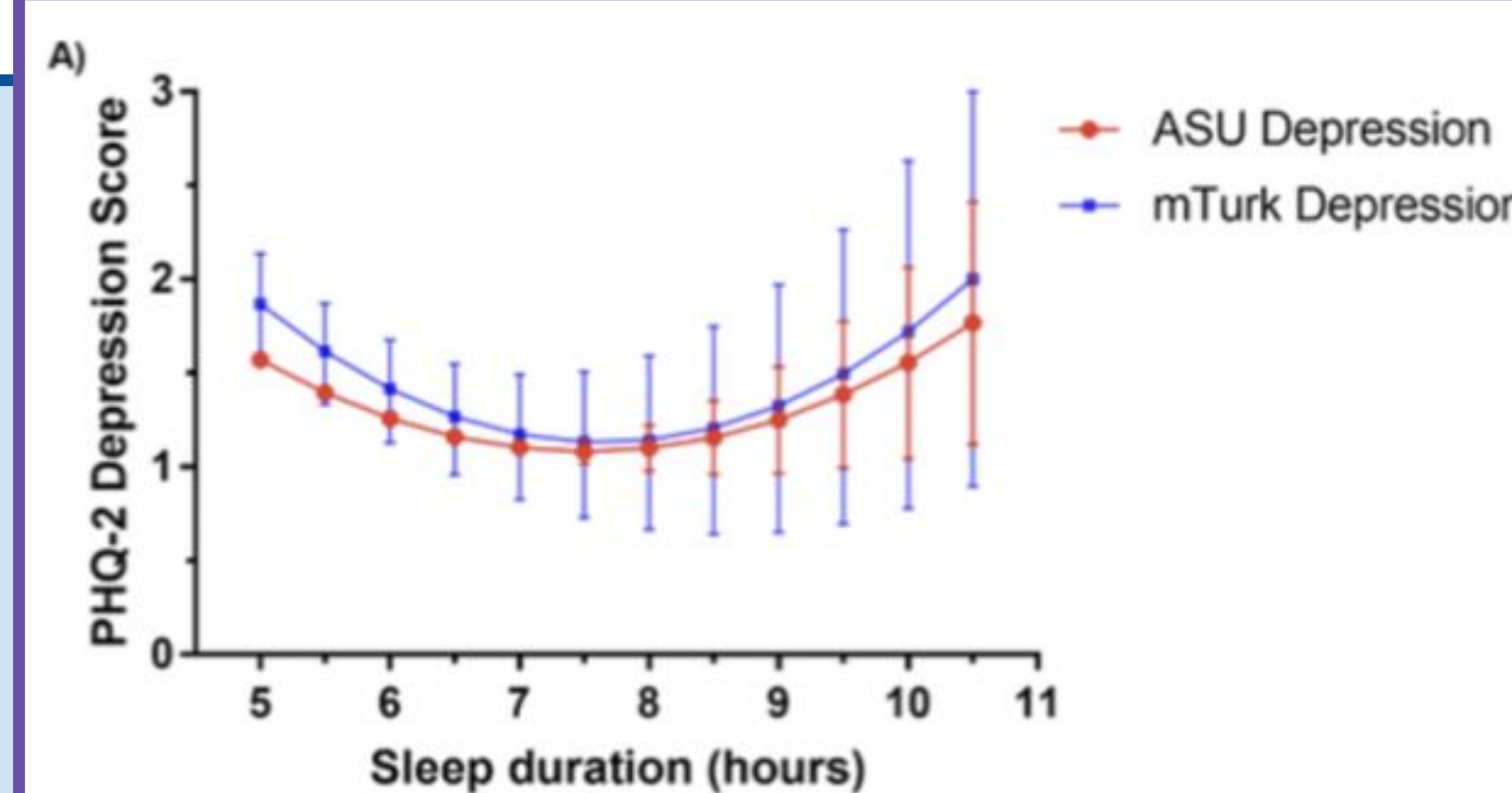
(2) Sleep-deprived students stopped approaching subjects significantly farther than well-rested ones in both real-world (left) and virtual (right) tasks.

(2) Sleep-deprived students were described as significantly **more lonely**, **less desirable to interact with**, and capable of **transmitting / “infecting” others** with loneliness.



Conclusion: “Next Steps”

Sleep deprivation—both short-term and chronic—presents a plethora of consequences for college students, whom are still in a period of profound physical, cognitive, and social development. Yet a reported **~70%** (5) of college students sleep <8 hours per night (comparable to our figure of 59%). To protect against / prevent SD, college students must **understand** its wide-ranging **consequences** and the **options available to them**. Therapists or sleep specialists can offer guidance and coping strategies. (10)(11) Doctors may also prescribe medication if necessary.



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