

Bright Light Therapy: A Promising Intervention to Improve Medical Student Wellbeing

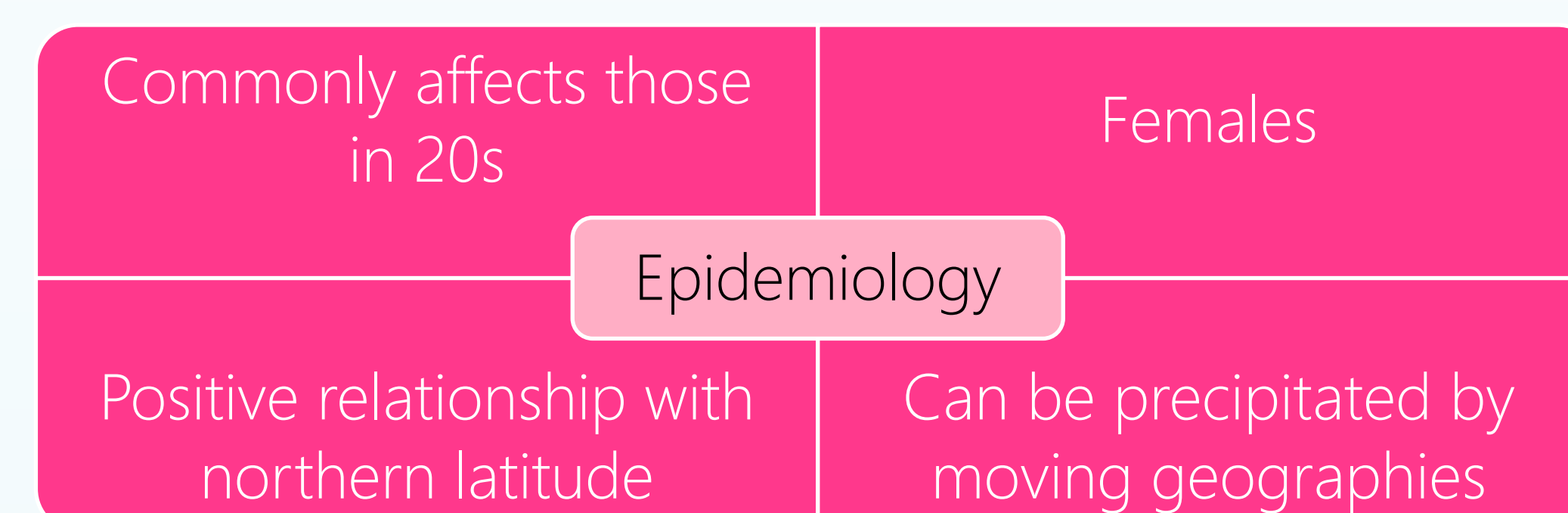
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The State of Undergraduate Medical Education

- Current undergraduate medical education is a considerable undertaking for students
- Up to 73% of medical students suffer from depressive symptoms related to educational rigors ¹
- A key feature of the clinical years of undergraduate medical education is to prepare students for the rigors of residency training with 24-hour call shifts and periods on night services
- These factors coalesce to explain the excessive prevalence of sleep pathology in medical students, with 23% reporting hypersomnia and 18% reporting insomnia ²

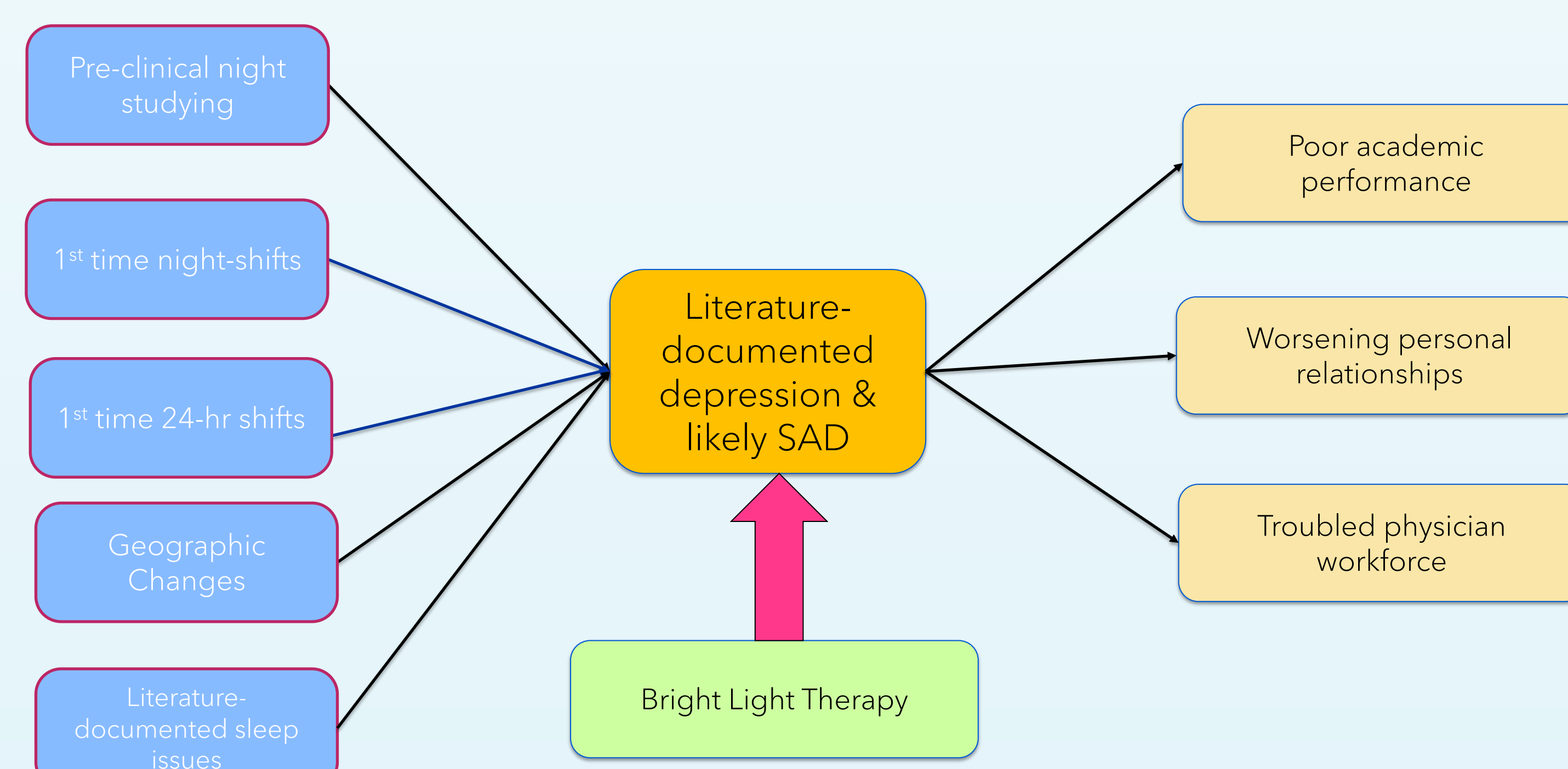
Seasonal Affective Disorder (SAD) ³

- SAD is a form of depression that mainly occurs in Fall and Winter months, remitting in the Spring & Summer
- Depleted light exposure results in neuropsychiatric changes associated with “depressed mood, loss of pleasure, change in appetite, sleep disturbances, reduced energy, neurocognitive dysfunction, or suicidal ideation/behavior”



- A meta analysis of 8 randomized controlled trials found that bright light therapy was effective at treating symptoms of SAD with an effect size of 0.84, which are comparable to the benefits of antidepressants ⁴
- In addition, BLT monotherapy has been shown to improve symptoms of non-seasonal unipolar depression as well as ADHD ^{5, 6}

Model



Objective

- To design a replicable model of Bright Light Therapy Self-Checkout for Undergraduate Medical Education Institutions

Intervention

- MP and EH started by hosting a FMIG meeting which was opened to the entire student body (medical students, PA students, NP students, & CRNA students)
- On November 20th, 2020, MP & EH presented evidence-based insights on the benefits of bright light therapy to 20 students in a large lecture hall at AMC for 30-minutes, while simultaneously streaming virtually, with an interactive instructive workshop

Bright Light Lamp Checkout Program at AMC

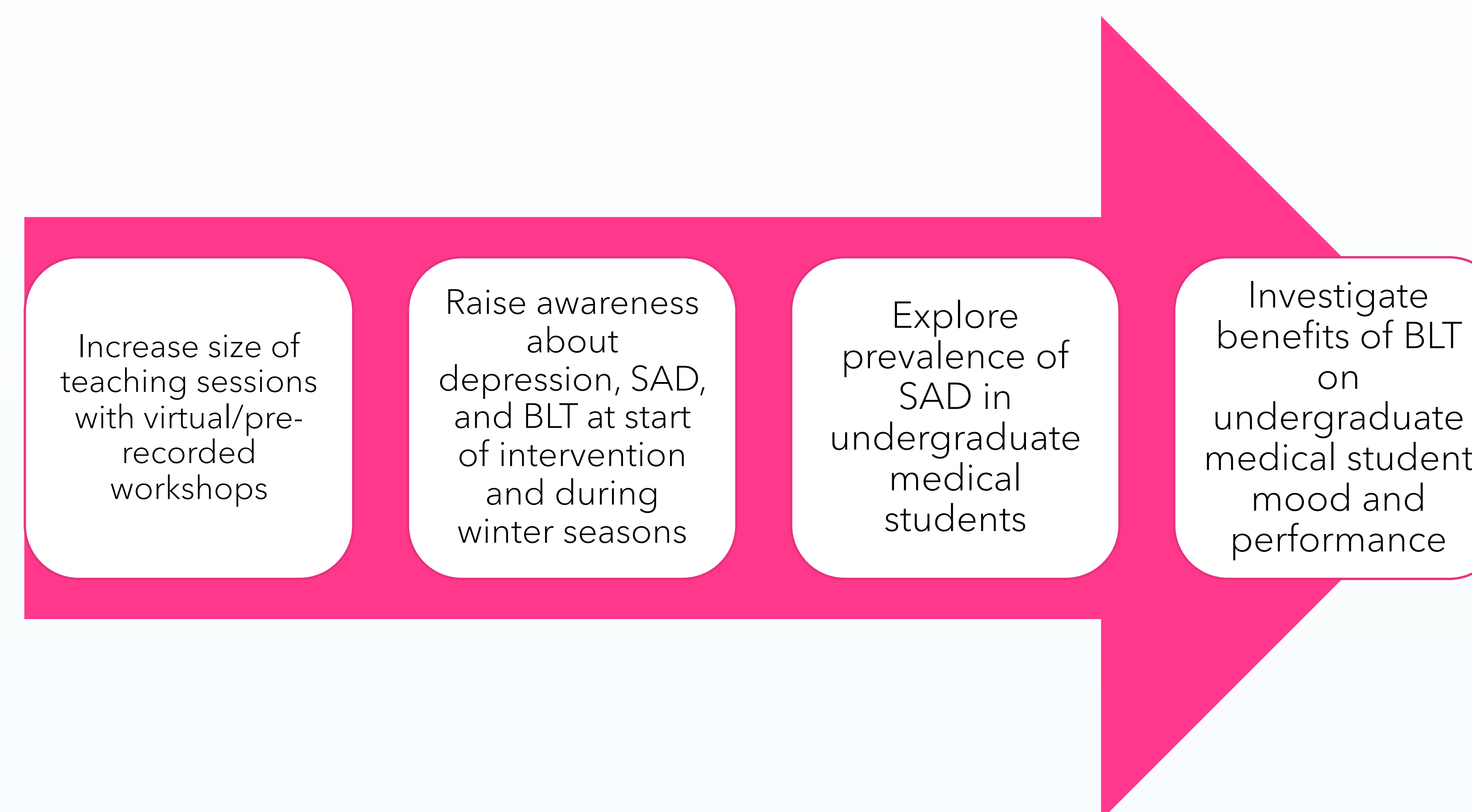
Purchased \$25 BLT lamps to be stored in an accessible location in the library	Simple self-checkout system with a sign-out sheet students, with scientific data displaying the benefits	Included Instructions: -10,000 Lux, 30-degree angle from line of sight, ideally 30-min before wakeup
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- Initially slow usage (measured in number of sign-outs)
- Seasonal reminders raising awareness of SAD as well as unipolar depression were associated with upticks in usage



Figure 1. BLT Self-Checkout Desk in Schaffer Library (1 Lamp currently in-use fighting depression & SAD)

Lessons Learned & Future Directions



Conclusions

- Depressive symptoms are common in medical students, and low-risk treatments are preferable and available
- An institutional BLT self-checkout program is feasible and scalable
- Bright light therapy is a promising, cost-effective solution with a low risk profile that medical schools can employ to help improve the acute and long-term wellbeing of medical students

Acknowledgements

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References

- 1) Mirza AA, Baig M, Beyari GM, Halawani MA, Mirza AA. Depression and Anxiety Among Medical Students: A Brief Overview. *Adv Med Educ Pract.* 2021;12:393-398. Published 2021 Apr 21. doi:10.2147/AMER.S302897
- 2) Bahammam AS, Al-Khairi OK, Al-Taweel AA. Sleep habits and patterns among medical students. *Neurosciences (Riyadh).* 2005;10(2):159-162.
- 3) Avery D, Roy-Byrne PP, Solomon D. Seasonal affective disorder: Epidemiology, clinical features, assessment, and diagnosis. December 2020. https://www.uptodate.com.elibrary.amc.edu/contents/seasonal-affective-disorder-epidemiology-clinical-features-assessment-and-diagnosis?search=seasonal%20affective%20disorder&source=search_result&selectedTitle=2~25&usage_type=default&display_rank=2#H1154753689.
- 4) Golden RN, Gaynes BN, Ekstrom RD, et al. The efficacy of light therapy in the treatment of mood disorders: a review and meta-analysis of the evidence. *Am J Psychiatry.* 2005;162(4):656-662. doi:10.1176/appi.ajp.162.4.656
- 5) Al-Karawi D, Jubair L. Bright light therapy for nonseasonal depression: Meta-analysis of clinical trials. *J Affect Disord.* 2016;198:64-71. doi:10.1016/j.jad.2016.03.016
- 6) Rybak YE, McNeely HE, Mackenzie BE, Jain UR, Levitan RD. An open trial of light therapy in adult attention-deficit/hyperactivity disorder. *J Clin Psychiatry.* 2006;67(10):1527-1535. doi:10.4088/jcp.v67n1006