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**PHYSICAL ACTIVITY AND SLEEP PATTERNS BEFORE AND DURING THE COVID-19-PANDEMIC – RESULTS FROM A CROSS-SECTIONAL AND RETROSPECTIVE STUDY**

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**Introduction:** In general, higher physical activity is related to lower symptoms of insomnia, depression, and anxiety. The COVID-19-pandemic and its related restrictions unfavorably impacted both physical activity and sleep patterns. However, it remains unknown how better sleep and physical activity prior to the pandemic confer resilience to psychological and health-related disturbances during the pandemic. We investigated whether people with higher physical activity and lower insomnia scores before the COVID-19-pandemic also reported higher physical activity, lower insomnia scores, and lower symptoms of depression and anxiety during COVID-19-pandemic-related restrictions.

**Methods:** A total of 826 adults (mean age: 34.58±12.37 years) completed self-rating questionnaires covering physical activity, and symptoms of insomnia, depression, and anxiety during the COVID-19-pandemic. Further, participants retrospectively rated their physical activity and insomnia before the COVID-19-pandemic. Hypotheses were tested using Pearson's correlations and paired t-tests with significance at  $p < 0.05$ .

**Results:** Retrospectively assessed higher physical activity levels before the COVID-19-pandemic were associated with lower symptoms of depression ( $r = 0.84$ ,  $p = 0.041$ ), but neither insomnia ( $r = 0.02$ ,  $p = 0.67$ ) nor anxiety scores during the COVID-19-pandemic ( $r = 0.05$ ,  $p = 0.20$ ). Retrospectively assessed lower insomnia scores before the COVID-19-pandemic were associated with lower symptoms of insomnia ( $r = 0.57$ ,  $p < 0.001$ ), depression ( $r = 0.30$ ,  $p < 0.001$ ) and anxiety ( $r = 0.31$ ,  $p < 0.001$ ) during the COVID-19-pandemic. Consistent with other studies both insomnia and physical activity worsened; insomnia scores increased ( $p < 0.001$ ,  $d = 0.66$ ) and physical activity decreased ( $p < 0.001$ ,  $d = 0.19$ ) from before to during the COVID-19 pandemic.

**Conclusion:** These results suggest that those with lower levels of insomnia prior to the pandemic may be resilient to the psychological and health-related consequences of the COVID-19-pandemic and its related restrictions in everyday life, while those with higher physical activity prior to the pandemic were more resilient specifically to depression during the pandemic).

**Support (If Any):**

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**A CHARACTERIZATION OF SOCIAL RHYTHMS IN OBSESSIVE-COMPULSIVE DISORDER**

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**Introduction:** Recent evidence has shown that obsessive-compulsive disorder (OCD) is linked to shifts in biologically driven sleep timing, indicating the role of biological rhythms within the disorder. Specifically, initial evidence suggests that biological disruptions in OCD may play a role in symptom severity and OCD treatment efficacy.

Germane to the study of biological rhythmicity is the consideration of social rhythms within OCD. Disruptions in social rhythmicity are found in other psychological disorders associated with biological rhythm vulnerabilities (i.e., Bipolar Spectrum Disorder, Depression, and Post-Traumatic Stress Disorder.) Given the shared features and high rates of comorbidity between OCD and these disorders, it is reasonable that social rhythm disruptions would be found in OCD as well. As no research to date has examined this, we sought to examine the regularity and distribution of social rhythm in individuals with clinically significant obsessive-compulsive symptoms. Further, we examined the role of affect and symptom severity across OCD subtypes.

**Methods:** 19 adults meeting criteria for a primary diagnosis of obsessive-compulsive disorder completed the Social Rhythm Metric at home for a period of 7 days. As part of a larger study, participants completed measures of sleep (Pittsburgh Sleep Quality Index), affect (Positive and Negative Affect Schedule), and obsessive-compulsive symptom severity and subtype (Obsessive-Compulsive Inventory) following diagnosis.

**Results:** We found the mean social rhythmicity in those with an OCD diagnosis to be 3.05 (SD=1.14.), similar to means found previously in other psychiatric disorders such as Bipolar Spectrum Disorder and Post-Traumatic Stress Disorder. Individuals with OCD who also reported delayed bedtimes were shown to have significantly lower social rhythmicity ( $p=.005$ ) than those without delayed bedtimes. Additionally, we found that social rhythmicity correlated similarly across OCD subtypes and was not strongly correlated with negative affect.

**Conclusion:** In the current study, we provide a preliminary characterization of social rhythmicity in those with OCD. Results suggest that social rhythm may play a role in OCD similar to bipolar disorder and further study is warranted. Overall, this study contributes to burgeoning research into the association between biological rhythms and OCD.

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**SAFETY AND EFFICACY OF ASHWAGANDHA FOR SLEEP: A SYSTEMATIC REVIEW**

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**Introduction:** Ashwagandha has been around for about two thousand years. It is known as Indian Ginseng, winter cherry, and poison gooseberry. In recent years, the benefits of Ashwagandha to have been explored in various studies due to the popularity of alternative therapeutic options in masses worldwide. Sleep is vital to the rejuvenation of the mind and body by replenishing the energy to carry on life activities. Sleep disorder is a major limitation in living life to full potential and Ashwagandha, known as beneficial for reducing stress and anxiety, is proven to improve the quality of sleep in individuals. In this systematic review, we study the efficacy of Ashwagandha in improving sleep and its safety for its users.

**Methods:** A literature search was conducted using relevant MeSH keywords, "Withania" and "Aswagandha" in the context of "Sleep," "Sleep-Wake Disorders," or "Sleepiness" in PubMed, PubMed Central, Medline, Web of Science, Biosis, and SciELO databases. We identified all published relevant articles from inception until 11/20/2021 and included 8 studies in our final qualitative synthesis review.

**Results:** Ashwagandha has been shown to have beneficial effects in decreasing time to fall asleep, improving duration, quality of sleep, and

mood upon awakening. Many studies demonstrated these beneficial effects with clinical significance using multiple rating scales of assessment. Most studies explored the safety profile of Ashwagandha for the subjects. In most studies, there were no adverse events reported, and its use is termed safe and beneficial. Few studies reported some minor side effects, such as in a randomized clinical trial, RCT, by Deshpande A. et al. (2020), headaches, fever, acid reflux, and allergic dermatitis were reported.<sup>1</sup> A randomized clinical trial by Langade D. et al. in 2019 showed that Ashwagandha shortens the sleep onset latency significantly ( $p=0.019$ ) after 10 weeks of with test [29.00(7.14)] compared to placebo [33.94(7.65)]. There was a significant improvement in sleep efficiency, SE scores at 83.48 (2.83) after 10 weeks 75.63(2.70) for the test at the baseline compared to placebo.<sup>2</sup> In another pilot study by Sharma H. et al. (2007), there was a significant improvement in sleep duration, sleep quality (91.67%,  $p<0.001$ ), and mood upon awakening (88.89%,  $p<0.001$ ).<sup>3</sup>

**Conclusion:** The findings support the efficacy of Ashwagandha for improving sleep quality. Due to the limited availability of data and well-designed studies warrants further research through cohort studies and clinical trials to determine the exact mechanism of action and benefits for sleep.

**Support (If Any):** References:1. Deshpande, A., Irani, N., Balkrishnan, R., & Benny, I. R. (2020). A randomized, double-blind, placebo-controlled study to evaluate the effects of Ashwagandha (*Withania somnifera*) extract on sleep quality in healthy adults. *Sleep medicine*, 72, 28–36. <https://doi.org/10.1016/j.sleep.2020.03.012>. Langade, D., Kanchi, S., Salve, J., Debnath, K., & Ambegaokar, D. (2019). Efficacy and Safety of Ashwagandha (*Withania somnifera*) Root Extract in Insomnia and Anxiety: A Double-blind, Randomized, Placebo-controlled Study. *Cureus*, 11(9), e5797. <https://doi.org/10.7759/cureus.57973>. Sharma, H., Chandola, H. M., Singh, G., & Basisht, G. (2007). Utilization of Ayurveda in health care: an approach for prevention, health promotion, and treatment of disease. Part 2—Ayurveda in primary health care. *Journal of alternative and complementary medicine (New York, N.Y.)*, 13(10), 1135–1150. <https://doi.org/10.1089/acm.2007.7017-B>