

Preclinical Medical Students’ Sleep Quality During Hybrid and Remote Learning Amidst the COVID-19 Pandemic

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Introduction

Medical students sleep ~6.5 hours daily, similar to the general population; however, medical students experience more sleep disturbances and daytime dysfunction which negatively affects sleep quality.

Sleep deprivation and daytime fatigue are associated with a perceived poorer quality of life. It is important to understand that the impaired sleep quality of medical students contributes to fatigue and poorer well-being even when the sleep quantity of medical students may seem adequate.

This study works to understand how different teaching modalities impact preclinical students’ sleep quality by using data collected during hybrid and remote learning periods of the COVID-19 pandemic. Preclinical students were studied as they spend more notable time in didactic learning settings compared to students in clinical rotations. Identifying relationships between sleep quality and teaching modalities may support interventions in medical education to improve sleep.

Aims and Objectives

The objective of this research project is to understand how hybrid and remote teaching modalities impact the sleep quality of OUWB preclinical medical students amidst the COVID-19 pandemic.

Accomplishing the goals of this research project can support a better understanding of the relationships between medical education teaching modalities and sleep quality. A deeper understanding of those relationships may help identify, justify, and develop intervention strategies in medical education that can be used to improve the sleep quality and well-being of preclinical medical students.

Methods

Data of total and consecutive low sleep days was analyzed from 27 OUWB preclinical students wearing FitBit Charge 2-4 watches during remote and learning periods in Fall 2020 and Fall 2021, respectively. Low sleep days were defined <6 hours of sleep in a day.

This retrospective study used data collected from a larger Project MedWell study which assessed biometric data as markers of psychological health and wellbeing.

This overarching study collected data from 54 participants; however, study participants who didn’t wear their FitBits for ≥60% of the study were excluded from analysis. Ultimately, data from 27 participants was analyzed with ANOVA.

	M1 Students	M2 Students	Total Participants Per Semester
Remote Semester	7	13	20
Hybrid Semester	4	3	7
Total Participants Per Class Year	11	16	27 Total Study Participants

Table 1. Amount of Study Participants Analyzed Throughout the Study. The remote semester relates to Fall 2020 and the hybrid semester relates to Fall 2021.

Results

There was no significant difference in total low sleep days between preclinical students during the analyzed hybrid and remote learning periods of this study.

However, the results did show that preclinical students undergoing hybrid learning experienced significantly more 3 and ≥5 days consecutive low sleep days (p-value <.001) when compared to preclinical students undergoing remote learning.

Data analysis additionally showed that M2s had significantly more 1 low sleep days than M1s (p-value 0.042), while M1s had significantly more low sleep days than M2s across 3 and ≥5 days consecutively (p-values .032 and .012, respectively).

	Teaching Modality	Mean Consecutive Low Days	P-Value
1 low sleep day	Remote	6.10	0.490
	Hybrid	8.14	
2 Consecutive low sleep days	Remote	1.35	0.726
	Hybrid	2.00	
3 Consecutive low sleep days	Remote	0.35	<0.001
	Hybrid	1.14	
4 Consecutive low sleep days	Remote	0.10	0.742
	Hybrid	0.14	
≥5 Consecutive low sleep days	Remote	0.00	<0.001
	Hybrid	0.86	

Table 2. ANOVA analysis of Consecutive Low Sleep Days of 20 study participants doing remote learning in Fall 2020 and 7 participants doing hybrid learning in Fall 2021. Results show hybrid learners had significantly more low sleep days for 3 and ≥5 consecutive days than remote learners.

Conclusions

This study shows significantly more 3 and ≥5 consecutive low sleep days for preclinical students undergoing hybrid learning compared to remote learning. This finding could help promote the use of more remote learning for preclinical students in order to support their sleep quality.

There are no significant differences regarding total low sleep days across hybrid and remote learning periods. This study would benefit from larger participant pools. Research could be furthered with analysis of more sleep quality metrics and learning periods.

References

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