OUWB School of MEDICINE
OAKLAND UNIVERSITY WILLIAM BEAUMONT®

Influence of Preclinical Curriculum on Medical Students' Sleep Duration

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Introduction

Disturbances in an individual's sleep quantity and quality are known to alter their ability to encode, consolidate, and recall information[1,2,3]. Students may attempt to maximize study time at the expense of their sleep, potentially harming the ability to maximize understanding of the material.

Aims and Objectives

This study aims to evaluate the relationship between the number of lecture hours (LH), number of mandatory lecture hours (MLH), and day of the week of assessments (DWA) on the weekly average sleep duration (WASD) of OUWB medical students to better understand the potential impact of these curricular components on sleep duration.

Methods

- Fitbit Charge HR devices were provided to 84 OUWB medical students in the classes of 2022-2025 at the start of the M1 academic year.
- Eligible participants were required to have sleep data for > 60% of nights over 4-week intervals. This narrowed the participant number to 44 students.
- Data for sleep events, total time awake, total time in bed, and total sleep duration was collected in Fitabase's proprietary API software[4] (www.fitabase.com), and WASD was calculated.

Methods (continued)

- LH, MLH, and DWA were determined by analyzing the Google Calendar curriculum schedule shared with all OUWB medical students. The weekly, 4-week averages, and semester averages for LH, MLH, and DWA were calculated and compared to students' WASD.
- Statistical analysis was conducted to assess the association between LH, MLH, DWA, and changes in WASD from each 4-week average.

Results

- In the M1 class of 2023, each unit increase in LH from the academic year's average total LH was associated with a 28-second decrease in WASD (Table 1, *p=0.004*).
- In the M1 class of 2023, each unit increase in MLH from the academic year's average total MLH associated with an increase of 27 seconds in WASD *(Table 1, p=0.045)*.
- In the M2 class of 2025, each unit increase in LH from the academic year's average total LH was associated with a 70-second increase (Table 1, *p=0.045*).
- There was no DWA that corresponded with a significant change in sleep duration across two or more classes.
- Students consistently failed to meet the CDC's minimum recommended sleep requirements during Semester 1 of the M1/M2 academic years, with improvement during Semester 2 (Figure 1).

M1	Average Mandatory Lecture Hours (MLH)	Average Total Lecture Hours (LH)	Weekly Average Sleep Duration (WASD)
Class of 2022	7.5	18.5	6h, 45m
Class of 2023	6*	18*	6h, 58m
Class of 2024	8	20	7h, 10m
Class of 2025	8	19.5	6h, 34m
Classes 2022-2025 Combined	7.8	19	6h, 45m
M2			
Class of 2022	7.5	19	6h, 59m
Class of 2023	6	18.5	7h, 15m
Class of 2024	7	20.5	7h, 7m
Class of 2025	7.5	20*	6h, 37m
Classes 2022-2025 Combined	7	19.5	6h, 59m
M1 + M2			
Class of 2022	7.5	18.8	6h, 52m
Class of 2023	6	18.5	7h, 6m
Class of 2024	7.5	20.3	7h, 8m
Class of 2025	7.8	19.5	6h, 35m
Classes 2022-2025 Combined	7.4	19	6h, 55m

** Significant change in WASD associated with each unit increase in LH / MLH*

TABLE 1: OUWB STUDENT SLEEP DURATION CLASS BREAKDOWN

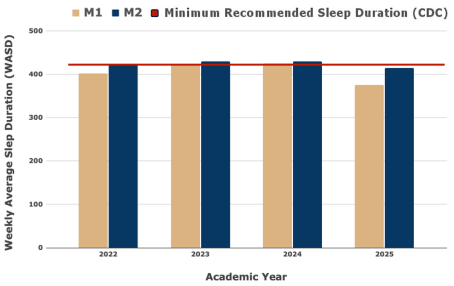

FIGURE 1: OUWB SLEEP DURATION ACADEMIC YEAR COMPARISON

Conclusion

This study found variable associations between LH, MLH, and WASD, suggesting that preclinical curricular demands may inconsistently impact sleep duration across the OUWB class years. Despite this variance, the data demonstrate that WASD often improves between the M1 and M2 academic years. Several limitations were identified in this study, most notably the inclusion criteria requiring participants to use their Fitbits for >60% of nights over 4-week intervals. This criterion narrowed our participant pool to 44 medical students, decreasing the likelihood of detecting statistically significant differences in sleep duration. Future research may benefit from recruiting a larger number of participants with a higher Fitbit use frequency, as well as analyzing the impact on WASD of additional curricular factors such as exam frequency, course duration (compact vs. longitudinal), and online vs. in-person sessions.

References

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