



Timing Matters: Evaluating Exercise Timing Effects on Sleep Quality Among UC San Diego College Students

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Background

- ❖ Exercise Timing relates to the time of day in which an individual begins their exercise
- ❖ Obtaining healthy sleep quality consists of avoiding irregularity as well as proper and undisturbed duration.¹
- ❖ The recommended amount of sleep per night for adults is 7-9 hours as this range allows for the proper health and recovery from exercise required.²
- ❖ We aimed to assess the impact of exercise timing, whether consistent or sporadic, on sleep quality among UC San Diego undergraduates.

Methods

- ❖ A cross-sectional study distributed via Qualtrics was conducted between April 24, 2024 and May 1, 2024.
 - Data collection took place outside of RIMAC Gym on campus as well as QR code posted during live lectures across campus and on UCSD social media.
- ❖ Questionnaires included measures of students exercise patterns as well as a shortened Pittsburgh Sleep Quality Index (PSQI).³
- ❖ The exposure for this research is exercise timing and the outcome is sleep quality.
- ❖ Analysis conducted using R Statistical Software.

Conclusion

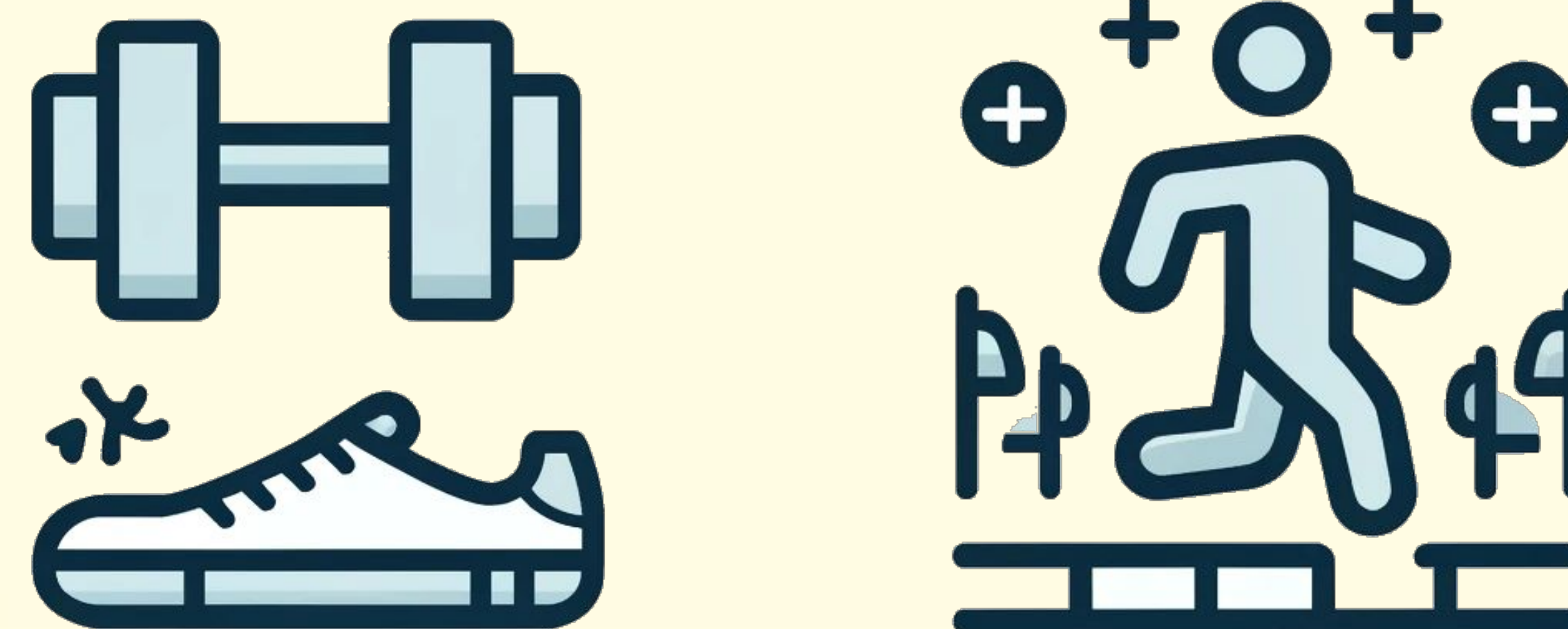
No statistical significance in sleep quality of PM and sporadic exercisers when compared to AM exercisers.

Table 1: Contributors to Sleep Quality

Characteristic	Overall, N = 72 ¹	Good, N = 47 ¹	Poor, N = 25 ¹	p-value ²
Age				0.58
16 to 20 years old	32 (44.4%)	22 (46.8%)	10 (40.0%)	
21 to 35 years old	40 (55.6%)	25 (53.2%)	15 (60.0%)	
Sex				0.62
Females	26 (36.1%)	16 (34.0%)	10 (40.0%)	
Males	46 (63.9%)	31 (66.0%)	15 (60.0%)	
Grade Level				0.38
Lowerclassmen	22 (30.6%)	16 (34.0%)	6 (24.0%)	
Upperclassmen	50 (69.4%)	31 (66.0%)	19 (76.0%)	
Housing Status				0.87
Off-Campus	47 (65.3%)	31 (66.0%)	16 (64.0%)	
On-Campus	25 (34.7%)	16 (34.0%)	9 (36.0%)	
Employment Status				0.35
Not Employed	32 (44.4%)	19 (40.4%)	13 (52.0%)	
Employed	40 (55.6%)	28 (59.6%)	12 (48.0%)	
Exercise Timing				0.31
AM	16 (22.2%)	13 (27.7%)	3 (12.0%)	
PM	34 (47.2%)	21 (44.7%)	13 (52.0%)	
Sporadic	22 (30.6%)	13 (27.7%)	9 (36.0%)	

¹ n (%)
² Pearson's Chi-squared test

No difference in sleep quality by sample characteristics were observed (Table 1).



Policy Implications

- ❖ University policies that support gym hours that promote significant positive effects on sleep quality should be considered.
- ❖ Providing students with digital tracking resources to accurately measure their sleep and exercise habits that may be used.



Results

No association between exercise timing or demographic factors on sleep quality, although PM exercisers tend to have a higher likelihood of good sleep compared to AM exercisers (OR=3.03,p=0.14) (Table 2).



Overall, 50% of PM, 47% of Sporadic, and 25% of AM exercisers all reported good sleep quality (Figure 1).

Table 2: Logistic Regression Predicting Sleep Quality

Characteristic	OR ¹	95% CI ¹	p-value
Exercise Timing			
AM	—	—	
PM	3.03	0.75, 15.8	0.14
Sporadic	2.69	0.59, 15.0	0.22
Age			
16 to 20 years old	—	—	
21 to 35 years old	1.51	0.39, 6.41	0.56
Sex			
Females	—	—	
Males	0.54	0.17, 1.66	0.28
Grade Level			
Lowerclassmen	—	—	
Upperclassmen	1.67	0.38, 7.95	0.50
Housing Status			
Off-Campus	—	—	
On-Campus	1.69	0.49, 6.18	0.41
Employment Status			
Not Employed	—	—	
Employed	0.51	0.16, 1.52	0.23

¹ OR = Odds Ratio, CI = Confidence Interval

Figure 1: Sleep Quality Prediction

