

Cannabis Use is Related to Sleep Quality and Duration

TSET Health Promotion Research Center



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BACKGROUND

- A common self-reported reason for cannabis use is to improve sleep.¹
- Poor sleep quality and low total sleep time can negatively impact physical and mental well-being.^{3,4}
- Past research shows mixed associations between cannabis use, sleep quality, and sleep duration.^{2,4}
- Few studies have used ecological momentary assessments (EMA) to examine proximal relationships between cannabis use and perceived sleep quality and duration.

STUDY AIM

To examine the effects of cannabis use on self-reported sleep quality and sleep duration in a nationwide sample.

STUDY DESIGN

Table 1. Sample Characteristics (n=100)

Variable	% or mean (N or SD)
Age	46.5 (12.1)
Sex	
Female	70 (70%)
Male	30 (30%)
Race	
White	68 (68%)
Non-White	32 (32%)
Average number of cannabis use days (n=1232)	12.3 (9.2)

Procedures:

- 28-day randomized controlled trial
- **Study Design:** 32 groups (2x2x2x2x2)
- **EMAs per day:** 2 vs 4
- **Number of questions per EMA:** 15 vs 25
- **EMA timing:** random vs fixed
- **Payment type:** \$1 per survey vs % of EMAs completed
- **First 2 weeks question type:** Likert scale vs slider scale

Measures:

- **Daily Cannabis Use:** "Please select the substances that you used yesterday?" and "In the past 24 hours, which of the following have you used?"
- Rating Scale: check all that apply

• **Sleep Quality:** "How would you rate the quality of your sleep last night?"

- Rating Scale for Likert: Very poor (1) to Very good (5)
- Rating Scale for slider: Low (1) to High (10)

• **Sleep Duration:** "How many hours of sleep did you get yesterday?"

- Rating Scale: 0-12 hours in ½ hour increments

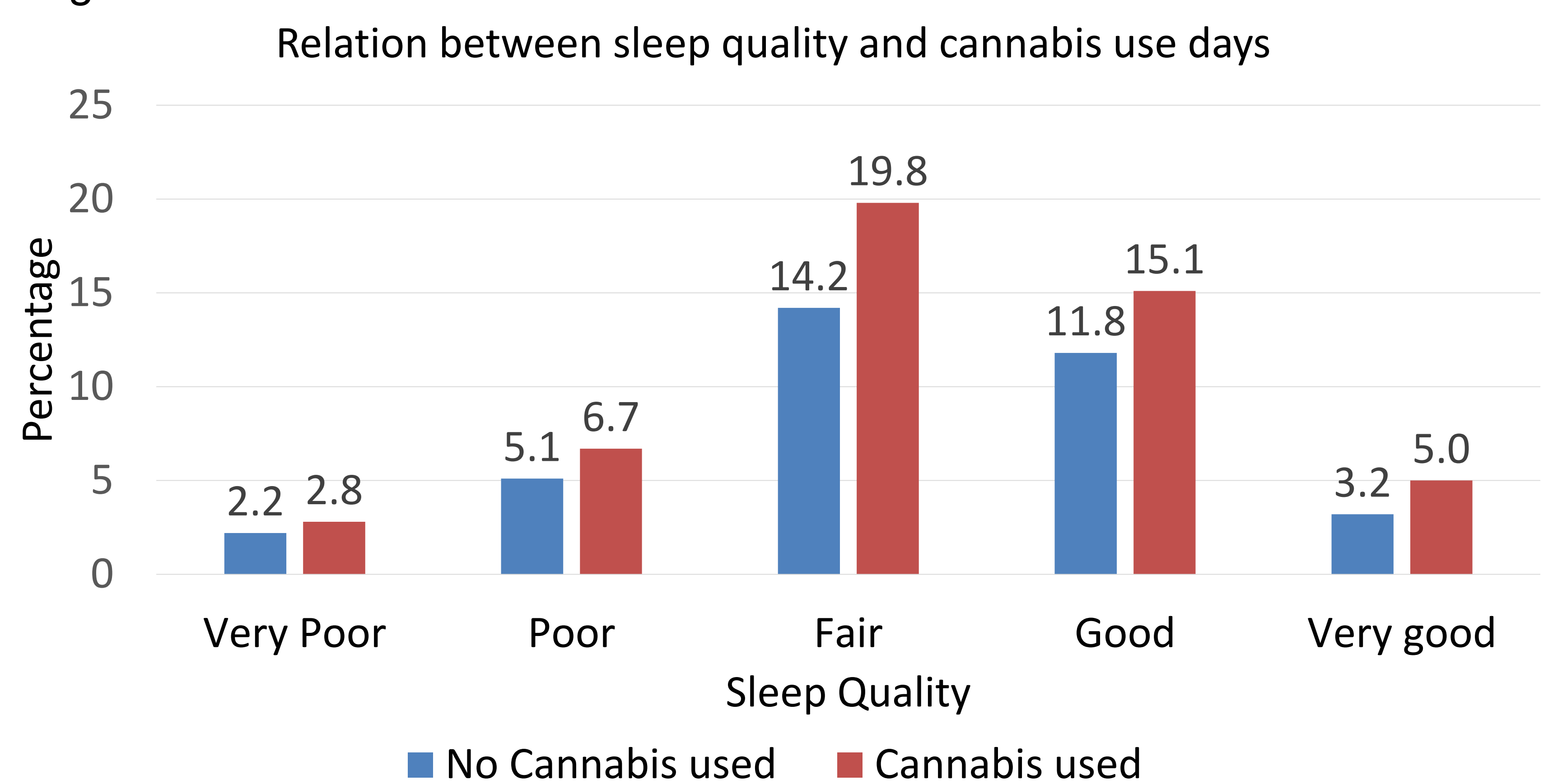
STUDY DESIGN CONT.

Analysis Plan:

- Only included those that used cannabis during the 28 day EMA period
- Multilevel Models (MLMs) were conducted
- Covariates: age, gender, race

RESULTS

Figure 1.



- We found a significant and positive effect of cannabis use on sleep quality (Likert scale; $b=0.515$, $t=3.071$, $p=0.002$). **Within participants, previous day cannabis was related to better sleep quality than non cannabis use days.**
- There was a significant and negative interaction between cannabis use and race on sleep quality (Likert scale; $b=-0.55$, $t=-2.147$, $p=0.03$). **On days participants reported cannabis use, non-White participants reported higher sleep quality than White participants. On days cannabis was not used, White participants reported higher sleep quality than non-White participants.**

CONCLUSIONS

- Cannabis use was **ONLY** associated with sleep quality when covariates were added **AND** asked on a Likert scale.
- Cannabis use was **NOT** associated with sleep duration.
- Further research is needed to replicate and further examine the unexpected interaction between cannabis use and race on sleep quality.

Limitations:

- Small sample size consisting of mostly Non-Hispanic White females
- Used only self-reported measures.
- Few cannabis use questions (e.g., quantity and type of cannabis use).

Future Direction:

- Incorporate objective measures of cannabis use and sleep and identify mechanisms of this association.
- Examine whether these results replicate in other samples of individuals (e.g., patients with cancer or individuals with sleep disorders).

• **Intervention development:** Examine whether cannabis use can improve sleep quality and duration on nights individuals are experiencing sleep problems.

References

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