



Early Birds and Night Owls: Distinguishing Profiles of Cannabis Use Habits by Use Times with Latent Class Analysis



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Introduction

- Risk and protective factors associated with cannabis use include an individual's propensity to employ protective behavioral strategies (Bravo et al., 2017), the frequency (Looby & Earleywine, 2007), quantity (Zeisser et al., 2012), and potency (Prince & Conner, 2019) of the product consumed, as well as timing of use (Earleywine et al., 2016)
- In clinical diagnostic surveys, questions assessing morning use of alcohol ("eye-opener" drinks; Beresford et al., 1990; Cherpitel, 1999; Sokol et al., 1989) and cigarettes (Heatherton et al., 1991) clearly demonstrate that timing of use matters with regards to consequences
- However, timing of cannabis use has received little empirical attention
- One study found that individuals who use cannabis daily, who also use in the morning, are more likely to experience cannabis related problems than others who never use before noon (Earleywine et al., 2016)

Research Questions

- 1) Do distinct classes of cannabis use patterns exist based on timing of use (i.e., hour of day and day of week)?
- 2) If so, how do these classes differ on cannabis use indicators and related negative consequences?

Method

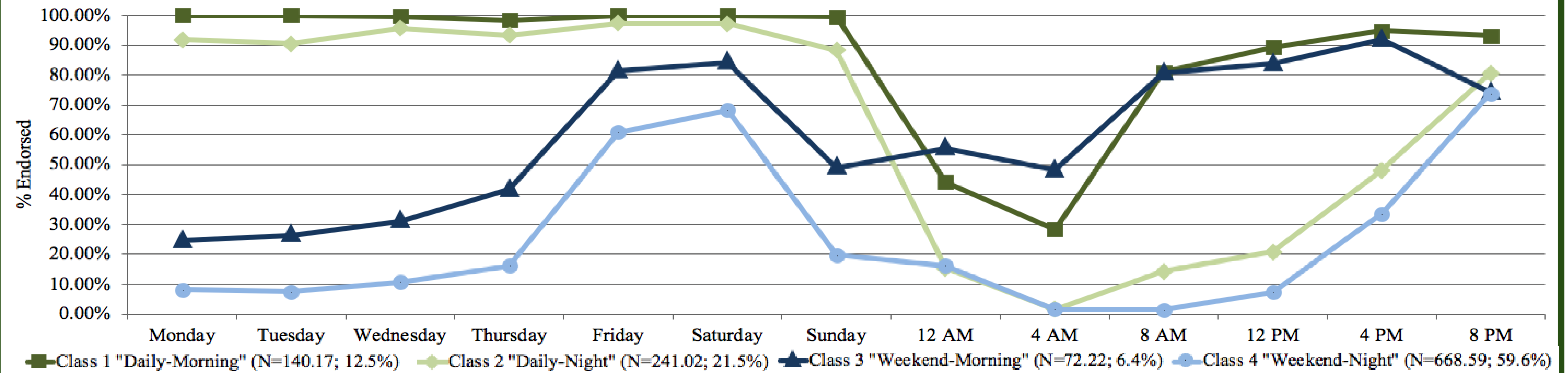
Participants and Procedure

- The present study is a secondary data analysis of a cross-national study focused on mental health, personality traits, and substance use behaviors (Bravo et al., 2021)
- 1,122 college students who reported past month cannabis use were recruited across several U.S. universities in four states (Colorado, New Mexico, New York, Virginia)
- Analytic sample included 740 females (66%) and 376 males (33.5%) who were on average 19.44 years of age ($SD = 2.56$)
- The majority (57%) of participants identified as being White, Non-Hispanic

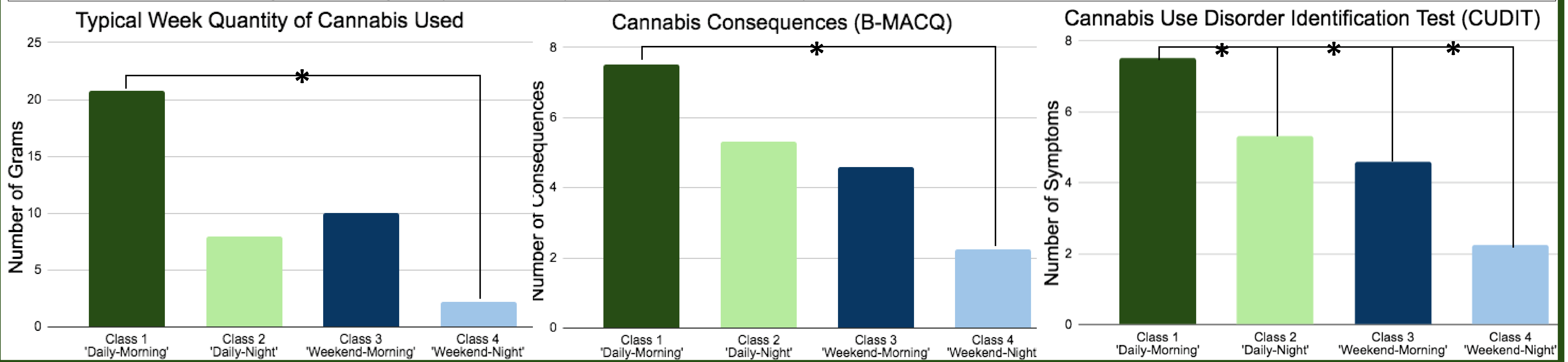
Measures

- **Marijuana Use Grid (MUG; Pearson & Marijuana Outcomes Study Team, 2021).** Each day of the week was broken down into six 4-hour time blocks (12a-4a, 4a-8a, 8a-12p, etc.), and participants were asked to report at which times they used cannabis during a "typical week"
- **Marijuana Motives Questionnaire Short Form (MMQ-SF; Simons et al., 1998)**
- **Brief Marijuana Consequences Questionnaire (B-MACQ; Simons et al., 2012)**
- **Cannabis Use Disorders Identification Test-Revised (CUDIT-R; Adamson et al., 2010)**

Results



- "Daily-Morning" class (dark green) endorsed daily use at rates close to 100%, and at a rate of 81% between the hours of 8am-12pm. "Daily-Night" class (light green) also endorsed daily use at high rates, however "Daily-Night" only endorsed using cannabis between the hours of 8am-12pm at a rate of 14%. "Weekend-Morning" (dark blue) and "Weekend-Night" (light blue) classes similarly mirror each other on use throughout the week, such that they endorsed markedly greater levels of use during the weekend compared to weekdays. However, the weekend use classes diverge on their use between 8am-12pm such that 80.6% of "Weekend-Morning" endorsed using cannabis between the times of 8am-12pm, while only 1.5% of "Weekend-Night" endorsed use in the same time period.
- "Daily-Morning" (the second smallest class by membership) reported the least adaptive values on several cannabis use indicators, and cannabis related outcomes. "Weekend-Night" (the largest by membership) reported the most adaptive values on cannabis use indicators and related outcomes (see below).



Discussion

- The typical college student who uses cannabis falls into the "Weekend-night" class (light blue), and therefore may be experiencing relatively few negative cannabis-related consequences compared to individuals in other classes
- It is likely that frequent use and morning use of cannabis share significant variance in their relation to the experience of negative consequences. However, it seems plausible that the acute subjective and cognitive effects of any intoxicant, when consumed earlier in the day, may alter mood, judgment, and/or decision making such that the experience of consequences specifically related to use becomes more likely
 - The present results support that timing of cannabis use over the course of a day may be a useful and partially unique factor for explaining problems associated with use, including cannabis use disorder symptoms
- Given that both morning use classes also reported greater cannabis use disorder symptoms compared to their matching daily or non-daily using counterpart, it may be clinically useful to emphasize reducing both daily and morning recreational use
- Harm reduction interventions on morning use habits specifically are attractive because they can be relatively easy to implement, such that they do not require individuals to quit using entirely, just postpone their use to more optimal times