Can Pre-flight Subjective Sleepiness Predict the Use of Controlled Rest on the Flight Deck?

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Introduction

- Fatigue is a known issue in aviation due to long and irregular working hours
- To mitigate inflight sleepiness, some regions allow pilots to sleep during a "controlled rest" period on the flight deck
- Few studies have investigated the factors influencing a pilot's decision to take controlled rest
- **We aimed to investigate whether subjective sleepiness ratings taken pre-flight are predictive of controlled rest use**

Methods

- *N* = 93 long-haul (> 6 h flight duration), non-augmented (two-pilot crew) flights were analyzed (*n* = 30 pilots)
- Likelihood of controlled rest was assessed using mixed-effects logistic regression based on Karolinska Sleepiness Scale (KSS) ratings provided pre-flight

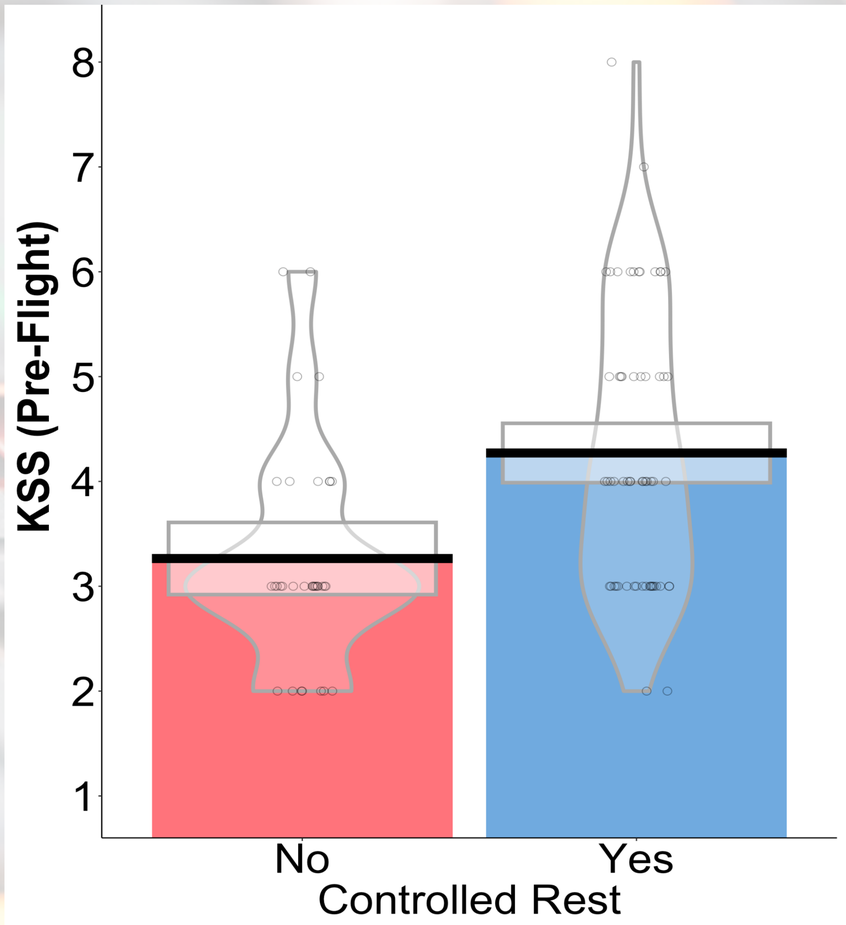

Figure 1. Violin plot overlaid with box plot, bar chart, and individual data points depicting Karolinska Sleepiness Scale (KSS) ratings taken pre-flight by whether controlled rest was taken in the subsequent flight. Bold lines indicate median, box hinges represent first and third quartiles, individual data points displayed and visualized with density curves.

Results

- Controlled rest was taken on 63.4% (*n* = 59) of the analyzed flights (*n* = 28 pilots)
- Pilots with higher KSS ratings pre-flight were more likely to take controlled rest on the subsequent flight (*b* ± SE: 1.00 ± 0.33; *OR* = 2.71, 95% CI [1.43, 5.16]; *p* = .002; $R^2_{Marginal}$: .27, $R^2_{Conditional}$: .49)

Conclusions

- Our results suggest that subjective sleepiness prior to a flight may be predictive of the decision to take controlled rest later in the flight
- Consideration of other factors – operational, physiological, and qualitative – are needed in order to better understand the decision to take CR

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