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Increasing pain levels associated with proportion of shiftwork.

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Abstract

Introduction

Approximately 30% of the US workforce participates in a shiftwork schedule that requires individuals to be awake and work at times when they would typically be asleep. Shiftwork is associated with increased risk for adverse health outcomes, including higher incidence of pain compared to non-shiftworkers. However, it is unclear how transitioning into a shiftwork schedule affects pain and any potential causes of pain.

Methods

Pain levels were self-reported on a 10-point scale in 20 participants (8 females), ages 23-49 (average 35.5), who had no prior history of shiftwork, cardiovascular disease, or diabetes. Participants were assessed for pain while working a daytime schedule and then again after transitioning to a shiftwork schedule for 90-days. Body mass index (BMI) was also assessed at both timepoints to examine the relationship between pain and a common comorbidity with pain (e.g., increase in BMI). Shift schedules were obtained from the employer and shiftwork was defined as >33% of hours worked outside of 0700-1800. Pearson correlations were used to assess the relationship between changes in pain, BMI, and percentage of shiftwork across the first 90 days.

Results

At 90-days of shiftwork there were no significant increases in pain (2.45 ± 2.01 vs 2.95 ± 1.79 ; $p=0.41$) or BMI (30.8 ± 7.5 kg/m² vs 30.2 ± 7.4 kg/m²; $p=0.79$) and no significant association between a change in pain and BMI ($r=0.18$; $p=0.49$). However, the percent of days working shiftwork was significantly correlated with increases in pain ($r=0.47$; $p=0.04$).

Conclusion

Though there were no overall increases in pain upon transitioning to shiftwork, there was a significant association between changes in pain with percent of days working shiftwork.

Additional work is needed to determine the time course of potential changes in pain and when potential interventions can be implemented. These findings highlight the need to develop interventions that could mitigate shiftwork related increases in pain.