



# Implications of Chronodisruption on Physical and Mental Health in College Students

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## Introduction

- Chronodisruption (CD) is a chronic misalignment between biologically preferred sleep-wake schedules and schedules dictated by external demands.<sup>(1)</sup>
- College students are vulnerable to sleep problems and might experience CD due to their shifting circadian rhythms.<sup>(2)</sup>
- CD is associated with increased BMI and symptoms of depression and anxiety in college students.<sup>(3, 4)</sup>
- Developmental (e.g., age) and environmental (e.g., place of residence) factors may contribute to CD.<sup>(5)</sup>

## Aims

- Examine the relation between chronodisruption and college students' age and place of residence.
- Examine the relation between chronodisruption and depressive symptoms, anxiety symptoms, and body mass index (BMI).

## Method

### Participants

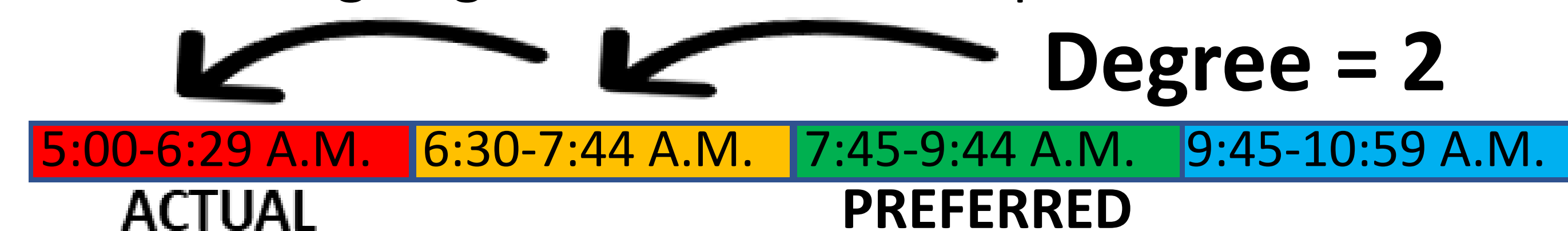
- Undergraduate Students ( $n = 402$ ) who were enrolled in a larger study about eating behavior and food marketing
- 80.5% female
- 59.4% White, 19% East Asian, 6.9% African American

### Procedure

- Participants completed a survey at Time 1, followed by a daily diary for up to seven days.
- Variables collected at Time 1:
  - Demographics** including age and residence
  - BMI:** Calculated using self-report height & weight
  - Anxiety Symptoms:** DASS-21<sup>(6)</sup>
  - Depressive Symptoms:** CESD-10<sup>(7)</sup>
  - Preferred Wake Time:** One item from the Morningness-Eveningness Questionnaire<sup>(8)</sup>
- Variable collected with 7-Day Daily Diary:
  - Actual Daily Wake Times:** "What time did you wake up this morning?"

## Method, cont.

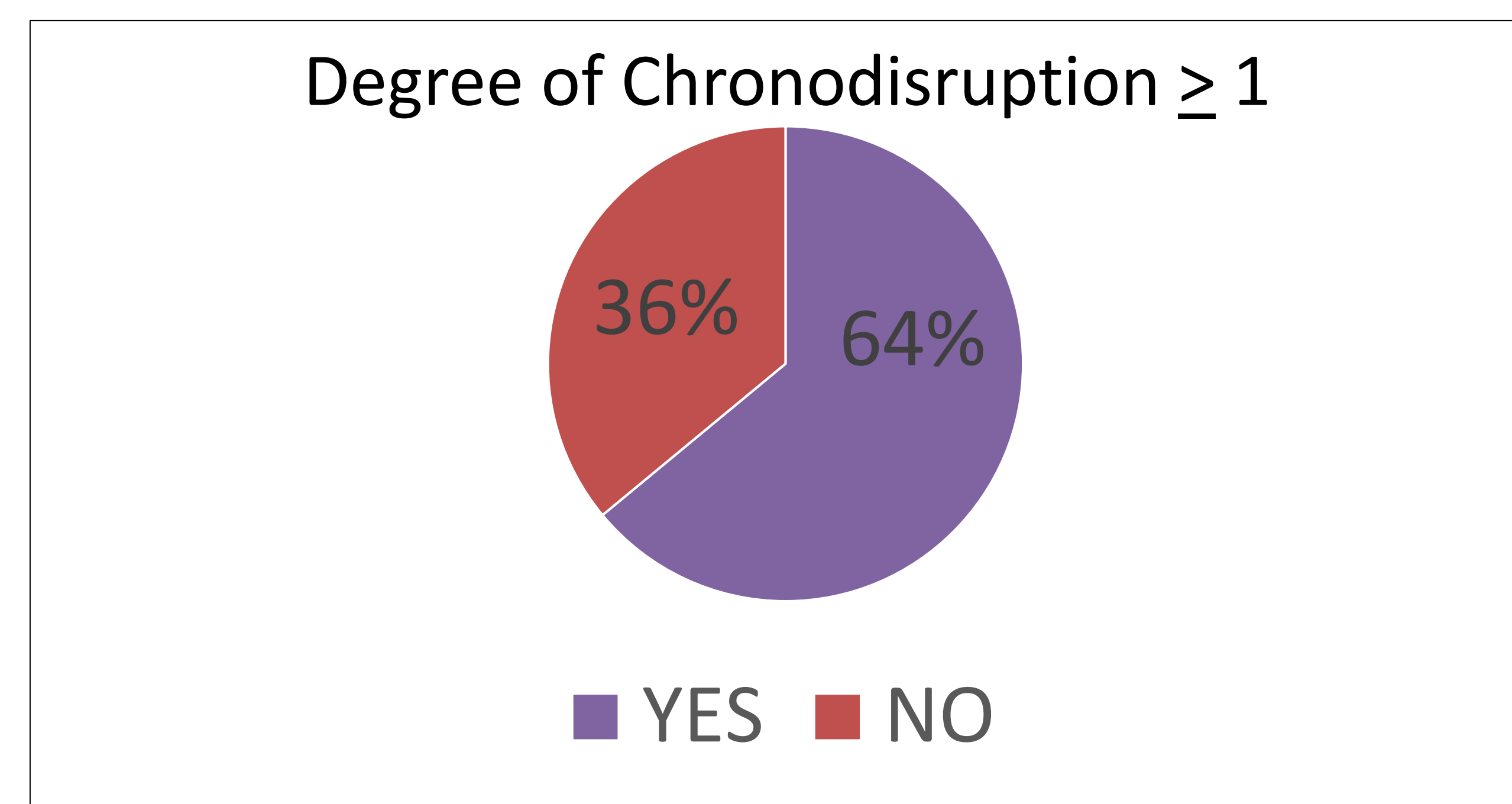
- Calculating degrees of chronodisruption:



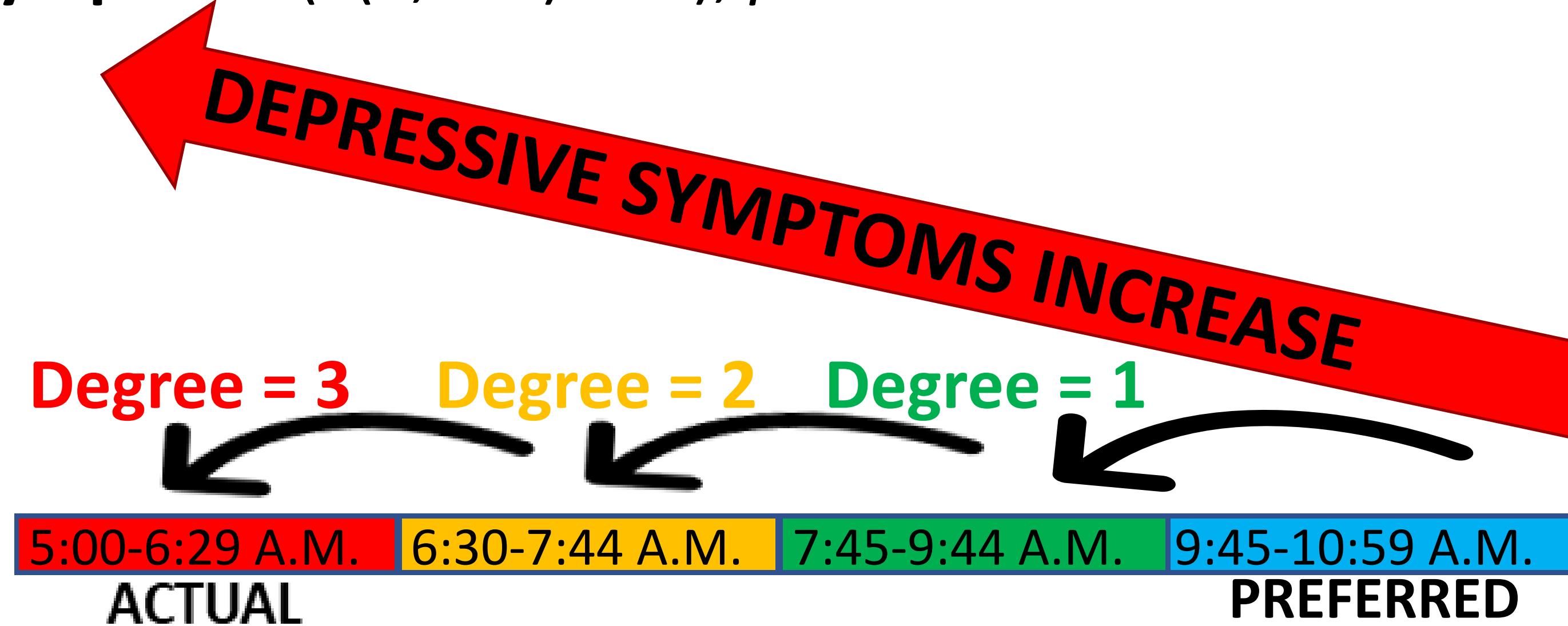
- Calculated by placing waketimes into categories and taking the difference across categories (seeing how far apart they are).

## Results

More than half of participants reported chronodisruption.



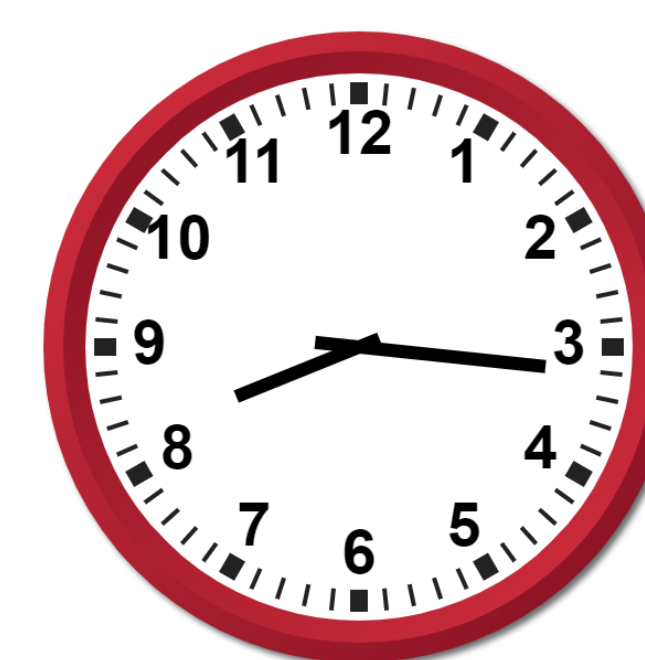
Linear regressions indicate that **higher degrees of chronodisruption are associated with more depressive symptoms** ( $F(1,395)=7.5$ ,  $p<.01$ ).



ANOVAs indicated that **the average weekday waketime of students living with a parent was significantly earlier** than that of students living in residential halls or off-campus apartments ( $F(2,395)=22$ ,  $p<.01$ ).



With Parent or Guardian  
7:49 A.M.



Off-Campus Apartment  
8:16 A.M.

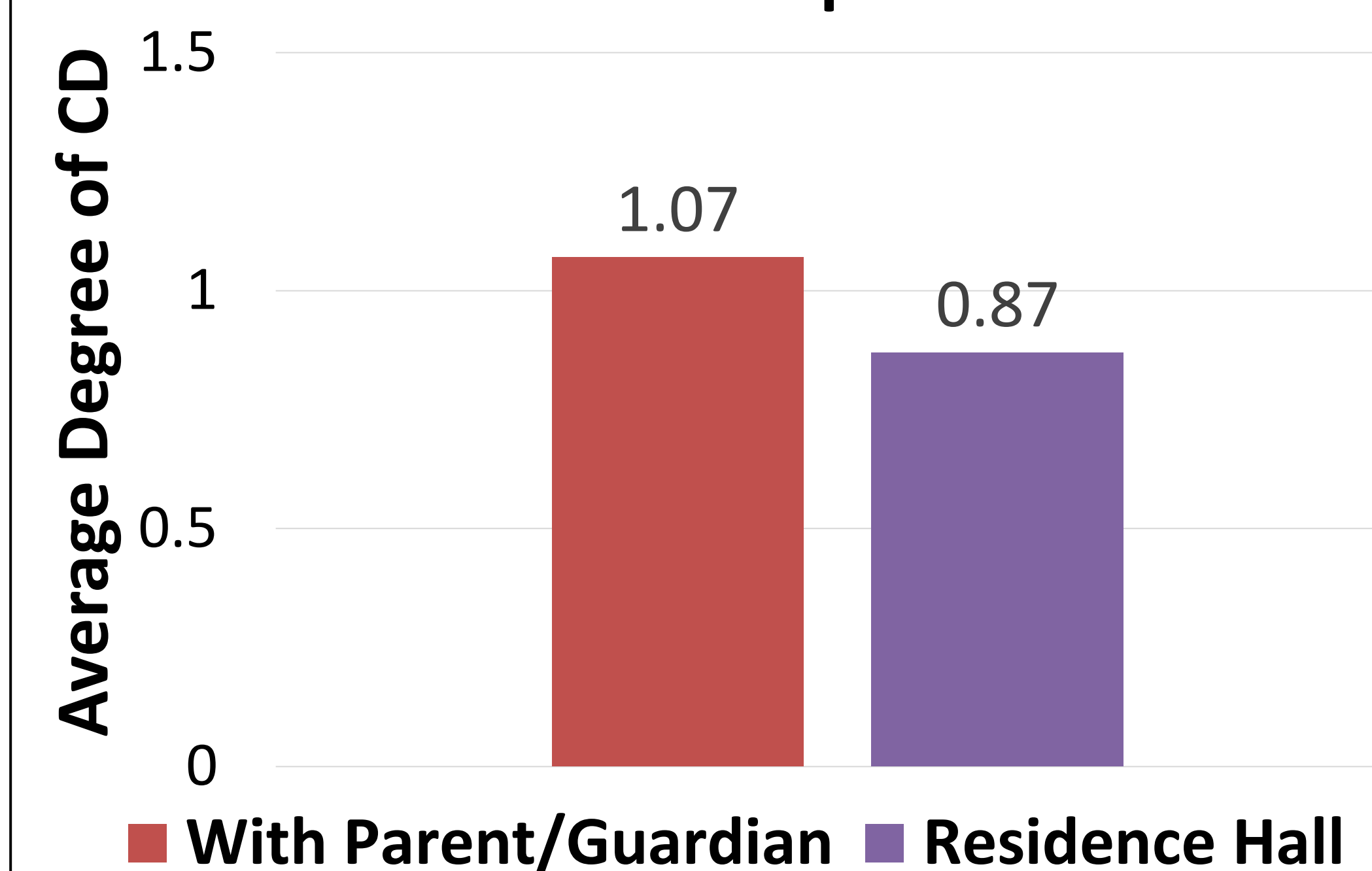


Residence Hall  
8:33 A.M.

## Results, cont.

ANOVAs indicated **greater degrees of chronodisruption among students living with a parent or guardian** compared to those living in residential halls ( $F(3,391)=3.5$ ,  $p<.05$ ).

### Average Degree of Chronodisruption



## Discussion

- Depressive symptoms are associated with greater discrepancies between actual and preferred wake times.
- CD may exacerbate symptoms of depression.
- Symptoms of depression may affect individuals' wake times (i.e., trouble sleeping).
- College students living with parents experience higher degrees of CD, possibly due to earlier weekday wake times.

### Future Directions

- More research is needed to understand the importance of consistent wake times.
- Interventions that encourage students to adhere to consistent wake times may be associated with better mental health.

## References

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