# Sex and Age Differences in Anxiety and Depression among a Cohort of Cannabis Consumers and Non-Consumers: Preliminary Results from the Herbal Heart Study

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## Background

- Men and women are affected by cannabis differently and experience anxiety and depressive disorders at different rates.
- There is concern that cannabis use has negative impacts on the mental health of young adults who may use it to alleviate symptoms of depression and anxiety .
- The relationship between sex, age, and cannabis use on mental health is unclear.
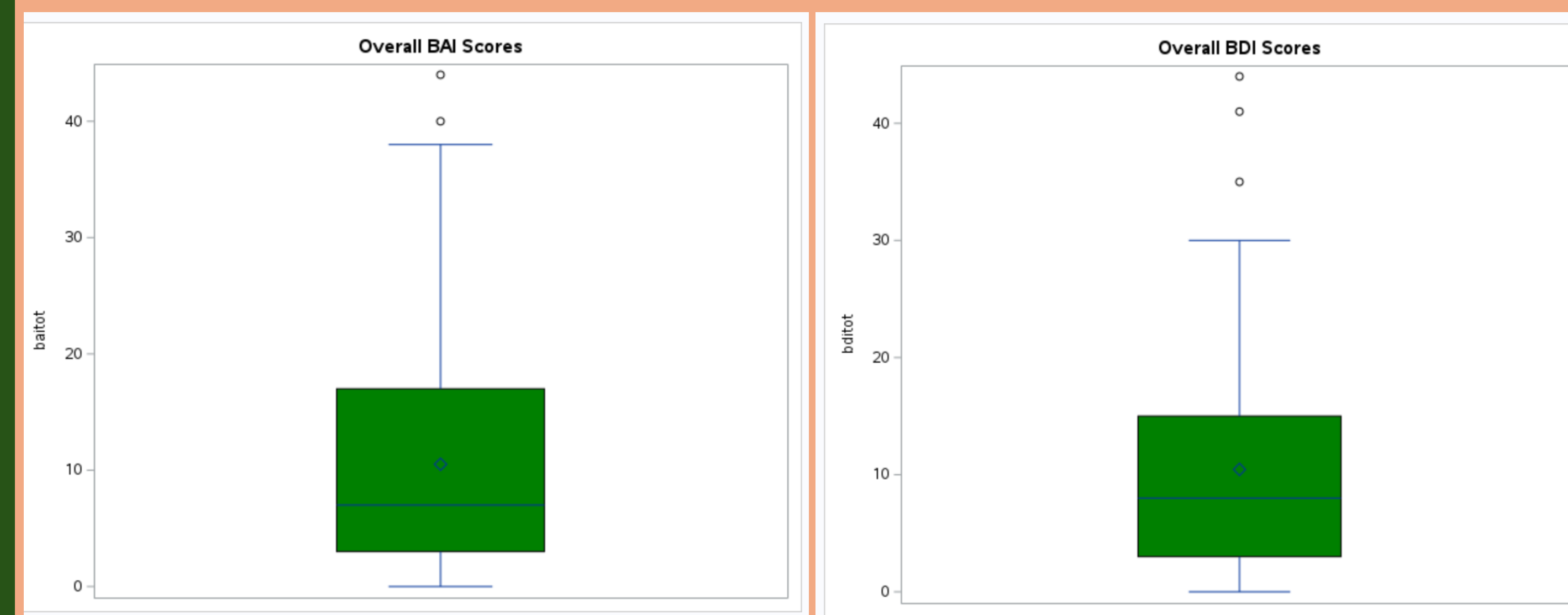
## Objective

- To evaluate if there are sex-based and aged-based differences in anxiety and depression among cannabis consumers (CB+) and non-consumers (CB-).

## Methods

- Data were utilized from the Herbal Heart Study which investigates the relationship between cannabis use and cardiovascular risk.
- The Beck Anxiety Inventory (BAI) and the Beck Depression Inventory (BDI) are 21 question surveys that classify anxiety and depressive symptoms that participants experienced during the preceding week as minimal, mild, moderate, or severe.
- BAI and BDI scores were compared among CB+ and CB- in the overall sample and then stratified by sex with $t$-tests and Mann-Whitney tests.
- This analysis was repeated for Hispanic and non-Hispanic participants, and among participants aged 18-26 and 27-35.
- Chi-Square tests of independence and Fisher tests were used to see if cannabis use was related to severity of BAI and BDI scores.

## Results



Figures 1 & 2: Graphs comparing the distributions of BAI and BDI scores, respectively, for the overall sample.
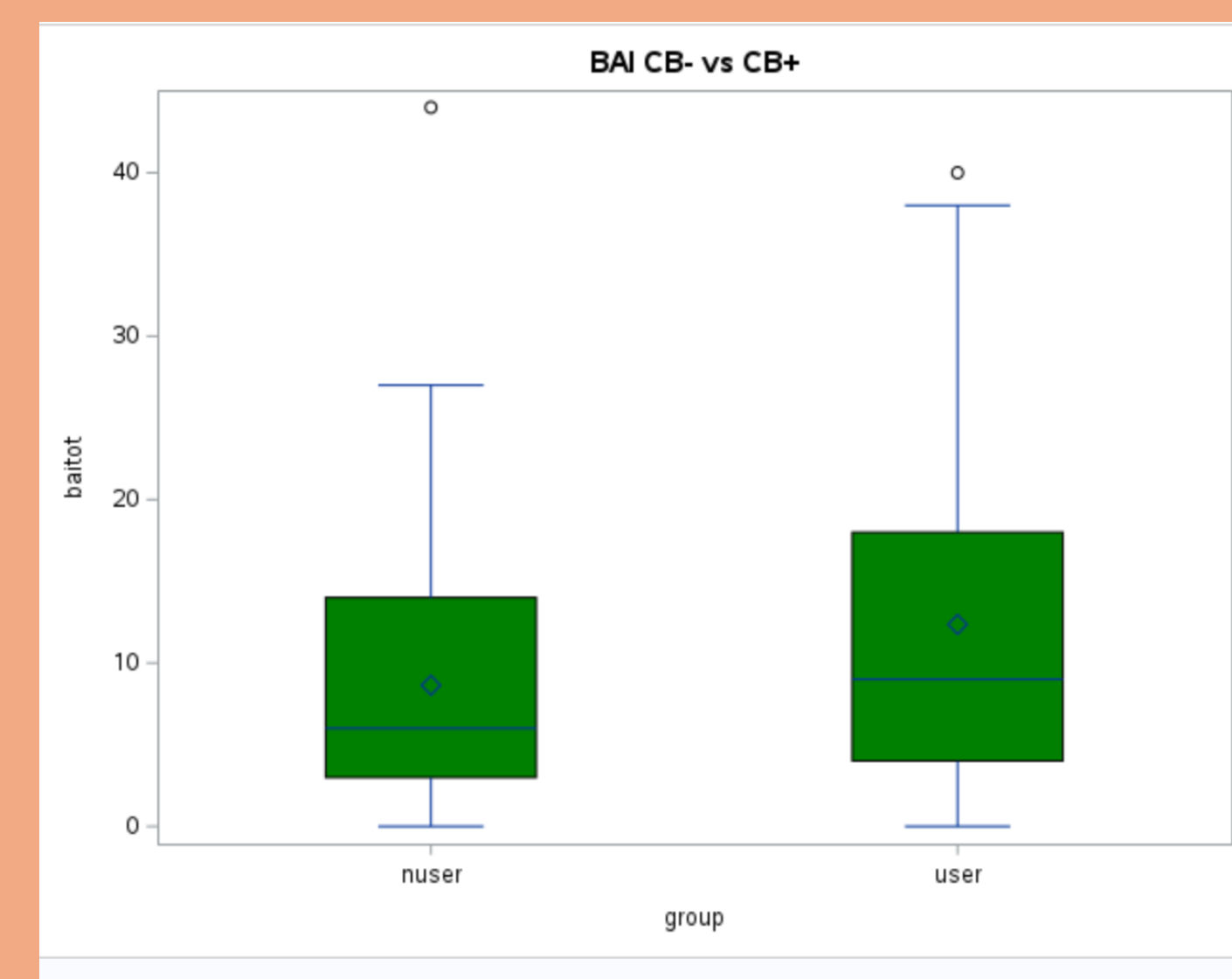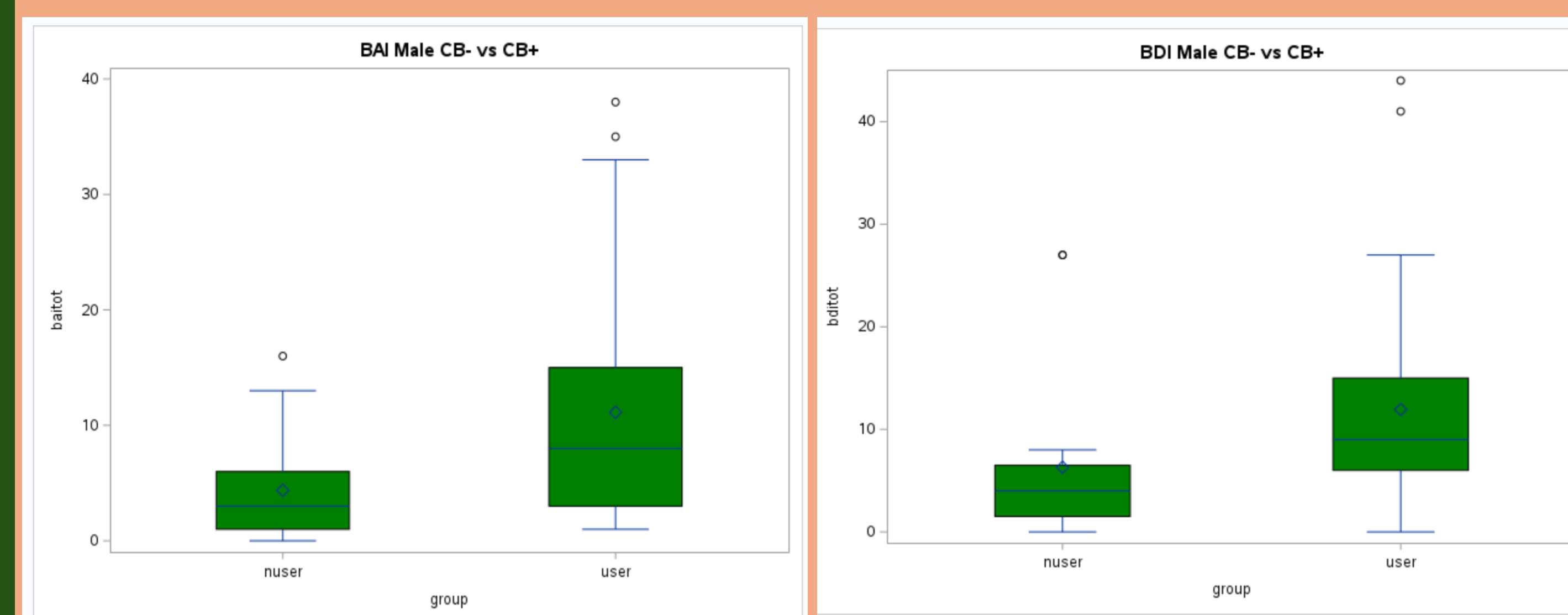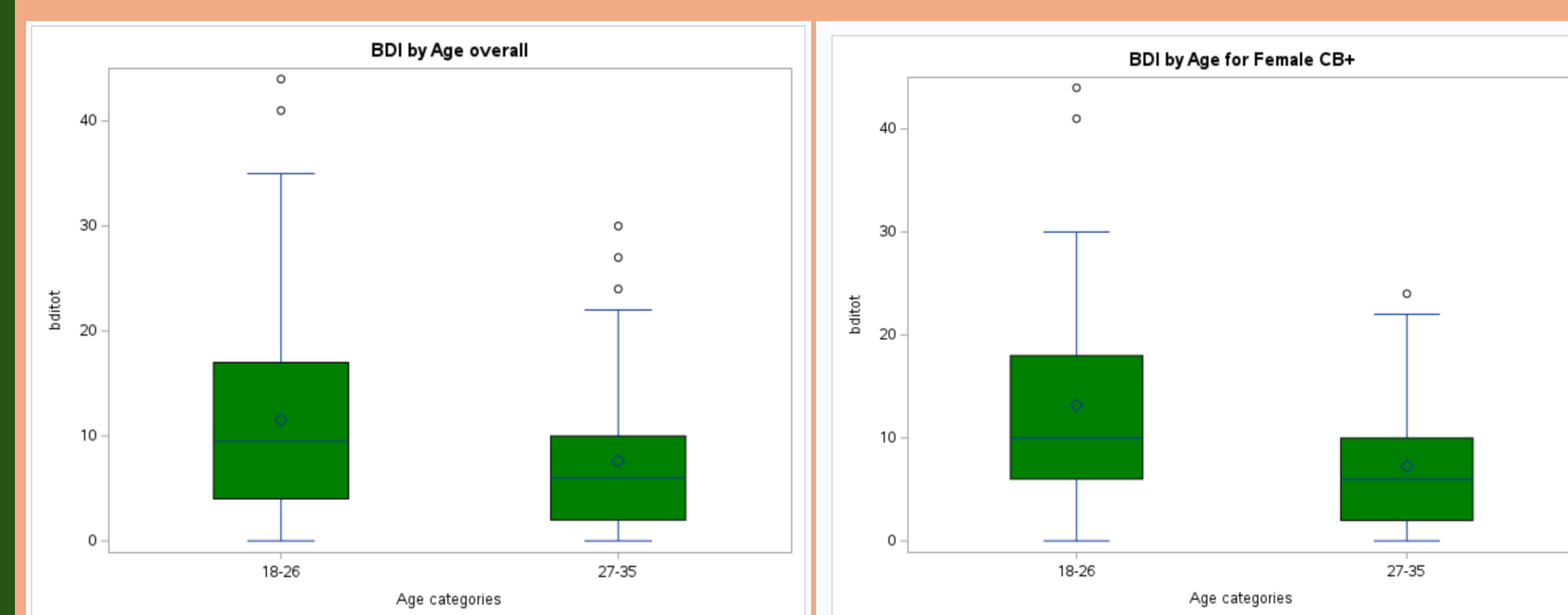


Figure 3: A graph comparing the distribution for BAI scores between CB- and CB+.



Figures 4 & 5: Graphs comparing the distributions of BAI and BDI scores between male CB- and CB+, respectively.



Figures 6 &7: Graphs comparing the distributions of BDI scores by age overall and for female CB+, respectively.

## Key Findings

- Among 150 participants [mean age: 24.6y (SD=4.49)], 66.7% were female, 51.3% were Hispanic/Latinx, and 50.7% were CB+.
- CB+ had significantly higher BAI scores than CB- (p=0.03)
- Participants aged 18-26 had significantly higher BDI scores than those aged 27-35 (p=0.018).
- No significant differences in BDI score between CB+ and CB- overall (p=0.15) or for BAI and BDI scores between Hispanic and non-Hispanic participants.
- Male CB+ had significantly higher BAI and BDI scores than CB- (p=0.015 and p=0.003, respectively)
- Female CB+ aged 18-26 had significantly higher BDI scores than female CB+ aged 27-35 (p=.04).
- Cannabis use was not associated with severity of BAI and BDI scores.

## Conclusion

- Sex and age-based differences were found in this cohort of cannabis consumers.
- Additional research is needed to evaluate the relationship between sex, age, and cannabis use.
- More research needed to examine cannabis as a coping mechanism for anxiety and depressive symptoms
- Interventions to lower depressive and anxiety symptoms among male cannabis users and young adults should be developed.

## Acknowledgements