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Gender and Ethnic Differences in Sound Tolerance

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Introduction

Decreased Sound Tolerance (DST) conditions involve negative reactions to sounds that typically do not elicit the same reaction in others^{1,2,3}. DSTs include:

- **Misophonia:** a strong, extreme emotional reaction (e.g., anger, disgust, fear) to specific meaningful sounds (e.g., chewing, slurping, tapping)^{1,2,5}
- **Hyperacusis:** loudness sensitivity to ordinary sound levels below the normal loudness sensitivity thresholds^{2,7}
- **Tinnitus:** continuous ringing or buzzing of the ears^{1,2}

Research Questions:

1. What is the relationship of DST variables with biological sex and ethnicity?
2. Are there any significant sexual and ethnic differences for those who endorsed DST symptoms?
3. Are these differences consistent with other mental health issues?

Significance:

1. This field is new and conceptualized using a neurological lens¹, but a psychological perspective provides better understanding. This information can influence the way treatments are formed to care for patients with DST.
2. There is limited information on differences in DSTs associated symptoms and demographics. This information would support a psychological perspective of DSTs.
3. DSTs are prevalent and associated with significant functional impairment¹. Identifying risk factors and coping strategies (e.g., substance use) can further inform intervention and treatment.

Methods

- 1,200 college students from a public university on the East Coast participated in a survey their Freshman year of college⁴. The DST questions were asked using follow up surveys in their Sophomore and Junior years.
- Survey included questions assessing demographics and DST conditions

Screening variables used:

Tinnitus: Do you experience ringing, roaring, hissing or buzzing in your ears or head?

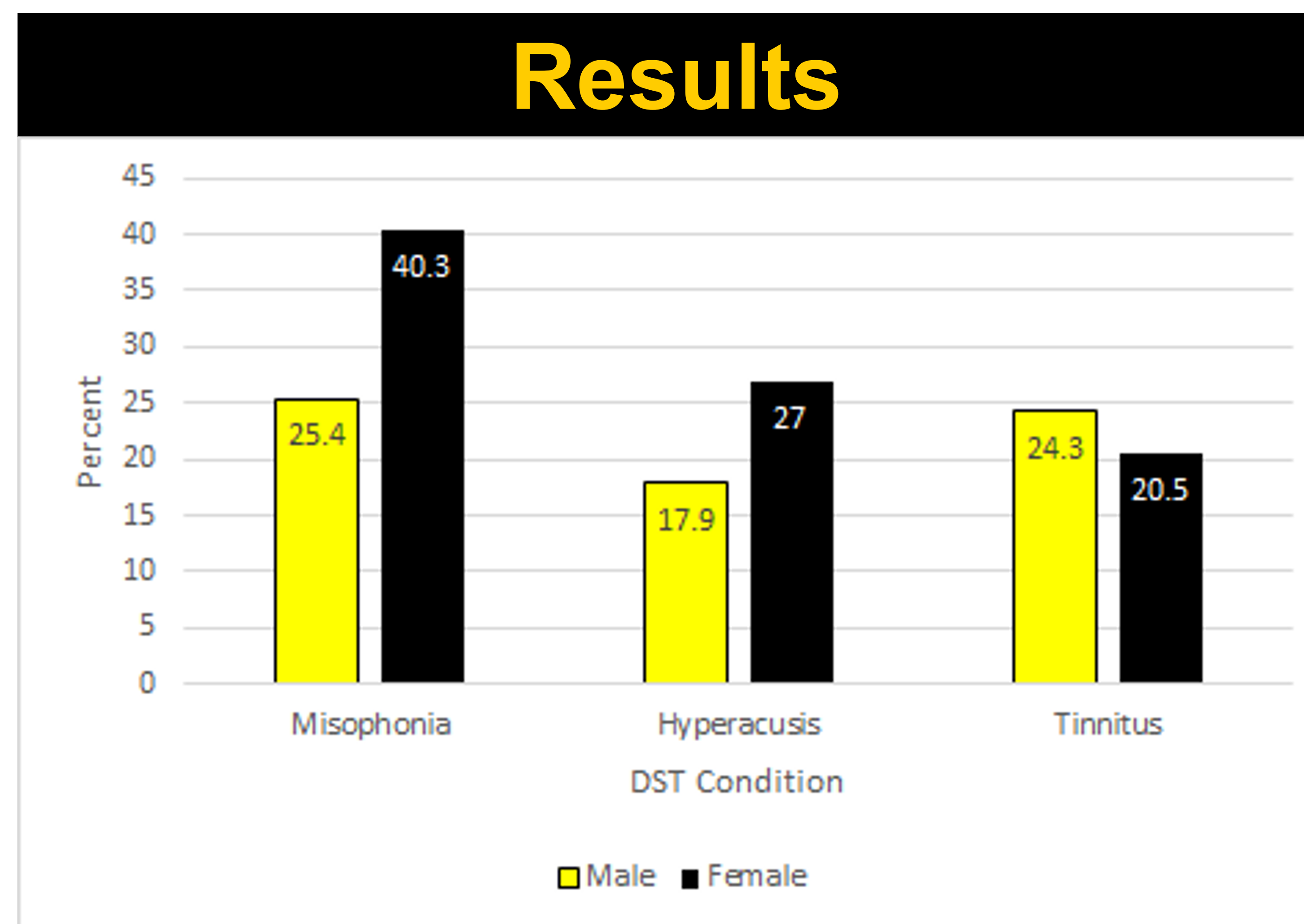
Misophonia: Compared to other people, are you sensitive to certain sounds made by other people?

Hyperacusis: Compared to other people, are you unusually sensitive to or have a reduced tolerance for sounds, even low or moderate volume sounds? (Ex: traffic, TV playing in background etc.)

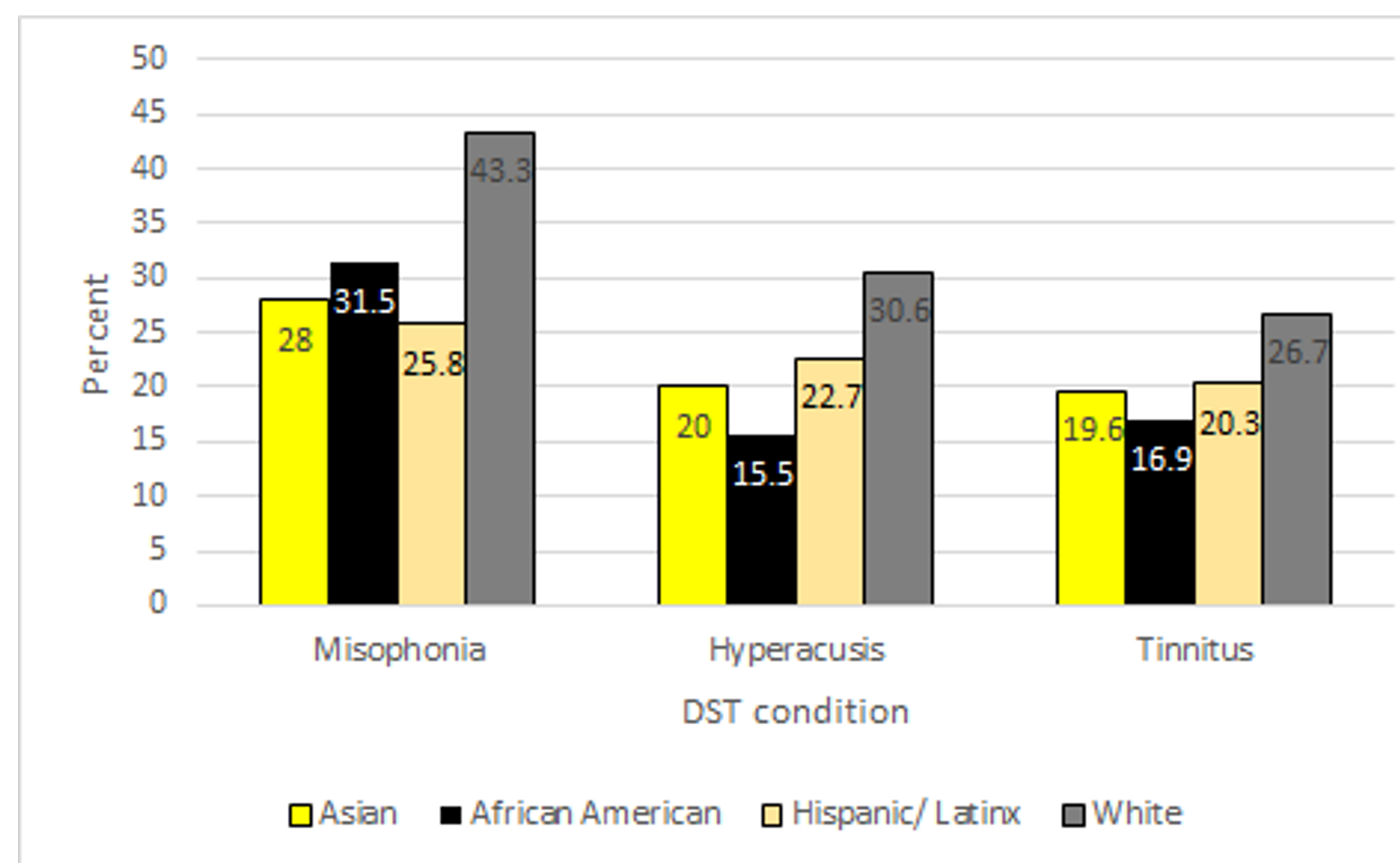
Anxiety: Four questions from the symptom checklist (SCL-90)³ were used to assess symptoms of anxiety

Analyses: Chi-square, independent samples t-test, ANOVA

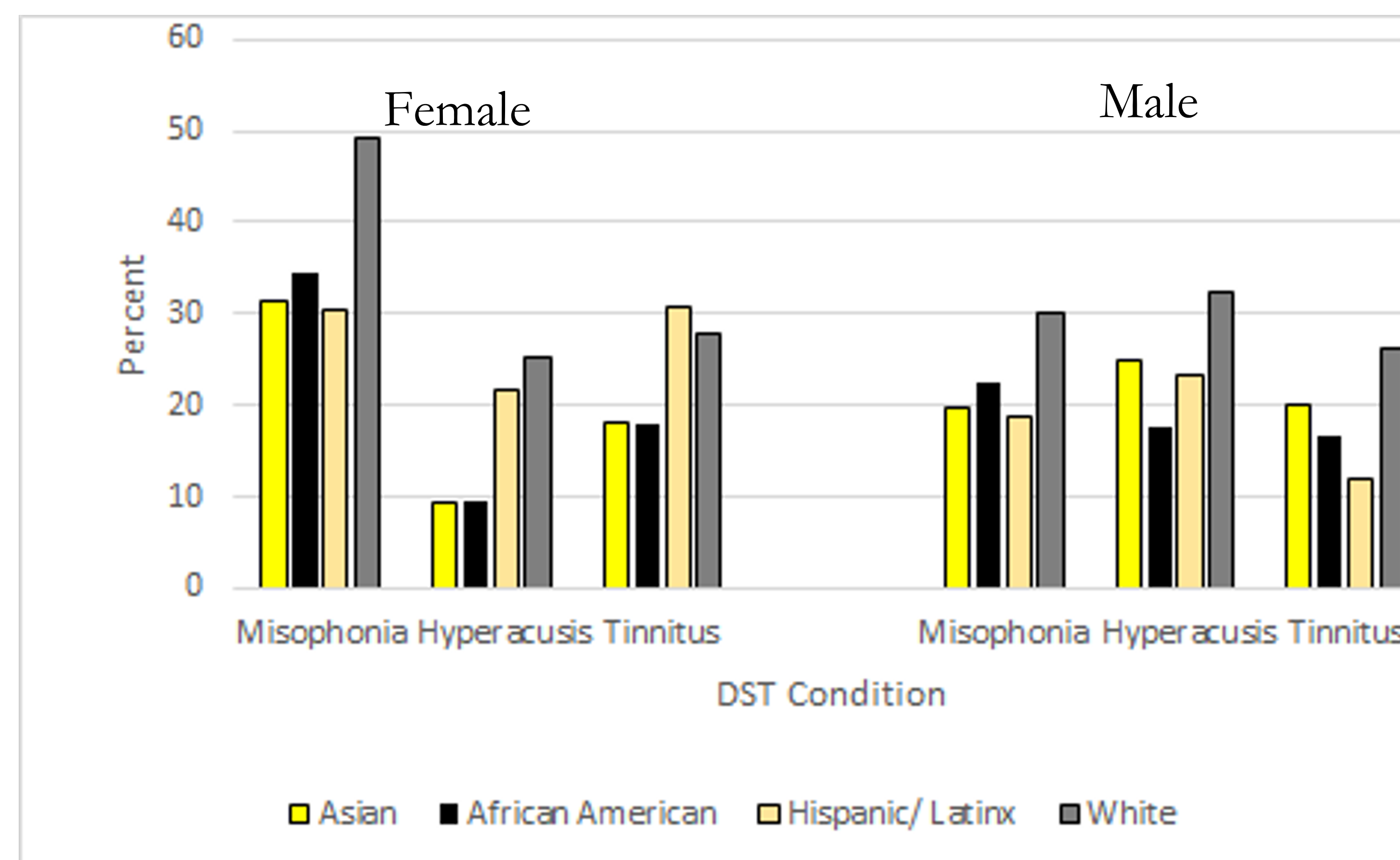
Results



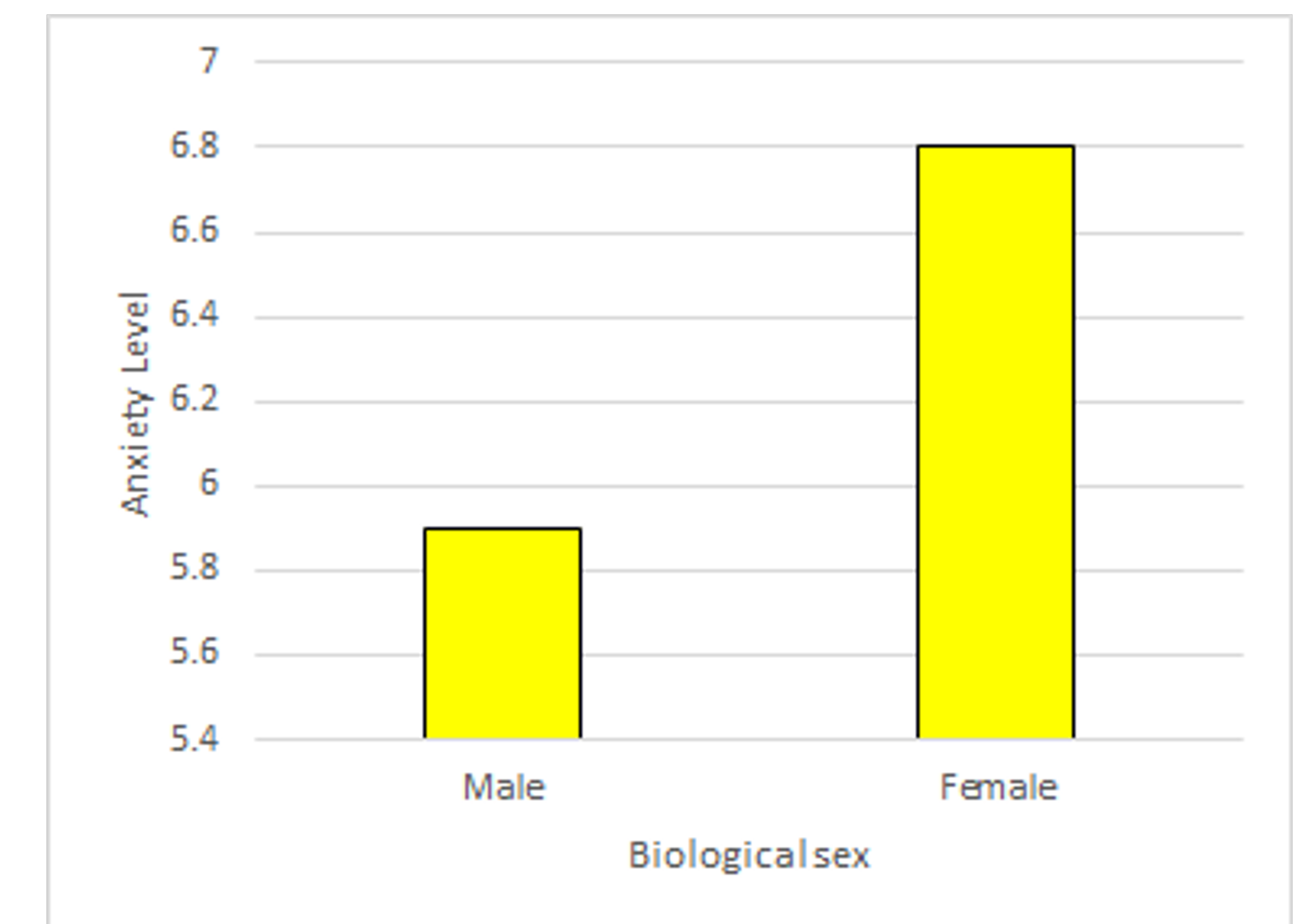
Women reported greater hyperacusis and misophonia than men.



White individuals reported higher misophonia, hyperacusis and tinnitus than any other ethnic group.



We further analyzed ethnicity differences of DST conditions with biological sex. Ethnic differences in DST are larger for women than men. White women reported higher misophonia than any other group.



Women reported higher anxiety compared to men.

Conclusion

- This data suggests that women and white individuals are more likely to report more negative responses, specifically related to misophonia and hyperacusis.
- Gender differences in DST are consistent with findings that women report higher anxiety; this suggests that DST conditions are psychological because it shares common characteristics of negative affectivity with anxiety.

Future Directions:

- Replicate these findings using quantifiable variables. We suggest using verified scales (e.g., the Misophonia Questionnaire⁸, the Hyperacusis Questionnaire⁶, and the mini TQ).
- Instead of solely examining biological sex, it will be important to examine gender differences in DST symptoms.
- Analyze relationships between common coping habits, such as substance use, alcohol use and binge eating.
- Use these findings to develop and test treatments to help individuals with DST.



For further analyses, acknowledgments and references, please scan this QR. Code. Open the camera and scan the barcode