



The Association Between Weight Misperception and Mental Health in Adolescents



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Introduction

- While adolescent obesity is a prominent public health concern, recent evidence suggests that an individual's self-perception of weight may be a more significant predictor of mental health outcomes than actual BMI (Schiefelbein et al., 2012).
- Weight misperception is associated with increased psychological distress, particularly among "Over-Estimators" who perceive themselves as overweight despite having a healthy BMI (Christoph et al., 2018).
- Misperceptions are often gendered, with females showing significantly higher rates of weight related mental health risks compared to males (Christoph et al., 2018, Warnick et al., 2022). This study examines how these perception gaps contribute to both clinical risks (suicide ideation) and chronic daily distress among high school adolescents.

Results

Figure 1: Bivariate

- A Chi-Square analysis revealed a significant association between Weight Perception Group (categorical variable) and Mental Health Risk (binary variable).
- An extremely low p-value of <0.001 demonstrated that an individual's subjective view of their body is a statistically significant predictor of psychological distress.
- "Over-Estimators" (58.9%) and "Accurate Overweight" (57.1%) respondents reported the highest proportions of high mental health risk.

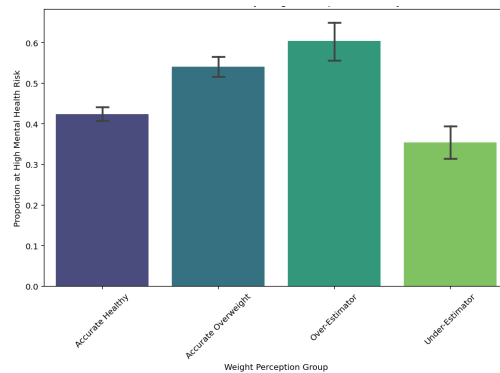


Figure 1: Bar graph showing the relationship between weight perception and risk of mental health issues

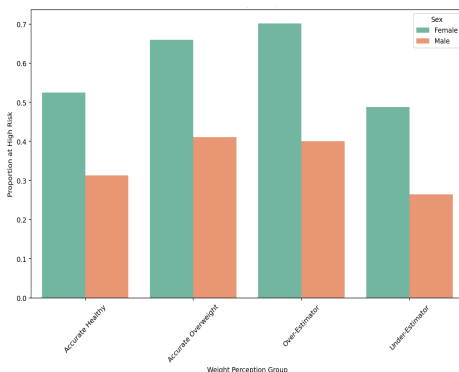


Figure 2: Bar graph showing the association between weight perception and mental health risk by sex

Figure 3: Bivariate

- Analysis of Variance (ANOVA) revealed that the frequency of distress differs significantly based on an individual's weight perception accuracy.
- Weight perception group significantly impacts the frequency of poor mental health days ($F=35.99, p<0.001$).
- Post-hoc Tukey HSD testing confirmed that "Over-Estimators" report a significantly higher mean frequency of distress than "Accurate Healthy" peers ($p<0.001$), suggesting that over-perceiving weight is more directly linked to chronic, day-to-day psychological distress.

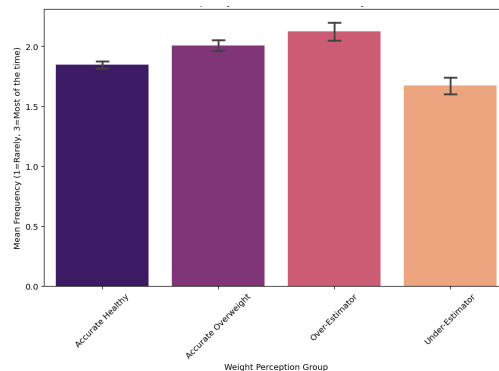


Figure 3: Bar graph showing the relationship between weight perception and frequency of poor mental health

Research Questions

- To what extent is weight perception accuracy associated with mental health risk and how does sex influence that relationship?
- Does the frequency of poor mental health vary significantly across weight perception groups?

Methods

Sample

- Respondents ($n=6,321$) were drawn from the Adolescent Behavioral and Experiences Survey (ABES) of 2021, a nationally representative sample of students in grades 9-12 attending high school during the COVID-19 pandemic.

Measures

- Weight Perception Group (Accuracy):** Categorized into Accurate Healthy, Accurate Overweight, Over-Estimator, and Under-Estimator by comparing BMI to self-perceived weight.
- Mental Health Risk:** Binary variable (1=High, 0=Low) based on reported sadness, hopelessness, or suicide ideation over the prior year.
- Poor Mental Health:** Frequency of "not good" mental health over a period of 30 days (1=Rarely, 2=Sometimes, 3=Most of time).
- Covariates:** Controls for sex (Male, Female)

Discussion

- This study highlights that internal body image plays more of a role in psychological well-being than traditional health indicators like BMI.
- The increased risk and frequency of distress among those who see themselves as "Over-Estimators" suggest that simply believing they are overweight can lead to the same internal struggles that often come with weight-related stigma.
- While sex influences the baseline risk, the patterns observed in the graphs indicate that the psychological impact of weight misperception affects everyone, not just one sex.
- Interestingly, the lower levels of distress reported by "Under-Estimators" hint at a possible protective psychological buffer. Having a resilient self image might help these students cope with the usual stressors of being seen as overweight.
- These insights suggest schools today should shift their focus from solely weight loss and instead prioritize reducing harmful weight stigma and promoting positive self body images.

References

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- Schiefelbein, E. L., Mirchandani, G. G., George, G. C., Becker, E. A., Castrucci, B. C., & Hoelscher, D. M. (2012). Association Between Depressed Mood and Perceived Weight in Middle and High School Age Students: Texas 2004-2005. *Maternal and Child Health Journal, 16*(1), 169-176. <https://doi.org/10.1007/s10995-010-0733-1>
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