

Do Measures of Psychological Wellness Vary with Self-Perception of Body Weight Status?

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Introduction

Previous research indicates that:

- A significant proportion of young adults misperceive their weight status¹
- Weight misperception may decrease engagement in healthy behaviors^{2,3}
- Weight misperception may increase engagement in risk behaviors⁴
- Weight status underestimation is associated with optimistic bias, which may limit adoption of healthy behaviors⁵
- Weight status underestimation has been associated with beneficial resilience against psychosocial consequences of obesity, compared with accurate perception⁶

It remains unknown whether there may be a difference in self-reported factors of psychosocial wellness between subjects who overestimate versus those who underestimate their body weight.

Research Objectives

The purpose of this project is to investigate associations between weight status misperception and measures of:

- Life satisfaction
- Stress management
- Social/emotional support
- Weight change intent

Methods

Data were collected between 2008-2023 from the College Health and Nutrition Assessment Survey (CHANAS), an ongoing cross-sectional study of University of New Hampshire undergraduates, ages 18-24 years (IRB #3329 and #5524).⁷

Weight self-perception, weight change intent, life satisfaction, and social/emotional support, were self-reported via Qualtrax survey. BMI (kg/m²) was calculated via height and weight measurements taken by technicians, then compared with subject self-perception of weight status to determine self-perception accuracy.

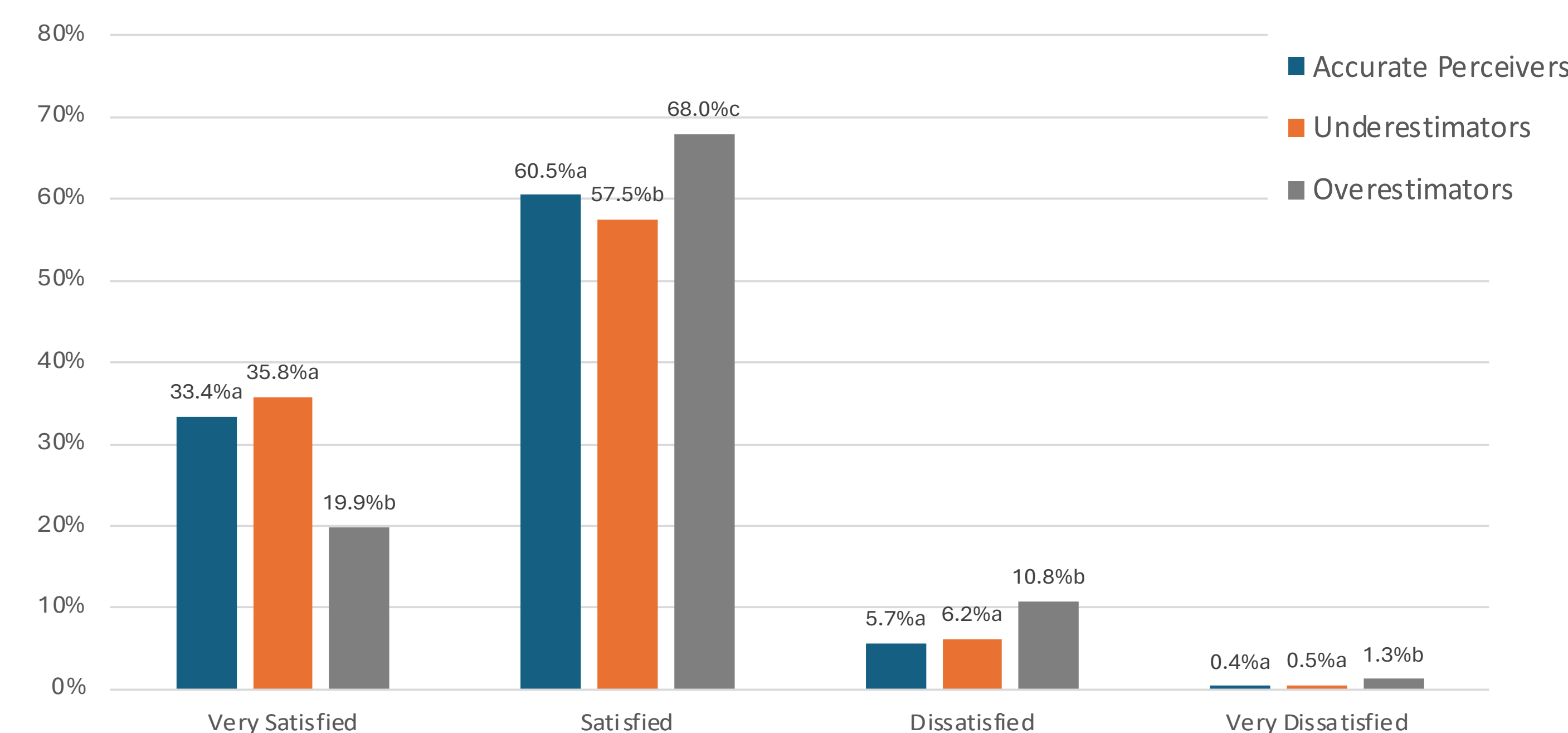
Chi-square analysis was used to evaluate differences between self-perception accuracy categories, while ANCOVA was used to compare means, adjusting for sex. A *p*-value of <.05 was used for statistical significance.

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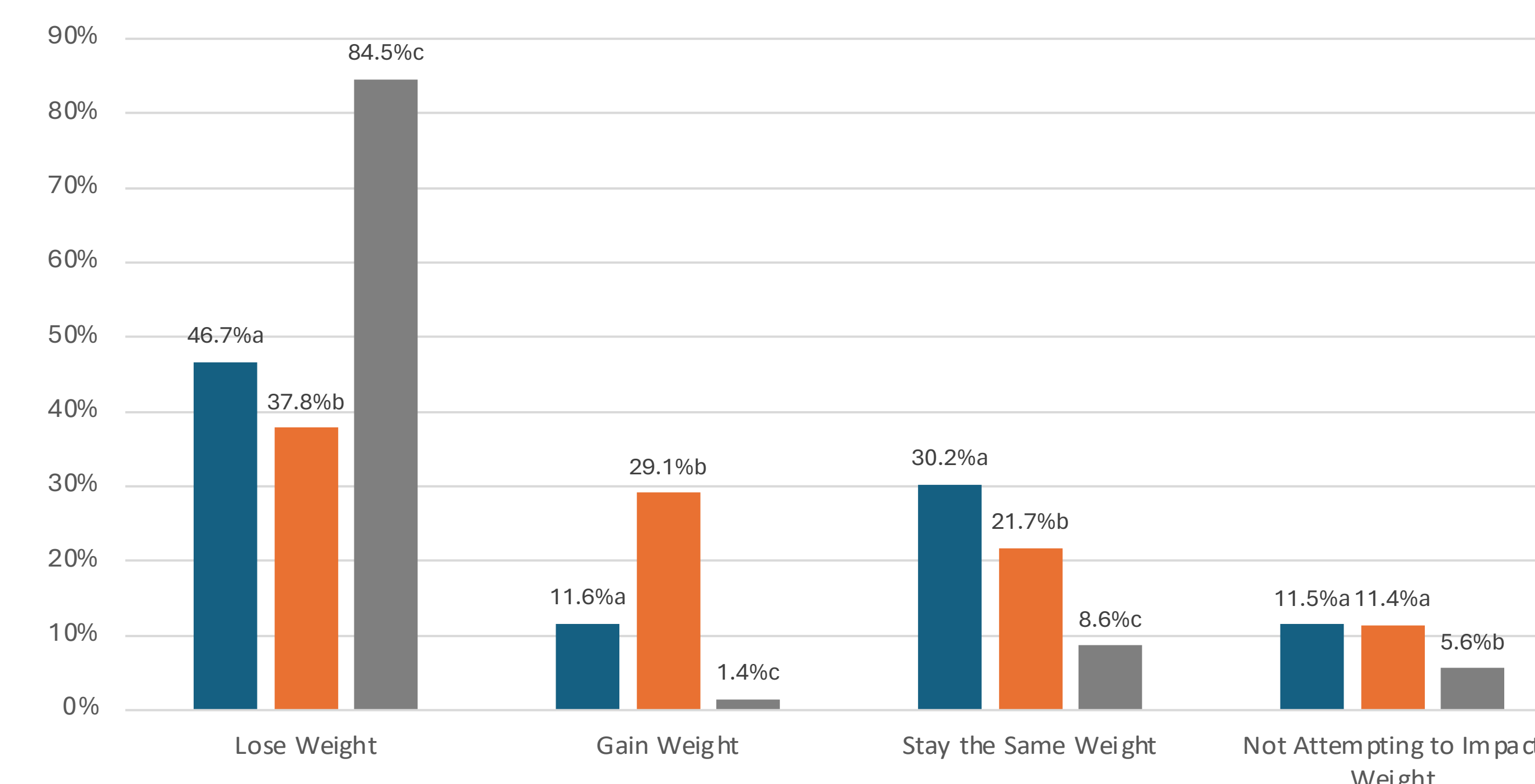
Results

| | Weight Perception Category | | | | | | | |
|------------------------------------|---------------------------------------|-------|-----------------------------------|-------|---------------------------------|-------|-------------------------------|-------|
| | Accurate Perceivers n = 5647 68.9% | | Underestimators n = 1600 19.5% | | Overestimators n = 953 11.6% | | ALL SUBJECTS N = 8200 100% | |
| Race/Ethnicity | | | | | | | | |
| Hispanic subjects | 109 _a | 3.0% | 37 _a | 3.4% | 25 _a | 3.9% | 171 | 3.2% |
| White | 5275 _a | 94.5% | 1461 _b | 92.8% | 849 _b | 91.8% | 7585 | 93.9% |
| Asian | 124 _a | 2.2% | 37 _a | 2.4% | 39 _b | 4.2% | 200 | 2.5% |
| Black | 45 _a | 0.8% | 26 _b | 1.7% | 5 _a | 0.5% | 76 | 0.9% |
| Other Races/Multirace | 137 _a | 2.5% | 50 _a | 3.2% | 32 _a | 3.4% | 219 | 2.7% |
| Major Grouping | | | | | | | | |
| Nutrition | 356 _a | 6.3% | 60 _b | 3.8% | 57 _a | 6.0% | 473 | 5.8% |
| Allied Health | 1213 _a | 21.5% | 335 _a | 20.9% | 191 _a | 20.0% | 1739 | 21.2% |
| Non Nutrition/Allied Health | 4078 _a | 72.2% | 1205 _b | 75.3% | 705 _{a,b} | 74.0% | 5988 | 73.0% |
| Mean Age (yrs) ± SD | 18.8 ± 1.1 | | 19.1 ± 1.2 | | 18.9 ± 1.2 | | 18.9 ± 1.1 | |
| BMI Grouping | | | | | | | | |
| Underweight <18.5 | 175 _a | 3.1% | 0 _b | 0.0% | 116 _c | 12.2% | 291 | 3.5% |
| Normal Weight 18.5-24.9 | 4505 _a | 79.8% | 502 _b | 31.4% | 797 _c | 83.6% | 5804 | 70.8% |
| Overweight 25.0-29.9 | 861 _a | 15.2% | 768 _b | 48.0% | 40 _c | 4.2% | 1669 | 20.4% |
| Obese 30.0 and Over | 106 _a | 1.9% | 330 _b | 20.6% | 0 _c | 0.0% | 436 | 5.3% |
| Mean BMI (kg/m²) | 22.9 ± 3.2 | | 25.9 ± 4.6 | | 22.7 ± 2.4 | | 18.9 ± 1.1 | |
| Body Weight Self-Perception | | | | | | | | |
| Very Underweight | 11 _a | 0.2% | 16 _b | 1.0% | 0 _a | 0.0% | 27 | 0.3% |
| Slightly Underweight | 164 _a | 2.9% | 507 _b | 31.7% | 0 _c | 0.0% | 671 | 8.2% |
| About the Right Weight | 4505 _a | 79.8% | 804 _b | 50.2% | 111 _c | 11.6% | 5420 | 66.1% |
| Slightly Overweight | 861 _a | 15.2% | 273 _a | 17.1% | 791 _b | 83.0% | 1925 | 23.5% |
| Very Overweight | 106 _a | 1.9% | 0 _b | 0.0% | 51 _c | 5.4% | 157 | 1.9% |

Life Satisfaction by Weight Perception Category



Weight Change Intent by Weight Perception Category



Note: distinct letter subscripts denote differences between groups, *p*<.001

Men and women differ (*p*<.001) in their experience of weight status misperception:

- Men are more likely to underestimate (37.4% vs. 11.6%)
- Women are more likely to overestimate (14.7% vs. 4.6%)

Significant (*p*<.001) patterns were observed between weight self-perception categories:

- Overestimators were more likely to report feeling dissatisfied or very dissatisfied with life
- Underestimators were least likely to report an intention to lose weight
- Underestimators reported the highest levels of emotional stress management

Patterns of psychosocial wellness were comparable between underestimators and accurate perceivers.

Conclusions

Overestimators of weight status appear to be at greater risk of life dissatisfaction, emotional stress management, and social/emotional support compared with underestimators. Overestimators may be sensitive to social pressures and/or body image concerns, based on their high report of weight loss intent. Additionally, underestimation does not seem to offer much advantage over the accurate perception of weight status. These results support patient education on weight status.

The homogeneity of the study population limits the generalizability of these findings. It may be that the young age or social dynamics of an undergraduate population is related to patterns of weight status misperception, for example.

Future studies of weight perception in more diverse populations will help further illuminate psychosocial patterns associated with weight status perception.

References

1. McDermott C, Morrell JS. Current Developments in Nutrition (FS10-08-19).
2. Khanna D, Mutter CM, Kahar P. *Cureus*. 2021;13(11):e19637.
3. Yan et al. *Int J Environ Res Public Health*. 2018;15(5):936.
4. Jiang Y, Kempner M, Loucks EB. *Am J Health Behav*. 2014;38(5):765-780.
5. Chock TM. *J Nutr Educ Behav*. 2011;43(5):331-338.
6. Lenhart et al. *J Sch Nurs*. 2011;27(6):416-423.
7. College health and nutrition assessment survey. <https://chanasprojectunh.weebly.com/>

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