

Impact of Nutrition Knowledge and Body Image on BMI Assessment in College-Aged Men and Women

By Madeline Simonet

Negative Body Image is prevalent in Society

- Young adults/college students struggle most with body image out of all age groups
- Diminished body image is mainly associated with women, but is a growing problem for men as well
- Public media's idea of the "perfect body" is a major contributor to the rise of negative body image in both men and women

Existing Research

- Gender plays a large role in body appreciation
 - Females were 2.84 times more likely to be dissatisfied with being overweight and 0.27 times less dissatisfied with being underweight than males
 - The prevalence of body image concern was significantly higher among females at an undergraduate university in Egypt than in males
 - Female undergraduate students in Kuwait chose a larger perceived body image expected compared to actual BMI
 - 63% of women perceived weight to be one category higher than actual size at a Louisiana university
 - In a Jamaican study, females had a higher difference in actual BMI as compared to perceived BMI; males had a more accurate estimate in perceived body image

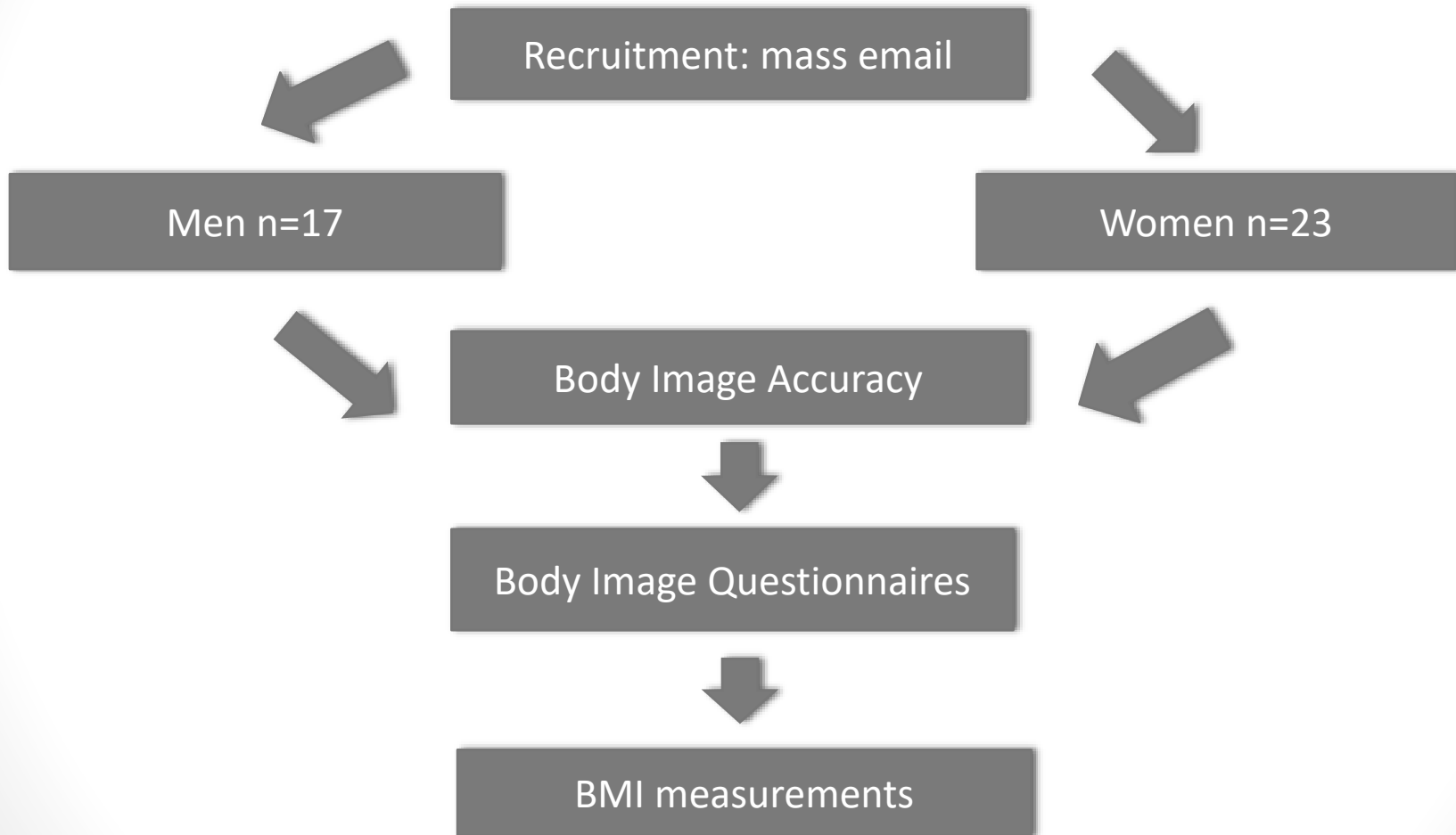
What's Missing?

- Little is known about the relationship between nutrition knowledge and body satisfaction
 - Mainly observational research, polling students about body image and potential influential factors
 - College students from a large northeastern US university showed a significant positive correlation between nutrition knowledge and attitudes towards oneself
 - Having a more in depth background in nutrition knowledge can increase someone's body image

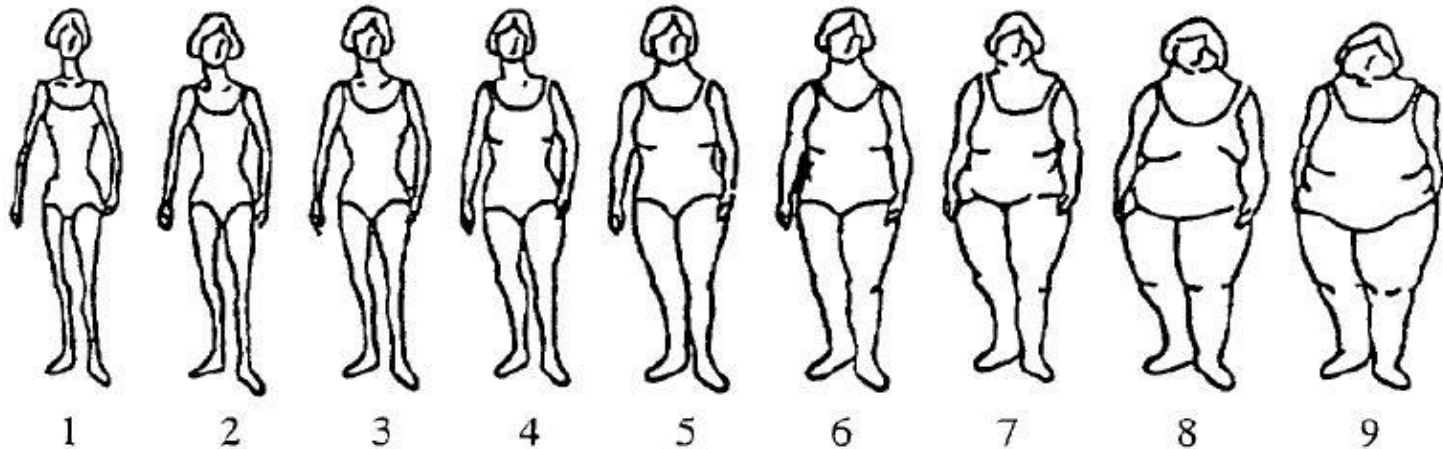
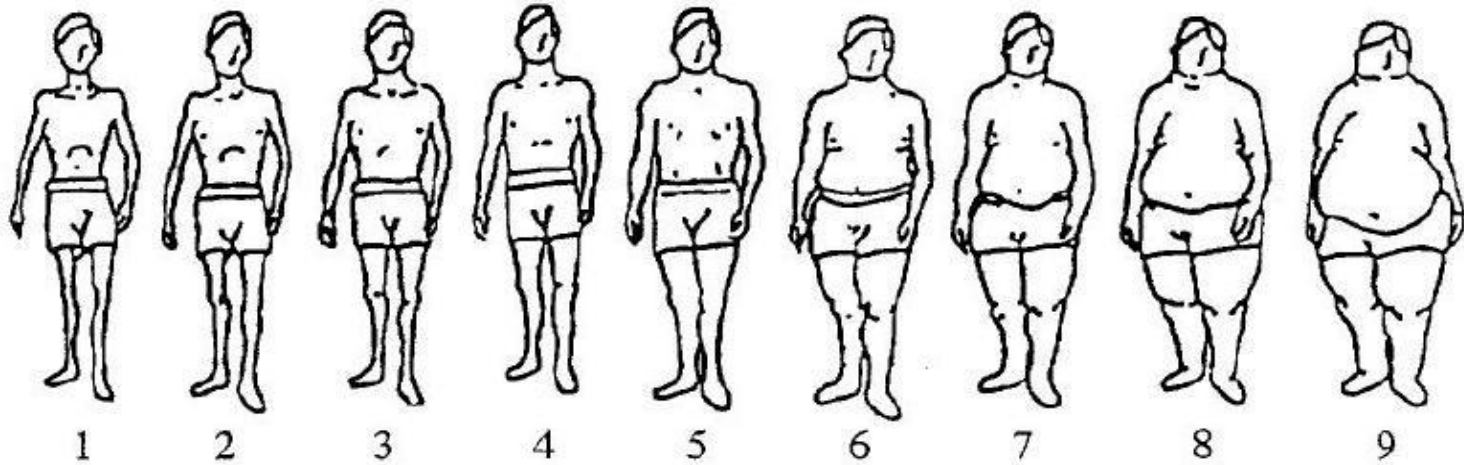
Study Objectives

- Assess the relationship between body image, nutrition knowledge, and BMI assessment in college students
- Use results to better understand how college students view themselves and if there's a need to promote positive body image in young adults

Research Design



Tools Used



Gender Differences in Perceived vs. Actual BMI

	Female	Male	Total
# of participants	23	17	40


Table 1. Gender Differences in Perceived vs. Actual BMI

	Female	Male	P-value
Average Actual BMI	22.4 \pm 2.8	25.5 \pm 5.1	0.018
Average Perceived BMI	22.5 \pm 2.6	23.8 \pm 2.0	0.078
BMI Accuracy	-0.7 \pm 2.6	1.6 \pm 3.6	0.014

Table 2. Accuracy of Actual vs. Perceived BMI

	Female	Male	Total
Underestimated	12	12	24
Overestimated	11	5	16


Body Image Survey Scores did not differ among gender-BSQ



	Female	Male	P value
BSQ Score	21.3 \pm 6.3	18.1 \pm 6.2	0.30
BAS Score	33.6 \pm 5.2	33.9 \pm 3.8	0.84

BSQ Score	Females	Males	Total
Frequent body dissatisfaction (32 or higher)	1	0	1
Some body dissatisfaction (24-31)	6	4	10
Mild body dissatisfaction (16-23)	11	6	17
Minimal body dissatisfaction (<15)	5	7	12

Body Image Survey Scores did not differ among gender-BAS

	Female	Male	P value
BSQ Score	21.3 \pm 6.3	18.1 \pm 6.2	0.30
 BAS Score	33.6 \pm 5.2	33.9 \pm 3.8	0.84

BAS Score	Females	Males	Total
Frequent body appreciation (32 or higher)	16	13	29
Some body appreciation (24-31)	6	4	10
Mild body appreciation (16-23)	1	0	1
Minimal body appreciation (<15)	0	0	0

Accuracy of BMI varied by Academic Year

	1 st year	2 nd year	3 rd year	4 th year	Total
# of participants	12	6	6	16	40

	1st Year	2nd Year	3rd Year	4th Year	p value
BSQ Score	19.8 \pm 5.6	18.7 \pm 3.0	21 \pm 6.9	20.1 \pm 6.4	0.96
BAS Score	34.3 \pm 4.6	35 \pm 2.3	32 \pm 7.1	33.5 \pm 4.3	0.87
Accuracy BMI	1.9 \pm 3.4	0.6 \pm 2.6	1.9 \pm 4.8	-0.71 \pm 2.1	0.047
Actual BMI	24.9 \pm 4.3	23.4 \pm 2.9	26.7 \pm 4.9	21.8 \pm 2.6	0.053



BSQ scores for Academic Year

	1st Year	2nd Year	3rd Year	4th Year	p value
→ BSQ Score	19.8 ± 5.6	18.7 ± 3.0	21 ± 6.9	20.1 ± 6.4	0.96
BAS Score	34.3 ± 4.6	35 ± 2.3	32 ± 7.1	33.5 ± 4.3	0.87
Accuracy BMI	1.9 ± 3.4	0.6 ± 2.6	1.9 ± 4.8	-0.71 ± 2.1	0.047
Actual BMI	24.9 ± 4.3	23.4 ± 2.9	26.7 ± 4.9	21.8 ± 2.6	0.053

BSQ scores	1 st Year	2 nd Year	3 rd Year	4 th Year	Total
Frequent body dissatisfaction (32 or higher)	0	0	0	1	1
Some body dissatisfaction (24-31)	5	0	2	3	10
Mild body dissatisfaction (16-23)	4	4	3	6	17
Minimal body dissatisfaction (<15)	3	2	1	6	12

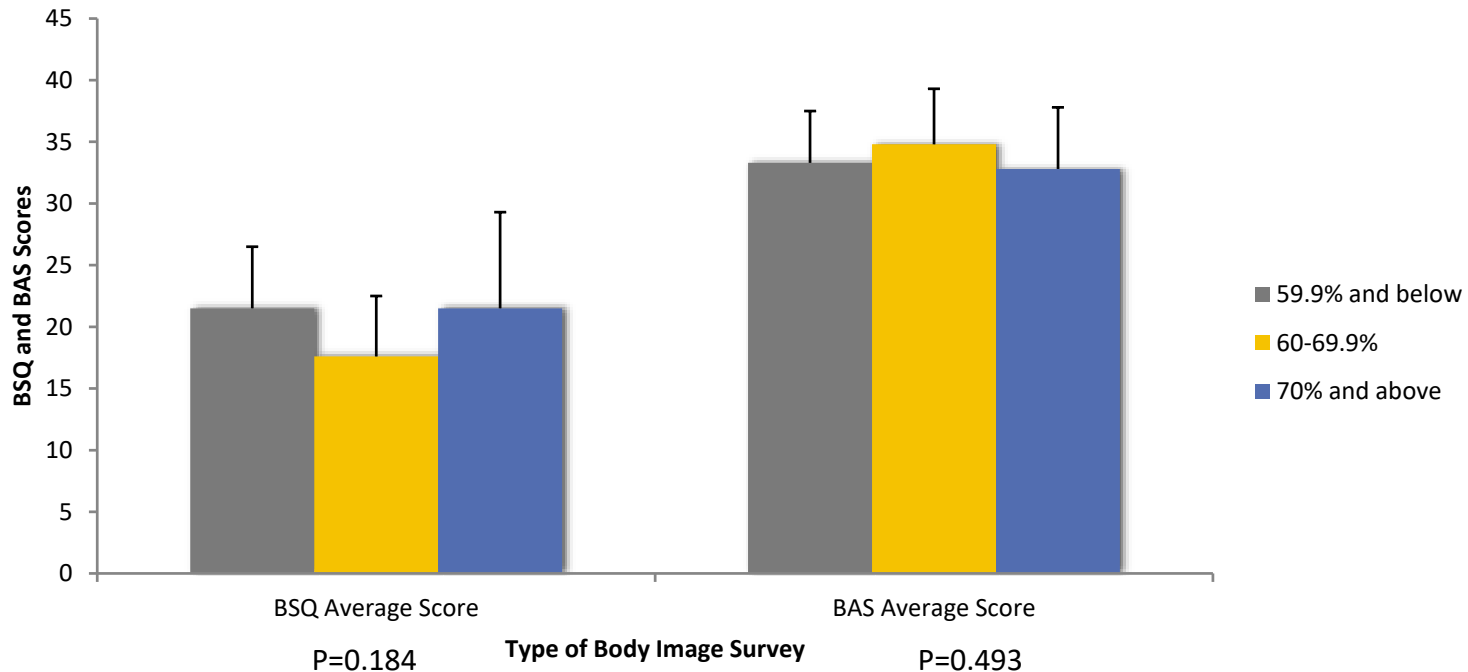
BAS scores for Academic year

	1st Year	2nd Year	3rd Year	4th Year	p value
BSQ Score	19.8 \pm 5.6	18.7 \pm 3.0	21 \pm 6.9	20.1 \pm 6.4	0.96
BAS Score	34.3 \pm 4.6	35 \pm 2.3	32 \pm 7.1	33.5 \pm 4.3	0.87
Accuracy BMI	1.9 \pm 3.4	0.6 \pm 2.6	1.9 \pm 4.8	-0.71 \pm 2.1	0.047
Actual BMI	24.9 \pm 4.3	23.4 \pm 2.9	26.7 \pm 4.9	21.8 \pm 2.6	0.053

BAS scores	1 st Year	2 nd Year	3 rd Year	4 th Year	Total
Frequent body appreciation (32 or higher)	9	6	3	11	29
Some body appreciation (24-31)	3	0	2	5	10
Mild body appreciation (16-23)	0	0	1	0	1
Minimal body appreciation (<15)	0	0	0	0	0

GNKQ

BSQ and BAS scores did not differ by GNKQ performance



Major Findings

- Undergraduate females were more accurate in predicting BMI than undergraduate males (F: -0.7 ± 2.6 ; M: 1.6 ± 3.6)
- Females were just as likely to underestimate (n=12) BMI as they were to overestimate BMI (n=11)
- Males were two times more likely to underestimate BMI (n=12) than to overestimate BMI (n=5)
- More undergraduate students overall were more likely to underestimate BMI (n=24) than overestimate BMI (n=16)
- Fourth years significantly overestimated BMI (-0.71 ± 2.1) while third (1.9 ± 4.8), second (0.6 ± 2.6), and first years (1.9 ± 3.4) underestimated BMI
- Nutrition knowledge did not impact how one viewed oneself

Perceived BMI vs. Actual BMI

- My results:
 - Females slightly overestimated BMI, while males slightly underestimated BMI
 - Undergraduate females were more accurate in predicting BMI than undergraduate males
- Other studies:
 - Female undergraduate students in Kuwait chose a larger perceived body image than expected (5, 703)
 - 63% of female undergraduate students in Louisiana perceived weight to be one category higher than actual size (2, 296)
 - In a Jamaican adolescent study, males had a more accurate estimate in perceived body image (6, 270)

Nutritional Background Knowledge affecting BMI prediction

- My results:
 - Nutrition knowledge did not impact how one viewed oneself
- Other studies:
 - A positive correlation exists between high nutrition knowledge scores and attitude towards oneself in both males and females (4, 285)
 - Having a more in depth nutrition knowledge background can increase a person's body image (7, e58543)

Implications of findings

- Analyzing perceived vs. actual BMI can raise awareness that sometimes the way people see themselves isn't always accurate
- Can enforce positive body image in young adults
- Provides insight as to how CSB/SJU students view themselves regarding body image

Limitations of my study

- Race (majority of participants Caucasian)
- Female to male ratio (n=23 and n=17)
- Study done at a small, private, Midwestern school

What future research is needed?

- Examining the BAS (Body Appreciation Scale) and BSQ (Body Shape Questionnaire) in terms of their influence on eating habits and prevention of harmful behaviors used in attempt to alter body shape
 - Prospective designs using the BAS and BSQ could determine whether women and men's rejection of the societal thin-ideal stereotype and other's acceptance of their body shape predict their future levels of body appreciation or dissatisfaction

Conclusions

- Negative body image is a growing problem in males and females in today's society
- However CSBSJU students were more accurate in predicting BMI than originally thought
- CSBSJU students have a fairly positive body image

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Questions?



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References

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