

Published in *Childhood Obesity* by Mary Ann Liebert, Inc. Final publication is available from Mary Ann Liebert, Inc., publishers <https://doi.org/10.1089/chi.2018.0096>

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Perceived Body Discrimination and Intentional Self-Harm and Suicidal Behavior in Adolescence

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Word count: 3,219

Acknowledgements: The Longitudinal Study of Australian Children (LSAC) is funded by the Commonwealth Department of Families, Community Services and Indigenous Affairs. No direct funds from the LSAC study supported this research. ARS was supported by a grant from the Eunice Kennedy Shriver National Institute of Child Health and Human Development (1R15HD083947). ER was supported by grants from the Medical Research Council and Economic Social Research Council.

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## Abstract

**Background:** This study examines whether discrimination based on the body is associated with intentional self-harm and suicidal behavior in adolescence.

**Methods:** Participants were from the Longitudinal Study of Australian Children ( $N=2,948$ ; 48% female). Discrimination and items on self-harm and suicidal behavior were measured in the Wave 6 assessment, when study participants were 14-15 years old. Body mass index (BMI), depressive symptoms, peer victimization, and weight self-perception were also assessed.

**Results:** Discrimination was associated with increased risk of thoughts of self-harm (OR=2.41, 95% CI=1.88-3.10), hurting the self on purpose (OR=2.27, 95% CI=1.67-3.08), considering suicide (OR=2.17, 95% CI=1.59-2.96), having a suicide plan (OR=2.50, 95% CI=1.81-2.47) and attempting suicide (OR=1.96, 95% CI=1.30-2.96), controlling for socio-demographic factors, BMI, and depressive symptoms. These associations generally held adjusting for peer victimization or weight self-perception.

**Conclusions:** Weight discrimination has been associated consistently with poor outcomes in adulthood. The present research indicates these associations extend to adolescence and an extremely consequential outcome: the social experience of weight increases risk of intentional self-harm and suicidal behavior.

**Keywords:** weight discrimination, self-harm, suicide, social connection, weight perception, peer victimization

Many individuals report unfair treatment on the basis of their body<sup>a 1</sup>. Although often justified as a motivator for weight loss, weight discrimination (i.e., unfair treatment on the basis of body weight) is a consistent predictor of negative health outcomes, including greater weight gain over time<sup>2</sup>. The negative correlates of weight discrimination are not limited to weight gain. Individuals who experience weight discrimination are at greater risk of high allostatic load<sup>3</sup>, poor regulation of eating behavior<sup>4</sup>, and greater psychological distress<sup>5</sup> and disease burden<sup>6</sup>. Ultimately, individuals who experience weight discrimination die younger than individuals who have not experienced it<sup>7</sup>. Thus, far from being innocuous, weight discrimination may harm the psychological and physical health of the individual. Most research on the correlates of weight discrimination has focused on adults. Adolescents, however, are not immune to this form of discrimination. It is clear that adolescents experience weight discrimination, and that it is associated with worse psychological well-being<sup>8</sup>. The present research examines whether it is also associated with an extreme manifestation of psychological distress – intentional self-harm (i.e., thoughts and actions toward intentionally hurting the self<sup>9</sup>) and suicidal behavior<sup>10</sup>, including thoughts [ideations] about killing oneself, suicidal plans, and attempts to kill oneself.

Suicide is a growing problem for both adolescents and adults. Between 1999 and 2014, the rate of suicide in the United States increased by nearly 25%<sup>11</sup>. The suicide rate increased across all age groups but was particularly pronounced among adolescent females<sup>11</sup>. Other countries have seen similar increases in suicide in recent years<sup>12</sup>. Among adolescents, suicide is the second leading cause of death in the United States<sup>13</sup>. The prevalence of suicidal ideation is

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<sup>a</sup> Body discrimination includes unfair treatment on the basis of various aspects of the body, such as weight, height, and body shape. Most of the literature on body discrimination is focused on weight discrimination. We refer to weight discrimination throughout the paper to be consistent with this broader literature.

higher and is a precursor to attempted suicide <sup>14</sup>. Suicide is the end result of a complex web of biological, psychological, and social factors <sup>15</sup>. It is critical to identify factors that increase risk of thoughts and actions toward hurting the self, especially during sensitive developmental periods, such as adolescence.

Previous research has shown consistently that interpersonal aggression in the form of peer victimization increases risk of self-harm and suicidal ideation <sup>16</sup>. Interpersonal aggression refers to anger, hostility and/or violence directed at another person, and peer victimization refers to these behaviors between children <sup>17</sup>. Weight discrimination can be a form of peer victimization – if the unfair treatment based on weight is by an adolescent’s peer or peers – but it is also broader than peer victimization because it can be by people other than the adolescent’s peers (e.g., healthcare providers, store clerks, etc.). Adolescents with overweight or obesity are particularly vulnerable to both weight discrimination and peer victimization <sup>18</sup>.

The present research extends this literature to address whether unfair treatment on the basis of the body is an independent risk factor for thoughts and actions focused on intentionally harming the self. There is some evidence that weight discrimination may increase vulnerability to suicidal ideation among adolescents. Adolescents who have been teased because of their weight, for example, are more likely to have thoughts of suicide than those who have not been teased <sup>19</sup>. Further, this association is observed irrespective of whether the teasing is from friends or family members <sup>19</sup>. Similar to teasing, weight discrimination may also increase risk of intentional self-harm and suicidal behavior.

In examining this association, it is critical to account for other factors related to weight discrimination that also increase risk of suicidal behaviors and thus may confound the association. During adolescence, individuals tend to be sensitive about how they are perceived

and how they fit in with their peers <sup>20</sup>. There is consistent evidence, for example, that peer victimization increases risk for suicidal thoughts, plans, and attempts <sup>21</sup>. Adolescents who measure in the overweight or obese body mass index (BMI) categories are particularly vulnerable to be victimized <sup>22</sup>. Compared to their peers with normal weight, children who measure in the overweight and obese BMI categories are at an approximately 20% and 50% greater risk, respectively, of peer victimization because of their weight <sup>23</sup>. Regardless of the reason for the victimization, it is estimated that it is associated with a more than two-fold increased risk of suicidal thoughts and suicide attempts <sup>16</sup>.

In addition to vulnerability to peer victimization, adolescents are also particularly sensitive about their body weight. Although measured overweight and obesity tend to be unrelated to suicide attempts and protective rather than harmful against suicide <sup>24</sup>, how adolescents perceive their body weight is associated with thoughts of self-harm <sup>25</sup>. In particular, compared to those who see themselves as about the right weight, adolescents who perceive themselves either as overweight or underweight are at greater risk of thoughts of suicide <sup>26</sup>. Thus, rather than objective body weight, the psychological experience of body weight may be what puts adolescents at risk of suicidal behaviors.

Adolescent girls tend to be sensitive about their body weight and more vulnerable to weight-related victimization than adolescent boys <sup>27</sup>. There is also some evidence that adolescent girls engage in more thinking, planning, and attempting suicide than adolescent boys <sup>28</sup>. Despite these mean-level differences by gender, there tends to be no gender differences in the relation between weight-related teasing and suicidal behaviors: Girls and boys who experience such teasing are equally likely to think about harming themselves <sup>19</sup>. The association between weight discrimination and health-risk behaviors also tends to be similar across females and males in

adulthood<sup>29</sup>. A gender difference, however, does emerge for weight perception: adolescent girls who perceive themselves as overweight are more likely to engage in suicidal behavior than boys who perceive themselves as overweight in one study<sup>30</sup>. It is thus unclear from these related literatures whether the association between weight discrimination and suicidal behavior would be moderated by gender. As such, it is critical to examine whether the associations are similar for adolescent girls and adolescent boys or whether one gender is at greater risk.

The present study uses a large sample of adolescents to examine the association between weight discrimination, in the form of body discrimination, and intentional self-harm, including thoughts and actions of deliberately hurting the self, and suicidal behaviors, including thoughts, plans, and attempts. Our work is guided by a conceptual framework (Figure 1)<sup>31</sup> that integrates components from the literatures on weight discrimination, peer victimization, and weight perception and theories of self-harm and suicidal behavior. Specifically, we aim to address whether weight discrimination has associations with these outcomes that are independent from a related form of interpersonal aggression (peer victimization) and from a related form of perception (self-perceived weight). Within each of these literatures, there is recognition that sociodemographic factors, body weight, and depressive symptoms are associated with both the predictors (weight discrimination, peer victimization, weight perception) and the outcomes (intentional self-harm and suicidal behavior) and may confound the relation and thus should be accounted for in the model. We expect that weight discrimination will be associated with an increased risk of each aspect of self-harm and suicidal behavior, independent of current depressive symptoms, peer victimization, and self-perceived overweight. Finally, we also examine whether the association between weight discrimination and intentional self-harm/suicidal behavior varies by gender.

## Method

### Participants and Procedure

Participants ( $N=2,948$ ) were drawn from the sixth wave of the older (K) cohort of the Longitudinal Study of Australian Children (LSAC) <sup>32</sup> when the study children were aged 14-15. Participants were drawn from this wave because it was the first to ask study children about weight discrimination and intentional self-harm and suicidal behavior. As part of the in-home assessment, study children answered questions about many aspects of their lives using an automated computer system that allowed them to answer questions privately on a computer without fear that their answers would be overheard. All questionnaires and measures were at the sixth assessment. The Australian Institute of Family Studies Ethics Committee approved data collection for LSAC and written informed consent for each studied family was obtained before family members were asked any questions.

### Measures

*Weight discrimination.* Discrimination was measured with the item, “In the last 6 months have you been treated unfairly or badly because of your body size, shape or physical appearance? (e.g., weight, height, chest size, body hair).” Participants responded yes (1) or no (0) to this item.

*BMI.* Trained staff measured the height and weight of the study children. BMI was derived as  $\text{kg/m}^2$  and converted to percentiles based on CDC growth charts <sup>33</sup>. BMI was then dummy coded into underweight ( $\text{BMI} < 5^{\text{th}}$  percentile), overweight ( $\text{BMI} \geq 85$  to  $< 95^{\text{th}}$  percentile), and obese ( $\text{BMI} \geq 95^{\text{th}}$  percentile) categories, with normal weight ( $\text{BMI} \geq 5^{\text{th}}$  percentile to  $< 85^{\text{th}}$  percentile) as the reference category.

*Depressive symptoms.* Depressive symptoms were measured with the Short Mood and Feelings Questionnaire, which was developed to use in epidemiological surveys and has been

found to correlate strongly with more in depth assessments<sup>34</sup>. Children rated 13 items about their mood (e.g., miserable or unhappy) in the last two weeks on a scale with 1=*true*, 2=*sometimes*, and 3=*not true*. Items were recoded to a scale that ranged from 0 [*not true*] to 2 [*true*], summed to create an index of depressive symptoms (range 0-26), and converted to z-scores (i.e., mean=0 and SD=1).

*Peer Victimization.* Participants were asked about their experience with peer victimization over the last year<sup>35</sup>. Specifically, participants were asked, “During the last 12 months, since [month at time of interview] last year has...” (1) someone hit or kicked me on purpose, (2) someone grabbed or shoved me on purpose, (3) someone threatened to hurt me, (4) someone threatened to take my things, (5) someone said mean things to me or called me names, (6) someone tried to keep others from being my friend, (7) someone did not let me join in what they were doing, (8) someone used force to steal something from me, (9) someone hurt me or tried to hurt me with a weapon, (10) someone stole my things to be mean to me, and (11) someone forced me to do something I didn’t want to do. Participants responded yes or no to each item. Peer victimization was the sum of these eleven items.

*Perceived Weight.* Participants were asked how they perceived their weight: “How do you feel about your weight at the moment?” Response options were very underweight, somewhat underweight, about the right weight, somewhat overweight, and very overweight. Participants were classified into one of three groups: perceived overweight, perceived underweight, and about the right weight. For the analysis, two dummy variables were created: one dummy variable for perceived overweight (1) and a second, independent dummy variable for perceived underweight (1) and both groups were compared to perceived about the right weight (0; reference category).



*Intentional self-harm/suicidal behavior.* Participants were asked several questions about intentional self-harm and suicidal behavior. Specifically, participants were asked, “Sometimes people feel like hurting themselves. During the past 12 months have you... (1) thought about hurting yourself on purpose in any way? (e.g. by taking an overdose of pills, or by cutting or burning yourself)? (2) hurt yourself on purpose in any way (e.g. by taking an overdose of pills, or by cutting or burning yourself)? (3) ever seriously consider attempting suicide? (4) made a plan about how you would attempt suicide?” Participants responded yes (1) or no (0) to each item. Participants were also asked, “During the past 12 months, how many times did you actually attempt suicide?” Response options ranged from 0 (0 times) to 4 (6 or more times) and were recoded into any reported attempts (1) versus no reported attempts (0).

### **Statistical Approach**

We used logistic regression to examine the association between weight discrimination and risk of self-harm and suicidal behavior. Model 1 included weight discrimination and study child gender, age, household income, BMI weight category, and depressive symptoms as covariates. Model 2 included Model 1 variables plus peer victimization. Model 3 included Model 1 variables plus weight perception. Finally, we tested for an interaction between gender and weight discrimination on the self-harm and suicidal behavior to examine whether these associations are moderated by gender.

### **Results**

Across the sample, 21% of participants reported having experienced unfair treatment based on their body. The prevalence of the outcome measures ranged from 4% for attempted suicide to 16% for thoughts about purposefully hurting the self. Descriptive statistics for all study variables and by discrimination are shown in Table 1. The analytic sample ranged from

2,937 to 2,946 because of missing values on the outcome variables and on peer victimization and weight perception.

Controlling for the basic socio-demographic factors, BMI category, and depressive symptoms, discrimination was associated with an approximately two-fold increased risk of self-intentional harm and suicidal behavior (Tables 2 and 3): Study children who had experienced unfair treatment based on their body thought more about hurting themselves on purpose, had physically hurt themselves, considered killing themselves, had a plan, and had attempted it at least once in the past. Of note, none of the measured BMI weight categories was associated with any of the self-harm or suicide measures.

The inclusion of peer victimization in the last year reduced, but did not eliminate, the association between discrimination and self-harm and suicidal ideation (Tables 2 and 3). Similarly, the inclusion of weight self-perception in the model reduced but did not eliminate most associations between discrimination and the outcome measures (Tables 2 and 3). Consistent with previous research, every additional type of peer victimization in the last year was associated with an approximately 20% increased risk of self-harm and suicidal behavior. Likewise, perceived weight, both perceived overweight and perceived underweight, compared to perceived about the right weight, was associated with an increased risk across all of the dimensions. Weight discrimination continued to have an independent association with thoughts of hurting the self on purpose (OR=1.49, 95% CI=1.13-1.98) when all three risk factors were included simultaneously.

Finally, we tested whether the association between discrimination and self-harm and suicidal behavior was moderated by gender. Across the five outcome measures, there was no

evidence that this association differed across adolescent females and adolescent males (i.e., none of the interactions was statistically significant).

## Discussion

In a large sample of adolescents, we found that having experienced unfair treatment on the basis of the body was associated with an increased risk of thoughts and actions of intentional self-harm. This form of discrimination was associated with an over two-fold increased risk of suicidal behavior and remained strong after adjustment for known predictors of self-harm. These associations were similar across gender, which indicates that adolescent girls and adolescent boys are equally vulnerable to its harmful correlates.

There is substantial evidence that weight discrimination is associated with a number of poor outcomes. Individuals who experience unfair treatment because of their body weight tend to engage in more disordered eating<sup>36</sup> and less physical activity<sup>37</sup>, which may contribute to the increased risk of weight gain associated with weight discrimination<sup>38</sup>. Growing evidence also suggests that the harmful effect of weight discrimination is not limited to weight-related outcomes. Individuals who experience weight discrimination tend to also experience more daily stress<sup>39</sup>, engage in more high-risk behaviors, such as driving while intoxicated<sup>29</sup>, and, ultimately, have a greater risk of premature mortality<sup>7</sup> than individuals who have not had these experiences.

Similar to adults, it is also common for adolescents to experience unfair treatment because of their body<sup>18</sup>. Less research has addressed the correlates of this treatment in adolescents, relative to adults, but the existing evidence suggests that the well-being of adolescents suffers when they experience weight discrimination. Students who report weight discrimination in sixth grade, for example, are more dissatisfied with their bodies, experience

more social anxiety, and are lonelier by the eighth grade than students who have not been discriminated against because of their weight <sup>8</sup>.

Weight discrimination may increase risk of self-harm, thoughts of suicide, and attempted suicide because it challenges the core human motive to belong. Discrimination sends the message to recipients that they are not valued in their community <sup>40</sup>. One correlate of this experience is that individuals who are treated unfairly on the basis of their body feel lonely and increase in loneliness over time <sup>6, 8</sup>. Such social isolation is associated with thwarted belongingness and lack of social connection, which greatly increase risk of serious suicide attempts <sup>10</sup>. In addition, adolescents often experience weight-based aggression from loved ones in their family <sup>19</sup>, which may disrupt the close relationships that often serve as a buffer against social disconnection outside the home.

The associations between discrimination and most of the dimensions of self-harm and suicidal behavior were independent of other known risk factors that are related to both weight discrimination and the outcome measures. Consistent with the well-documented association between victimization and suicide <sup>16</sup>, we found that adolescents who experienced peer victimization had greater risk of self-harm and suicidal behavior. Still, after accounting for the potential overlap between victimization and discrimination, each emerged as an independent risk factor. Likewise, adolescents who perceive their body weight as differing from normal weight are more likely to have thoughts of self-harm <sup>26</sup>, and perceiving oneself as overweight may make one more vulnerable to weight discrimination. Again, both weight perception and discrimination increased risk of suicidal behavior, independent of the other.

It is of note that measured BMI weight category was unrelated to intentional self-harm and suicidal behavior. That is, participants with underweight, overweight, or obesity were

equally likely to engage in suicidal thoughts and actions as participants of normal weight. This association is consistent with previous research that has found no association between BMI weight category and suicide ideation or attempts <sup>25</sup>. The results also add to the literature on perception of weight and self-harm <sup>26</sup>. Specifically, individuals' social experience with their body, in addition to their psychological experience of their own weight, increases risk of suicidal behavior more than measured body weight itself.

The present research had several strengths, including a large sample of adolescents and the measurement of multiple factors associated with self-harm and suicide risk. There are also some weaknesses that could be addressed in future research. For example, the data were cross-sectional. It would be helpful in the future to have longitudinal data to examine whether weight discrimination is associated with change in self-harm and suicidal behavior over time. In addition, although the discrimination measure specifically asked about discrimination based on body size, weight, and shape, it also included other aspects of physical appearance. Participants with obesity, however, endorsed this experience more frequently than participants with normal weight (35% versus 17%, respectively), which suggests that the item is sensitive to discrimination based on weight. Still, it would be worthwhile to have a measure that only focused on weight discrimination and included information about the timing, frequency, and severity of the discrimination. Despite these weaknesses, this research indicates that unfair treatment on the basis of the body is associated with increased risk of intentional self-harm and suicidal behaviors, independent of other related risk factors, including symptoms of depression, peer victimization, and perceived body weight. The harmful correlates of weight discrimination start early and extend to significant risk of intentional self-harm and suicidal behaviors.

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Table 1

*Descriptive Statistics for All Study Variables for the Full Sample and by Weight Discrimination*

	Full Sample	Weight Discrimination	
		No (2338)	Yes (620)
Sex (female)	48.3% (1424)	46.9% (1091)	53.7% (333)
Age	14.40 (.49)	14.41 (.49)	14.37 (.48)
Household income	2650.02 (2458.35)	2704.97 (2638.37)	2443.68 (1596.89)
Depressive symptoms	5.34 (6.52)	4.25 (5.80)	9.44 (7.38)
BMI (underweight)	6.5% (191)	6.3% (146)	7.3% (45)
BMI (normal weight)	67.4% (1988)	70.5% (1642)	55.8% (346)
BMI (overweight)	19.2% (565)	17.5% (407)	25.5% (158)
BMI (obesity)	6.9% (204)	5.7% (133)	11.5% (71)
Weight discrimination	21% (620)	0% (0)	100% (620)
Peer victimization	1.99 (2.40)	1.44 (1.97)	4.03 (2.73)
Perceived overweight	26.2% (771)	21% (489)	45.5% (282)
Perceived underweight	12.1% (355)	11% (255)	16.1% (100)
Perceived normal weight	61.7% (1820)	68% (1582)	38.4% (238)
Thought about hurting self	15.9% (468)	10.9% (252)	35% (216)
Hurt self on purpose	8.8% (260)	5.5% (128)	21.3% (132)
Consider suicide	8.2% (242)	5.3% (122)	19.4% (120)
Suicide plan	6.9% (202)	4.1% (95)	17.3% (107)
Attempted suicide	4% (118)	2.6% (61)	9.2% (57)

*Note.*  $N=2,948$ . Numbers are either percentages ( $n$ ) or means (standard deviations). Descriptive statistics for household income (range 0-85,988) and depressive symptoms (range=0-26) are reported in the raw metric in Table 1 and converted to z-scores for the analyses.

Table 2

*Logistic Regression Predicting the Self-Harm Behaviors from Weight Discrimination*

Predictors	Model 1	Model 2	Model 3
		<u>Thought about hurting self</u>	
Sex (female)	3.14 (2.44-4.03)**	3.71 (2.86-4.81)**	3.21 (2.45-4.18)**
Age	1.06 (.84-1.35)	1.07 (.84-1.37)	1.04 (.81-1.32)
Household income	1.00 (.88-1.12)	1.01 (.90-1.13)	1.00 (.88-1.13)
Depressive symptoms	2.69 (2.41-2.99)**	2.51 (2.26-2.80)**	2.66 (1.39-2.96)**
BMI (underweight) <sup>a</sup>	.95 (.58-1.57)	1.04 (.63-1.72)	.70 (.41-1.21)
BMI (overweight) <sup>a</sup>	1.05 (.78-1.41)	1.04 (.77-1.41)	.89 (.64-1.24)
BMI (obesity) <sup>a</sup>	.96 (.61-1.51)	1.01 (.64-1.60)	.72 (.44-1.18)
Peer victimization	--	1.19 (1.13-1.25)**	--
Perceived overweight <sup>b</sup>	--	--	1.82 (1.35-2.46)**
Perceived underweight <sup>b</sup>	--	--	2.36 (1.60-3.49)**
Weight discrimination	2.41 (1.88-3.10)**	1.66 (1.26-2.19)**	2.15 (1.66-2.77)**
Sample Size (N)	2940	2939	2938
		<u>Hurt self on purpose</u>	
Sex (female)	3.79 (2.70-5.31)**	4.44 (3.13-6.29)**	3.58 (2.51-5.10)**
Age	1.09 (.81-1.47)	1.09 (.80-1.48)	1.06 (.78-1.43)
Household income	.81 (.65-1.02)	.85 (.68-1.06)	.80 (.64-1.01)
Depressive symptoms	2.75 (2.43-3.11)**	2.56 (2.28-2.94)**	2.70 (2.38-3.06)**
BMI (underweight) <sup>a</sup>	1.12 (.60-2.09)	1.24 (.66-2.32)	.97 (.50-1.90)
BMI (overweight) <sup>a</sup>	.94 (.64-1.36)	.92 (.63-1.35)	.73 (.48-1.11)
BMI (obesity) <sup>a</sup>	.82 (.47-1.44)	.84 (.48-1.50)	.58 (.31-1.05)
Peer victimization	--	1.19 (1.12-1.26)**	--
Perceived overweight	--	--	1.98 (1.36-2.88)**
Perceived underweight <sup>b</sup>	--	--	1.81 (1.09-3.01)**
Weight discrimination <sup>b</sup>	2.27 (1.67-3.08)**	1.52 (1.08-2.14)*	2.03 (1.48-2.77)**
Sample Size (N)	2942	2941	2940

*Note.* Coefficients are odds ratios (95% confidence intervals) from logistic regression. Model 1 controls for sex, age, household income, depressive symptoms and body mass index (BMI) weight category. Model 2 controls for Model 1 covariates and peer victimization. Model 3 controls for Model 1 covariates and perceived weight. <sup>a</sup> The reference category is normal weight.

<sup>b</sup> The reference category is perceived about the right weight.

\* $p < .05$ .

\*\* $p < .01$ .

Table 3

*Logistic Regression Predicting Suicidal Behaviors from Weight Discrimination*

Predictors	Model 1	Model 2	Model 3
		<u>Considered Suicide</u>	
Sex (female)	1.50 (1.10-2.03)*	1.77 (1.29-2.43)**	1.42 (1.02-1.97)*
Age	1.18 (.88-1.60)	1.20 (.88-1.63)	1.16 (.86-1.57)
Household income	.64 (.50-.83)**	.68 (.53-.88)**	.63 (.49-.82)**
Depressive symptoms	2.69 (2.38-3.04)**	2.52 (2.22-2.86)**	2.66 (2.35-3.00)**
BMI (underweight) <sup>a</sup>	.73 (.36-1.45)	.82 (.41-1.63)	.59 (.28-1.23)
BMI (overweight) <sup>a</sup>	.77 (.52-1.14)	.76 (.51-1.13)	.61 (.40-.95)*
BMI (obesity) <sup>a</sup>	.73 (.42-1.27)	.76 (.43-1.34)	.53 (.29-.96)*
Peer victimization	--	1.22 (1.15-1.29)**	--
Perceived overweight <sup>b</sup>	--	--	1.96 (1.33-2.88)**
Perceived underweight <sup>b</sup>	--	--	1.94 (1.20-3.15)**
Weight discrimination	2.17 (1.59-2.96)**	1.34 (.95-1.90)	1.91 (1.39-2.63)**
Sample Size (N)	2943	2942	2941
		<u>Suicide plan</u>	
Sex (female)	1.29 (.94-1.79)	1.52 (1.08-2.12)*	1.36 (.96-1.92)
Age	1.03 (.75-1.42)	1.04 (.75-1.43)	1.01 (.73-1.39)
Household income	.68 (.52-.89)**	.72 (.55-.95)*	.68 (.52-.89)**
Depressive symptoms	2.43 (2.14-2.76)**	2.27 (1.98-2.59)**	2.41 (2.12-2.74)**
BMI (underweight) <sup>a</sup>	1.14 (.59-2.21)	1.29 (.66-2.50)	.78 (.39-1.58)
BMI (overweight) <sup>a</sup>	.90 (.60-1.36)	.89 (.58-1.35)	.84 (.53-1.33)
BMI (obesity) <sup>a</sup>	1.36 (.81-2.28)	1.44 (.84-2.45)	1.18 (.66-2.36)
Peer victimization	--	1.21 (1.14-1.29)*	--
Perceived overweight <sup>b</sup>	--	--	1.54 (1.02-2.36)*
Perceived underweight <sup>b</sup>	--	--	2.52 (1.55-4.10)**
Weight discrimination	2.50 (1.81-2.47)**	1.58 (1.10-2.26)*	2.34 (1.60-3.12)**
Sample Size (N)	2943	2942	2941
		<u>Attempted suicide</u>	
Sex (female)	1.32 (.88-1.97)	1.56 (1.03-2.35)*	1.29 .84 (1.98)
Age	1.03 (.69-1.52)	1.03 (.69-1.54)	1.00 (.67-1.48)
Household income	.41 (.27-.61)**	.44 (.29-.66)**	.40 (.27-.61)**
Depressive symptoms	2.05 (1.76-2.39)**	1.87 (1.58-2.21)**	2.01 (1.72-2.35)**
BMI (underweight) <sup>a</sup>	1.25 (.57-2.72)	1.43 (.65-3.12)	.89 (.39-2.06)
BMI (overweight) <sup>a</sup>	.97 (.59-1.60)	.97 (.58-1.60)	.77 (.44-1.34)
BMI (obesity) <sup>a</sup>	.94 (.48-1.85)	.99 (.50-1.96)	.67 (.32-1.39)
Peer victimization	--	2.21 (1.12-1.30)**	--
Perceived overweight <sup>b</sup>	--	--	2.25 (1.34-3.78)**
Perceived underweight <sup>b</sup>	--	--	2.67 (1.47-4.86)**
Weight discrimination	1.96 (1.30-2.96)**	1.23 (.78-1.93)	1.65 (1.09-2.51)*
Sample Size (N)	2946	2945	2944

*Note.* Coefficients are odds ratios (95% confidence intervals) from logistic regression. Model 1 controls for sex, age, household income, depressive symptoms and body mass index (BMI) weight category. Model 2 controls for Model 1 covariates and peer victimization. Model 3 controls for Model 1 covariates and perceived weight. <sup>a</sup>The reference category is normal weight.

<sup>b</sup>The reference category is perceived about the right weight.

\* $p < .05$ .

\*\* $p < .01$ .

## Figure Caption

Conceptual model of predictors (weight discrimination, peer victimization, weight perception) of self-harm and suicide behaviors accounting for covariates (sex, age, household income, depressive symptoms, body mass index).

Figure 1

