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Behaviors and Motivations for Weight Loss in Children and Adolescents

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Abstract

Objectives—Examine the association between weight loss behaviors and motivations for weight loss in children and adolescents and the association of weight status with these behaviors and motivations in a nationally representative sample.

Methods—We examined data from the National Health and Nutrition Examination Survey (NHANES), focusing on children in the United States ages 8-15 years, in repeated cross-sections from 2005–2011.

Results—Half of participants (N=6117) reported attempting to lose weight, and children who were obese attempted to lose weight more frequently (76%) than children who were a healthy weight (15%). Children reported attempting to lose weight by both healthy and unhealthy means: “exercising” (92%), “eating less sweets or fatty foods” (84%), “skipping meals” (35%), and “starving” (18%). The motivation to be better at sports was more likely to be associated with attempting weight loss through healthy behaviors, whereas children motivated by teasing were more likely to engage in unhealthy behaviors. Motivations for losing weight differed by weight status.

Conclusions—Many children and adolescents attempt to lose weight, using either or both healthy and unhealthy behaviors, and behaviors differed based on motivations for weight loss. Future research should examine how physicians, parents, and teachers can inspire healthy behavior changes.

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Keywords

disordered eating; weight loss; motivations; obesity; pediatrics

Introduction

Obesity prevalence remains high in the United States, affecting more than 17% of children and teenagers and 30% of adults,[1] and rates of severe obesity continue to increase.[2] About half of adolescents who are overweight or obese are actively trying to lose weight.[3] Some adolescents practice unhealthy behaviors in an attempt to lose weight, such as: severely restricting their diet; using a food substitute; skipping meals; using laxatives, diuretics, or diet pills; or inducing vomiting.[4] In a recent population-based sample, about one-quarter of adolescent girls with obesity were found to be practicing extreme weight control behaviors like inducing vomiting or taking laxatives or diet pills.[5] In addition to being unsafe, these strategies are typically ineffective for weight loss. Adolescents with unhealthy weight control behaviors have greater increases in body mass index (BMI) compared to adolescents of the same weight without unhealthy weight control behaviors.[6] Adolescents are more likely to attempt weight loss than younger children, likely due to their increased exposure to obesity messages, and girls are more likely than boys to attempt weight loss.[7]

The risks of eating disorders and disordered eating behaviors (both binge eating and restrictive eating behaviors) are higher in adolescents with a history of obesity. Adolescents who are overweight and obese are more likely to demonstrate disordered eating behaviors than their normal weight peers.[8] “Dieting” in children and adolescents is considered an unhealthy means of losing weight, as there is a clear relationship between severe dietary restriction and eating disorders.[6,9] One study demonstrated that more than a third of patients were overweight or obese at the time of their presentation for treatment to a specialty eating disorder clinic.[10] Regardless of weight when diagnosed with an eating disorder, adolescents who are overweight or obese and develop disordered eating behaviors have more medical complications related to their weight loss compared to adolescents who were initially at a healthy weight.[11]

Children's motivations for weight loss are not well understood. One study demonstrated that children who reported a motivation for weight loss relating to social/familial factors lost more weight than children who were motivated by personal factors.[12] In adults, certain motivations, such as intrinsic motivation for exercise, have been associated with increased maintenance of long-term weight loss.[13] With the increasing focus on the prevention and treatment of obesity,[14] there is a need to ensure that messages and encouragement for healthy living and weight loss are safe as well as effective.[15,16] Motivating healthy lifestyle changes without contributing to obesity stigma is important,[17] as stigma increases binge eating[18] and caloric consumption.[19] Adolescents who are obese are already at risk for poor self-esteem[20] and disordered eating, and we can gain valuable insight from a nationally representative sample about motivations for weight loss and current weight loss behaviors

We examined data from the National Health and Nutrition Examination Survey (NHANES), focusing on children aged 8-15 from the years 2005 to 2011. The objectives of this study

were to examine in a nationally representative sample: the weight loss behaviors of children and adolescents, their motivations for weight loss, the association between weight loss behaviors and motivations, and the association of weight status with behaviors and motivations. We hypothesized that children with a higher class of obesity and children who are motivated to lose weight because of teasing would be more likely to have unhealthy weight loss behaviors.

Methods

Data

Our data source was the repeated cross-sections of NHANES, a study of the United States population that consists of a questionnaire, physical examination, and laboratory analysis. We chose to only examine data after 2005, when a weight history component of the questionnaire for children ages 8-15 was introduced. This component asks children about specific weight-management behaviors including any attempt to lose weight, as well as disordered eating behaviors such as “starving” or “skipping meals”. NHANES did not provide any further explanation to participants about how these behaviors are defined. It also asks children about their motivations for attempting to lose weight. We included all children in our analysis who had a recorded height and weight and completed the weight history component between 2005 and 2011, the most recent available data (N=6117).

Outcome Measures

Participants in the NHANES study had height and weight measured using a standard protocol of a digital scale and wall-mounted stadiometer. We calculated BMI percentiles according to current growth charts from the Centers for Disease Control and Prevention.[21] We classified children according to standard definitions, with underweight corresponding to a BMI<5th percentile, healthy weight BMI ≥5th to <85th percentile, overweight ≥85th percentile to <95th percentile, and obesity ≥95th percentile. We also used previously described definitions of severe obesity[2] with class 2 obesity corresponding to a BMI >120% of the 95th percentile or a BMI ≥35 and class 3 obesity with a BMI > 140% of the 95th percentile or a BMI ≥40. These definitions of severe obesity correspond with the adult definitions[22] and have been shown to be more stable in estimation than using the 99th percentile.[23]

All children and adolescents were asked what they were currently trying to do about their weight: lose, gain, stay the same, or nothing. They were also asked how often they have tried to lose weight: never, sometimes, or a lot. If they reported having tried to change their weight at some point they were asked why, with options of to look better, be healthier, be better at sports, get teased, clothes fit better, boys will like me better, girls will like me better, friends are trying, someone in family is trying, parent wants me to, teacher/coach wants me to, health professional wants me to, want to be skinny, want to feel better, because I'm fat, or other. Participants were allowed to select more than one option. They also reported how frequently they have tried to change their weight through the following behaviors: been on a diet, starved, cut back on eating, skipped meals, exercised, or eaten less sweets or fatty foods. In this paper we use the term “weight loss behaviors” to describe all

these behaviors in this paper, whether healthy or not, with the understanding that these are behaviors used to attempt weight loss and actual weight change is unknown.

Race was categorized as non-Hispanic white, non-Hispanic black, Hispanic, or other. Household income was split based on whether it was above or below the federal poverty guidelines. Motivations for weight loss were subjectively grouped into five more general subcategories: looks (want to look better, want clothes to fit better, or want to be skinny), peer relations (teased, want girls to like me better, or want boys to like me better), adult influence (because a teacher, coach, parent, or doctor want me to), health (want to be healthier, want to play sports better, or want to feel good), or modeling behavior (because a friend is trying, because a family member is trying). Although there is some potential overlap between motivation categoriess, we assigned modeling behavior to categories in which someone else was specifically trying to lose weight whereas peer relations was assigned to categories in which the motivation was not directly tied to weight but involved the child trying to fit in. Weight loss behaviors were grouped into 3 subcategories: healthy (exercise, eat less sweets or fatty foods), unhealthy (starve, skip meals), and unsure (diet, cut back on eating). General subcategories of motivations and behaviors were not used for statistical analysis but assist in organization and presentation of the data.

Statistical Analysis

We used cross-tabulations to examine weight status category and disordered eating behaviors and reasons for changing weight and tested for differences, with Pearson's chi squares with a second-order Rao and Scott correction to account for survey design. We used ordered logit models to examine differences in behaviors and motivations by weight status because weight control behaviors were ordinal (never, sometimes, a lot). We report odds ratios, which can be interpreted as the odds of a child reporting a greater level of each weight control behaviors. Weight control motivations were binary, so we used logit models to examine differences in motivations by weight, and report traditional odds ratios. All of these multivariable models control for race, age, sex, and income. Analyses were weighted to account for the complex survey design and performed using the *svy* commands in Stata version 13.1. We did not make any adjustments for multiple comparisons as this is not typically done on secondary data analyses of nationally representative data sets with repeated cross-sections and would increase the risk of type II error.[24] This study was exempted from human subjects review by the University of North Carolina Office of Human Research Ethics institutional review board under federal regulation 45 CFR §46.101(b) because it used only de-identified secondary data.

Results

Sample Characteristics

By calculated BMIs, 60% percent of the 6117 children were a healthy weight, 16% were overweight, 15% had obesity, 6.2% had class 2 obesity, and 2.2% had class 3 obesity. There were no significant differences in weight classifications by age or gender (Table 1). Children and adolescents with a higher class of obesity were significantly more likely to be from a family that is below the poverty threshold and be of black or Hispanic race/ethnicity.

Weight Loss Behaviors

Approximately 34% of all children stated they were attempting to lose weight at the time of the survey and 50% described trying to lose weight in the past year. Weight loss was currently being attempted by 50% of children who were overweight, 76% of children with class 1 obesity, 87% of children with class 2 obesity, and 89% of children with class 3 obesity, compared to only 15% of children who were a healthy weight, and this difference was statistically significant ($p<0.001$). The most common weight loss behaviors, of those attempting to lose weight, included: exercising (93%), eating less sweets or fatty foods (82%), cutting back on eating (71%), going on a diet (45%), and skipping meals (35%); of note, participants could select more than one means of attempting to change their weight.

When adjusted for race, income, age, and sex, children with overweight or obesity had significantly greater odds, compared to healthy weight children, of more frequently attempting to lose weight by means such as dieting, cutting back on eating, skipping meals, exercising, and eating fewer sweets or fatty foods; however, trying to lose weight by "starving" was not significantly different by weight status (Table 2).

Older children (aged 12-15) had significantly greater odds compared to younger children of more frequently attempting to lose weight by cutting back on eating (OR 1.35[1.1–1.68]), exercising (OR 1.25[1.01–1.55]), and eating fewer sweets or fatty foods (OR 1.29 [1.06–1.57]) and lesser odds of starving (OR 0.77[0.60–0.98]) as a means to lose weight. Males had significantly greater odds of skipping meals (OR 1.32[1.1–1.58]) and exercising (OR 1.32 [1.08–1.61]) and lesser odds of dieting (OR 0.80[0.65–0.98]) or eating less sweets or fatty foods (OR 0.89 [0.71–1.10]) as a means to lose weight. Weight loss behaviors were not consistently different by income or race when adjusted for other covariates.

Motivation for Desired Weight Change

Children were most commonly motivated to lose weight by a desire to be healthier (49%). Other common reasons included to look better (35%), be better at sports (30%), and to have clothes fit better (13%). Reasons for losing weight were different by weight status when adjusted for race, income, age, and sex (Table 3). Children who were overweight or obese were more likely to try to lose weight more frequently because they are teased, because their parents and health professionals wanted them to, because they wanted to be skinny, or because they wanted to be healthier.

Older children (aged 12-15) had significantly greater odds than younger children of being motivated to lose weight more frequently to look better (OR 2.32[1.84–2.92]), because of a health professional (OR 2.37 [1.39–4.02]), to be healthier (OR 1.41 [1.13–1.75]), and to feel better (OR 2.88 [1.16–7.14]). Older children were less likely motivated by wanting to be skinnier (OR 0.41 [0.25–0.66]) or because of teasing (OR 0.53 [0.36–0.79]). Males had significantly greater odds of reporting motivating factors including wanting girls to like me (2.86 [1.48–5.49]) and to be better at sports (OR 1.86 [1.46–1.74]) and significantly lesser odds of being motivated by wanting clothes to fit better (OR 0.24 [0.17–0.34]), wanting boys to like me (OR 0.13[0.06–0.27]), because a parent wants me to (OR 0.57 [0.37–0.86]), or because friends are trying (OR 0.35 [0.17–0.74]).

Weight Loss Behaviors by Motivations for Weight Change

Unsafe weight loss behaviors were influenced by unique motivating factors (Table 4). Children were more likely to skip meals if they were attempting to lose weight due to peer relations (including being teased and wanting boys or girls to like them better). Starving was not significantly related to a specific motivating factor.

Healthy weight loss behaviors were also influenced by specific motivating factors. Children were significantly more likely to report exercising as a means of losing weight if their motivations included being better at sports or wanting boys to like them better. Children were more likely to eat less sweets or fatty foods if their motivation for weight loss included being better at sports.

Weight loss behaviors with unclear health significance, such as dieting or cutting back on eating, were also influenced by specific motivating factors. Children were significantly more likely to have been on a diet if their motivation for losing weight included an adult influence (parent, teacher/coach, or health professional), because a friend was trying to lose weight, or because they want their clothes to fit better. Children were significantly more likely to report cutting back on eating if their motivation was to look better.

Discussion

Summary of Evidence

Half of children and adolescents in a recent nationally representative sample reported attempting to lose weight in the past year, and children who were overweight or obese attempted to lose weight more frequently than children who were a healthy weight, though rates of attempted weight loss among those at healthy weight were still high. Children used both healthy (exercising, eating less sweets or fatty foods) and unhealthy (skipping meals, starving) means to lose weight. Children who reported wanting to lose weight because they want to be better at sports were more likely to attempt this through healthy behaviors such as exercise or cutting down on sweets or fatty foods. Children who reported wanting to lose weight because of teasing or because their friends were trying to were more likely to engage in unhealthy behavior such as starving and skipping meals. Gender disparities existed in both motivations and means for weight loss.

Clinical Significance

The findings of this study suggest that weight loss in children is often influenced by an adult, which can result in both safe and unsafe behaviors. Given the risk of disordered eating associated with overweight and obesity,[6,8,11] greater attention must be paid to the complex dynamics within families around weight. It has not been determined the impact that adult weight loss behaviors have on children, though potentially they can be positive (healthy) and negative (unhealthy) for children with obesity. There is some evidence that successful adult weight loss can result in child weight loss when healthy behaviors in adults, such as fruit and vegetable consumption[25–27] and physical activity,[28,29] are modeled by children. More than half of American adults are actively trying to lose weight,[30] and 65% of American adults are recommended for weight loss by their physician.[31] Many of these adults that are attempting

to lose weight are likely parents, and it is important that the messages children receive about weight loss are enforcing healthy habits. Parents who discuss weight-related issues in front of their adolescents are more likely to have children that engage in unhealthy weight control behaviors.[32] Unfortunately, unhealthy behaviors (sedentary activity,[33,34] increased portion sizes,[35,36] sugar sweetened beverages,[37,38] diet quality[37–39]) can also be transmitted to children. Many parents pursue fad diets or unsafe approaches to weight loss that may be harmful to children; even some adult-oriented weight loss approaches may not be safe messages for younger children, such as frequent weighing and excessive caloric restriction. Parents have an opportunity to model positive behaviors for their children and may play a role in influencing their child's motivations and strategies for weight loss.

Our finding that teasing is more likely to be a motivation for weight loss for children with a higher class of obesity is consistent with previous studies which have demonstrated that children frequently report teasing and weight-based victimization of peers who are overweight and obese.[40] Teasing and obesity stigma have been shown to be increase binge eating among children[18] and we demonstrated that teasing is also associated with increased reports of “starving” and skipping meals, especially among children and adolescents with a higher class of obesity. Pediatric care providers also need to be aware of the stigmatizing world our children and adolescents are growing up in and check in about whether their patients are victims of teasing, bullying, or low self-esteem. Providers must also counsel patients on the dangers of unhealthy weight loss practice, especially for these patients who at highest risk for these behaviors.

Limitations

This is a cross-sectional analysis, so conclusions cannot be drawn about causation. The response options for many of the survey questions were limited and undefined, so it is difficult to understand if some of the behaviors reported (such as cutting back on eating) are healthy (such as cutting back on fast food) or restrictive (such as cutting back on meals) or if there were other behaviors or motivators that were not listed as response options. Also, because they were allowed to endorse more than one reason, it is not possible to know the prioritization of their reasons for wishing to lose weight or the relative importance of physicians, parents, friends in that reasoning. Additionally, parental weight was not recorded in the NHANES data set, and this could be an important mediator for some of these covariates and should be considered in future studies.

Conclusions

The fact that many children and adolescents engage in unhealthy behaviors in order to achieve a healthy weight (35% skip meals), the fact that many (15%) are trying to lose weight even when at a healthy weight, and the fact that many are doing so for reasons related to stigma all call attention to the need for appropriate counseling in pediatric care. The age differences in means of weight loss suggest that younger children should be counseled better. Gender differences in motivation and means of weight loss highlight the need for individualized approaches. Primary care providers who care for children and adolescents should be aware that patients may not know what healthy behaviors are, so

prescriptions to “lose weight” may be more dangerous than recommendations to eat more fruits and vegetables or less fried and fast foods.

Future research should examine how children interpret the weight loss messages they hear from their peers, family members, and health professionals and how this might differ by age and sex. We have demonstrated that the desire to be better at sports is associated with healthy weight loss behaviors, especially in children with obesity. Future studies need to evaluate if physicians, parents, and teachers/coaches can encourage children to have positive motivations for healthy eating and physical activity behaviors. Pediatricians may need to spend additional time discussing the importance of why achieving a healthy weight is important, and even more importantly, ways for children and their families to establish healthy behaviors.

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Abbreviations

NHANES	(National Health and Nutrition Examination Survey)
BMI	(body mass index)

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What's Already Known About This Subject

- More than half of adolescents who are overweight or obese are actively trying to lose weight.
- Many adolescents attempt to lose weight through unhealthy means such as inducing vomiting or taking laxatives or diet pills.

What This Study Adds

- Half of all children, including 15% of children at a healthy weight, reported attempting to lose weight.
- Children commonly reported using healthy and unhealthy means to lose weight: exercising (92%), cutting back on sweets or fatty foods (84%), skipping meals (35%), and “starving” (18%).
- Children motivated to lose weight to be better at sports were more likely to practice healthy weight loss behaviors, whereas children motivated to lose weight because of teasing were more likely to engage in unhealthy behaviors.

Table 1

Demographics by weight status, adjusted for complex survey design to represent the United States population[a]

	All Participants N=5935[a]	Healthy Weight N=3571	Overweight N=977	Obese N=885	Class 2 Obesity (BMI[b] >120%) N=370	Class 3 Obesity (BMI >140%) N=132	P-value[c]
Age							0.32
8–11	49.0	48.5	50.2	50.9	48.8	36.5	
12–15	51.0	51.5	49.9	49.1	51.2	63.5	
Sex							0.46
Female	49.7	49.3	52.7	49.1	47.7	46.3	
Male	50.3	50.7	47.3	50.9	52.3	53.7	
Income							<0.001
Above Poverty	78.2	80.5	78.3	73.8	66.8	57.7	
Below Poverty	21.8	19.5	21.7	26.2	33.2	42.3	
Race							<0.001
White	57.5	60.3	57.4	53.5	40.7	31.2	
Black	14.2	13.1	13.2	14.7	19.9	43.6	
Hispanic	20.3	17.7	21.9	26.0	31.8	24.5	
Other	8.1	8.9	7.4	5.9	7.7	0.7	

[a] These represent unadjusted Ns and adjusted percentages.

[b] BMI: Body mass index

[c] P-value is based on chi-square test, and denotes a difference in percentage individuals in each weight class as a function of age, sex, income, or race, respectively

Table 2

Odds of Reporting Weight Loss Behaviors by Weight Status, Relative to Healthy Weight: How have you tried to change your weight?

	Overall Prevalence (%)	Overweight[a]	Class 1 Obesity[a]	Class 2 Obesity[a]	Class 3 Obesity[a]
Been on a Diet	43.8	**1.6 (1.21–2.12)** *	**2.63 (2.08–3.32)** *	**4.05 (2.98–5.51)** *	**6.28 (3.63–10.87)** *
Starved	18.2	0.92 (0.63–1.34)	**1.47 (1.07–2.02)** *	1.07 (0.72–1.59)	1.12 (0.62–2.05)
Cut back on eating	73.1	**2.06 (1.60–2.66)** *	**3.08 (2.41–3.93)** *	**3.87 (2.72–5.50)** *	**6.12 (3.58–10.44)** *
Skipped meals	35.3	1.21 (0.89–1.64)	**1.85 (1.44–2.39)** *	**1.68 (1.22–2.32)** *	**2.01 (1.28–3.15)** *
Exercised	92.2	**1.34 (1.05–1.72)** *	**1.65 (1.34–2.04)** *	**2.10 (1.47–3.01)** *	**2.56 (1.54–4.25)** *
Eaten less sweets/fats	83.5	**1.79 (1.36–2.36)** *	**1.77 (1.34–2.32)** *	**3.03 (2.22–4.13)** *	**4.27 (2.50–7.30)** *

[a]Odds ratio (95% confidence interval) from ordered logit reporting odds that a child of this weight status is more likely to report a particular weight loss behavior compared to a healthy weight child, adjusted for race, income, age, and sex

*Statistically significant

Table 3

Odds of Reporting Motivating Factors for Weight Loss Attempt, by Weight Status: Why Are you Trying to Change Your Weight?[a]

		Overall Prevalence %	Overweight[b]	Class 1 Obesity[b]	Class 2 Obesity[b]	Class 3 Obesity[b]
LOOKS	Look Better	35	0.91 (0.60–1.39)	1.10 (0.79–1.53)	0.95 (0.60–1.49)	0.59 (0.2901.21)
	Clothes Fit Better	13.2	1.14 (0.66–1.97)	1.35 (0.80–2.27)	1.69 (0.93–3.06)	1.42 (0.65–3.12)
	Want to be skinny	2.3	**2.08 (1.14–3.80)** *	**3.94 (2.32–6.73)** *	**4.78 (2.23–10.26)** *	**2.91 (1.14–7.41)** *
PEER RELATIONS	Get Teased	9	1.28 (0.58–2.82)	**2.47 (1.38–4.44)** *	**2.62 (1.29–5.31)** *	**2.66 (1.15–6.16)** *
	Boys will Like Me Better	4.1	0.42 (0.16–1.12)	1.10 (0.46–2.63)	1.51 (0.51–4.53)	0.30 (0.06–1.65)
	Girls will Like me better	4	1.20 (0.45–3.21)	1.49 (0.60–3.67)	1.72 (0.63–4.66)	0.94 (0.25–3.47)
ADULT INFLUENCE	Parent wants me to	8.1	1.39 (0.63–3.06)	**4.05 (2.24–7.33)** *	**5.13 (2.45–10.75)** *	**10.23 (3.72–28.14)** *
	Teacher/coach wants me to	1.3	0.55 (0.11–2.78)	0.53 (0.12–2.41)	1.31 (0.33–5.20)	2.45 (0.60–10.05)
	Health Professional wants me to	4.7	1.53 (0.48–4.89)	**4.26 (1.83–9.93)** *	**4.83 (1.74–13.37)** *	**6.98 (2.25–21.61)** *
HEALTH	Be Healthier	48.8	**1.56 (1.09–2.26)** *	**1.82 (1.21–2.74)** *	**1.89 (1.31–2.72)** *	**2.10 (1.14–3.87)** *
	Better at Sports	30.5	0.72 (0.47–1.12)	0.88 (0.65–1.21)	0.70 (0.45–1.09)	0.88 (0.47–1.67)
	Want to feel better	1.9	1.03 (0.36–2.97)	1.11 (0.39–3.12)	0.66 (0.19–2.25)	0.19 (0.02–1.66)
MODELING BEHAVIOR	Friends are trying	1.8	0.96 (0.28–3.30)	1.51 (0.50–4.57)	0.50 (0.08–2.98)	1.31 (0.30–5.69)
	Someone in family is trying	6	1.46 (0.69–3.09)	1.40 (0.71–2.78)	1.10 (0.39–3.15)	2.13 (0.35–13.11)
	Other	2.3	1.12 (0.41–3.08)	0.48 (0.17–1.34)	0.83 (0.33–2.09)	0.19 (−.02–1.54)

[a] Participants could choose more than one reason for trying to lose weight.

[b] Odds ratio (95% confidence interval) reporting odds that a child of this weight status is more likely to report a particular weight loss motivation compared to a healthy weight child, adjusted for race, income, age, and sex

* Statistically significant

Table 4

Association Between Behaviors and Motivations: Of the participants that report a motivation, the percent who report each behavior sometimes or a lot.

		Healthy		Unhealthy		Unsure	
		Exercised	**Eat less sweets or fatty foods**	**Starved**	**Skipped meals**	**Been on a Diet**	**Cut back on eating**
LOOKS	Look Better	97.6	89.1	21.3	43.6	55.7	**86.5** *
	Clothes Fit Better	96.1	92.1	22.4	42.9	**66** *	85.6
	Want to be skinny	95	83.5	14.6	**40.0** *	53.2	77.8
PEER RELATIONS	Get Teased	94.6	88.1	**31.5** *	**58.36** *	57.2	86.9
	Boys will Like Me Better	**90.4** *	95.5	34	**66.2** *	68.13	86.9
	Girls will Like me better	92.5	90.2	17.2	**57.5** *	61.2	60
ADULT INFLUENCE	Parent wants me to	94.2	89.8	25.2	45.3	**70.5** *	89.1
	Teacher/coach wants me to	90.9	85.1	30.1	60.5	**71.9** *	77
	Health Professional wants me to	96.6	90.9	**21.5** *	49.8	**71.8** *	85.4
HEALTH	Be Healthier	97.6	90.4	18.7	40	57.8	84.3
	Better at Sports	**97.9** *	**92.6** *	19.7	45.5	58.5	84
	Want to feel better	90.3	78.4	**35.4** *	56.4	64.4	81.5
MODELING BEHAVIOR	Friends are trying	93.7	84.1	**41.2** *	62.2	**78.84** *	77.6
	Someone in family is trying	92.5	86.3	25.5	43.2	63.9	78.9

* Statistically significant, $p<0.05$, P-value is based on chi-square test, and denotes a difference in percentage of individuals reporting a behavior

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