Weight perception and perceived attractiveness associated with self-rated health in young adults

Catherine L. Idema, Sarah E. Roth*, Dawn M. Upchurch

Department of Community Health Sciences, UCLA Fielding School of Public Health, 650 Charles Young Drive South, Los Angeles, CA 90095-1772, United States of America

ABSTRACT

Self-rated health (SRH) is a widely used and valid marker of overall health and wellbeing and demographic differences in SRH are well-established. To date, few studies have examined how multiple components of body image shape young adults' SRH. The purpose of this study was to investigate the contributions of weight perception and perceived attractiveness on SRH among young adults. Data were from Wave IV (2007–2008) of the National Longitudinal Study of Adolescent to Adult Health (Add Health) and young women and men ages 24–34 were analyzed (n = 7044 women, n = 6594 men) in April 2018. All analyses were weighted and stratified by gender. Design-based F test and ordinal multinomial logistic regression were used. For both genders, relative to Whites, Hispanic, Black, and Asian young adults reported poorer health; women and men with higher education and income reported better health. Independent of measured body mass index (BMI), young adults who thought they were underweight or overweight reported poorer health relative to those who thought their weight was normal. Both young women and young men who thought they were more attractive also reported better health. This study demonstrates that weight status, perceived weight status, and perceived attractiveness independently impact SRH for both young men and women controlling for race/ethnicity, nativity status, marital status, education, income, and number of health conditions.

Self-rated health (SRH) is a frequently-used, global measure of subjective health status and validated for a wide range of populations (Allen et al., 2016; Idler and Benyamini, 1997). SRH is a significant predictor of mortality and morbidity (DeSalvo et al., 2006; Latham and Peek, 2013), and a stronger indicator of poor health than many biological health indicators (Idler and Benyamini, 1997; Herman et al., 2013). SRH may derive this predictive utility because it is a multidimensional, subjective construct based on various sources of information, including current psychological and physical states and functioning as well as social and environmental determinants that affect health outcomes (Krause and Jay, 1994; Schüz et al., 2011).

SRH varies by demographic characteristics including age, gender, race/ethnicity, and socioeconomic status (SES), and by health behaviors and lifestyle practices, including body mass index (BMI) (Centers for Disease Control and Prevention (CDC), 2008; Franks et al., 2003; Imai et al., 2008; National Center for Health Statistics and Centers for Disease Control and Prevention, 2016). Psychosocial factors such as perceived social support are also associated with SRH (Caetano et al., 2013). Moreover, society's emphasis on body appearance, especially body shape and body size (Grogan, 2017), suggests that body image

may also impact SRH (Sabik, 2015). Further, these factors may be particularly salient in young adulthood because individuals often experience heightened body dissatisfaction during this period (Bucchianeri et al., 2013). However, few studies have examined how other aspects of body size and physical appearance, like weight status, perceived weight status, and perceived attractiveness, contribute to demographic differences in SRH. While some studies have looked at the impact of BMI and weight perception on self-rated health (Imai et al., 2008; Ford et al., 2001; Okosun et al., 2001; Heshmat et al., 2015; Swallen, 2005; Herman et al., 2013), our paper contributes to the literature by adding in the construct of perceived attractiveness. Furthermore, many of these studies have used non-U.S.-based, non-nationally representative samples in the analysis. Our paper is the first to our knowledge to analyze all three constructs among nationally-representative sample of adults in the United States.

Gender differences in SRH emerge early in life (McCullough and Laurenceau, 2004) and women tend to report poorer health than men (National Center for Health Statistics and Centers for Disease Control and Prevention, 2016). Few studies have explicitly assessed SRH during young adulthood (mid-20s to mid-30s), despite evidence showing the

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rate of fair/poor health among 18–24-year-olds is double that of those under 18 (National Center for Health Statistics and Centers for Disease Control and Prevention, 2016). Furthermore, research has shown influences on SRH differ between adolescents and adults (Zullig et al., 2005). This suggests that young adulthood may be an important transitional period and emphasizes the importance of understanding the effect of different factors on SRH in young adulthood.

Weight status is also associated with SRH (Imai et al., 2008; Ford et al., 2001; Okosun et al., 2001; Swallen, 2005). Underweight and obese (as assessed by BMI) individuals tend to report poorer health than normal weight individuals weight for both men and women (Imai et al., 2008; Ford et al., 2001; Okosun et al., 2001; Swallen, 2005). However, one study of Iranian adults found no significant relationship between self-reported body mass index and self-rated health (Haghighian Roudsari et al., 2015). Furthermore, findings related to the association of overweight and SRH by gender are inconsistent. Two studies found that being overweight (versus normal weight) was significantly associated with poorer SRH for women but not for men (Ford et al., 2001; Okosun et al., 2001). Conversely, others found that both overweight men and women had higher odds of reporting poor/fair health (Imai et al., 2008). Similarly, a nationally representative study of adolescents found overweight adolescents reported poorer health than their normal weight counterparts (Swallen, 2005). When evaluating gender-stratified models, one study found there were no differences in SRH among normal weight and overweight girls (Swallen, 2005). Yet overweight boys reported poorer health than their healthy weight peers.

Perceived weight may be one factor underpinning inconsistencies in these findings. Research exploring the relationship between weight perception and SRH is limited, and what exists suggests weight perception may also be an important predictor of SRH. Two recent studies found that both men and women who perceived themselves as overweight or obese, regardless of weight status, reported poorer health compared to those who perceived their weight as normal (Herman et al., 2013; Heshmat et al., 2015).

Gender differences in SRH by weight status may also be driven by perceived attractiveness. For both genders, those who perceive themselves as less attractive report poorer health than those who perceive themselves as more attractive (Anderson et al., 2002; Breidablik et al., 2008; Page et al., 2009). Further, young women report higher levels of body dissatisfaction than young men, particularly as they move from adolescence to young adulthood, which may also contribute to women's lower SRH (Bucchianeri et al., 2013; Frederick et al., 2007; Knauss et al., 2007). While some research has explored the relationship between body dissatisfaction and SRH, this research has predominantly focused only on teenage and older adult women and has not used an explicit measure of perceived attractiveness (Anderson et al., 2002; Breidablik et al., 2008). The present study adds to this literature by seeking to understand how both weight perception and perceived attractiveness shape SRH among young women and men.

To our knowledge, no other study has explicitly evaluated the combined contributions of weight status, weight perception, and perceived attractiveness on SRH, among both young men and women, in a nationally representative sample of young adults. We hypothesize that (a) weight status will have an independent effect on SRH, such that overweight and obese young adults will report poorer health compared to normal weight young adults; (b) perceived weight status will have an independent effect on SRH, such that those who perceive themselves as overweight or very overweight will report poorer health compared to those who perceive themselves as normal weight; and (c) perceived attractiveness has an independent effect on SRH, such that young adults who perceive themselves as more attractive will report better health as compared to these who perceive themselves as less attractive. In addition to these hypotheses, we expect gendered differences in the effects of weight status, perceived weight status, and perceived attractiveness on SRH. Because we anticipate these gender differences in those effects, we look at women and men separately.

1. Methods

1.1. Study design and survey description

Data are from the National Longitudinal Study of Adolescent to Adult Health (Add Health), a nationally representative sample of students in grades 7–12 during the 1994–1995 school year who have been followed prospectively until 2007–2008 (Wave IV) (Harris et al., 2009). Additional details of the study design have been reported elsewhere (Harris et al., 2009). The original sample (Wave I) included 80 high schools and 52 "feeder" middle schools and a probability sub-sample of students ("in-home" sample) who completed the longitudinal component of the study, which involved the completion of more detailed questionnaires (n = 20,745). At Wave IV, in-home sample respondents were 24–34 years old. Survey administrators contacted 92.5% of the Wave IV sample and interviewed 80.3% of the eligible sample (n = 15,701). For the current study, analyses were conducted in April 2018. We excluded young adults who did not have a valid sampling weight, had missing age, were "other" or American Indian/Alaskan Native race/ethnicity, women who were pregnant, or men and women who had missing values on the outcome or key covariates (n = 13,890). Analyses were limited to young adults in Wave IV due to concern that the constructs of weight perception and perceived attractiveness would have fundamentally different meanings during adolescence than for the young adults given the biologically and socially active changes that occur over the life course (e.g., ages 12–26 between Wave I and Wave III).

1.1.1. Dependent variable: self-rated health

Self-rated health was measured by the standard perceived health status question, "In general, how is your health?" (range 1 = poor to 5 = excellent).

1.1.2. Demographic characteristics and health conditions

Gender was self-reported and coded as a dichotomy. Age was measured continuously and categorically (24–34). The dichotomous variable was only used for bivariate analyses and created based on the median split, while the continuous variable was used in regression models. Race/ethnicity was self-reported, with any mention of Hispanic given priority (Hispanic, Non-Hispanic African American, Non-Hispanic Asian, Non-Hispanic White). Marital status was coded as follows: no partner, living together, living apart because of legal separation, living apart because of other reason such as career, military service, family illness. Nativity status was coded as a dichotomy (US born or not). Education was coded ordinally (less than high school, high school/GED, some college, four years of college or more). Annual household income was also coded ordinally (less than $25,000, $25,000–$49,999, $50,000–$74,999, $75,000 or more). Number of health conditions was coded continuously and as a trichotomy (0, 1, 2 +).

1.1.3. Weight status, weight perception, and perceived attractiveness

In Add Health, a standardized protocol was used to measure height and weight for computation of BMI (our measure of weight status) (Harris et al., 2009). Height was measured to the nearest 0.5 cm with shoes and accessories removed. Weight was measured to the nearest 0.1 kg using a calibrated digital scale. Then BMI was calculated using the formula weight (kg)/height^2 (m^2), and coded according to standard cutoffs (< 18.5 = underweight, 18–24.9 = normal, 25.0–29.9 = overweight, ≥ 30 = obese) (U.S. National Heart, Lung and Blood Institute, 2000). Because so few men and women were underweight, the underweight category was combined with normal weight. Weight perception was measured by the response to "How do you think about yourself in terms of weight?" (very underweight, underweight, about the right weight, slightly overweight, very overweight). Perceived attractiveness was assessed based on the response to "How attractive are you?" (not at all attractive, slightly attractive, moderately attractive, very attractive).

The items used in Add Health to measure weight perception and perceived attractiveness are identical or quite similar to those used in other large national health surveys namely the national Youth Risk Behavior Surveillance System, Girls Health Enrichment Multi-Site Studies (GEMS), the Pathways Study, and the Child and Adolescent Trial for Cardiovascular Health (CATCH) (Perry et al., 1997; Centers for Disease Control and Prevention, 2015; Obarzanek and Pratt, 2003; Story et al., 2001).

1.2. Analysis

All analyses used individual-level sampling weights that account for complex sampling design, attrition, and adjust variance estimates. Weighted univariate and bivariate estimates are presented and bivariate analyses used the design-based F-test. Ordinal logistic regression was used and adjusted odds ratios (AOR) with 95% confidence intervals (CI) are presented. Interactions between weight status and perceived attractiveness, weight status and weight perception, and perceived attractiveness and weight perception were tested individually. These were selected a priori, based on the expectation that they might be present. As no interactions were significant, the final model presented excludes any interactions. All analyses were stratified by gender. Stata 13.1 was used for all analyses. The study was approved by the institution's review board for human subjects.

2. Results

Table 1 shows the distributions of the characteristics of young women and men. The average age for both genders was 29 (not shown), and 55% of young women and 51% of young men were ages 24–28. Over two-thirds of both women and men were White, another 17% of women and 16% of men were Black, 12% of both women and men were Hispanic, and about 3% of both women and men were Asian. About half of young women and nearly two-thirds of young men were single. The vast majority of young women and men were US-born. Over two-thirds of young women and 58% of young men had achieved at least some college and about half of both young women and young men reported household income of $50,000 or more. The majority of young adults had no health conditions, although about 26% of women and men report one condition and 30% of women and 20% of men reported two or more conditions. According to measured BMI, 38% of young women and 35% of young men were obese and 25% of young women and 35% of young men were overweight. Very few young women thought they were underweight (5%) but roughly 12% of young men perceived themselves as underweight. About 45% of women thought they were slightly overweight and another 20% said they were very overweight. The percent of men who said they were slightly overweight was similar (41%), although the percent of men who said they were very overweight was much lower than women (7%). About 31% of both young women and men said they thought they were only slightly attractive and half said they were moderately attractive.

Tables 2 and 3 show the bivariate association between selected characteristics and SRH for young women and men. For both genders, there were significant differences in SRH for all covariates except age (women) and nativity status (both women and men). Higher percentages of Hispanic and Black young men and women reported poor or fair health relative to White and Asian young adults. Higher percentages of single and married women and men reported better health compared to those who were living apart from their partners, and a higher percentage of women than men living apart from their partners due to legal separation reported poor health. For men and women, higher levels of education and income were associated with better self-rated health, while those with more health conditions reported poorer health. Weight status was significantly associated with SRH for both women and men; for example, those who were overweight or obese reporting poorer health. Similarly, perceived weight status was

Table 1

Selected characteristics of young adults, ages 24–34, add health, 2007–2008 (n = 13,638).

	Percentage of women[a]	Percentage of men[a]
Demographic characteristics and health conditions		
Age		
24–28	54.80	50.97
29–34	45.20	49.03
Race/ethnicity		
Hispanic	12.06	12.22
African American	16.59	15.80
Asian	3.18	3.44
White	68.16	68.54
Marital status		
Single	54.51	60.83
Living together	40.72	35.86
Living apart because of legal separation	3.36	2.21
Living apart because of other reason	1.41	1.09
Nativity status		
Born in the US	95.86	95.78
Foreign-born	4.14	4.22
Education		
Less than high school	7.62	10.57
High school/GED	23.94	30.79
Some college	35.28	31.93
4-year college or more	33.16	26.72
Household income		
Less than $25,000	20.09	15.68
$25,000–$49,999	31.26	31.86
$50,000–$74,999	22.96	22.88
$75,000 or more	25.70	29.58
Number of health conditions		
0	43.15	54.51
1	26.93	25.95
2+	29.92	19.55
Weight status, weight perception, and perceived attractiveness		
Weight status[b]		
Underweight/normal	37.37	30.23
Overweight	24.61	34.60
Obese	38.01	35.17
Weight perception		
Underweight	4.85	11.88
About the right weight	29.89	40.22
Slightly overweight	44.95	41.07
Very overweight	20.00	7.36
Perceived attractiveness		
Not at all attractive	2.93	2.29
Slightly attractive	30.57	31.30
Moderately attractive	52.10	49.92
Very attractive	14.39	16.49

Notes:
[a] Weighted percentages.
[b] Weight status determined by CDC-defined BMI cut-points.

associated with SRH for both genders; higher percentages of under- or overweight individuals reported poorer health. Last, perceived attractiveness was significantly associated with SRH for both women and men, such that those who thought they were moderately or very attractive reported better SRH than those who thought they were less attractive.

Table 4 presents the AORs of the multivariate results. Age was significantly associated with SRH for women but not men, such that older women reported better health. For both genders, compared to White young adults, Hispanic, Black, and Asian young adults reported significantly poorer health. Marital status was not associated with SRH for women, but compared to single men, those who were living together reported better SRH. Nativity status was significantly associated with SRH among men but not women, such that men who were foreign-born reported better health than those born in the US. Among both women

Table 2

Bivariate association between demographics and SRH among young women, add health, 2007–2008 (n = 7044).

	Self-rated health (%)[a]					Significance[b]
	Poor	Fair	Good	Very good	Excellent	
Overall	1.57	8.55	34.48	38.31	17.09	
Demographic characteristics and health conditions						
Age group (years)						
24–28 years	1.77	8.11	34.94	38.39	16.80	p = .6486
29–34 years	1.33	9.09	33.92	38.22	17.44	
Race/ethnicity						
Hispanic	2.36	13.61	37.90	30.68	15.44	p < .001
African American	1.67	12.03	39.27	32.84	14.20	
Asian	1.48	7.60	40.36	35.25	15.31	
White	1.41	6.86	32.43	41.14	18.17	
Marital status						
Single	1.88	8.84	36.68	36.48	16.13	p < .001
Living together	1.15	7.19	31.24	41.43	18.99	
Living apart because of legal separation	19.36	19.36	35.02	31.40	11.78	
Living apart because of other reason	0.00	10.97	41.75	35.42	11.86	
Nativity status						
Born in the US	1.59	8.51	34.66	38.32	16.92	p = .6318
Foreign-born	1.20	9.45	30.19	38.13	21.02	
Education						
Less than high school	5.73	14.21	42.29	27.89	9.88	p < .001
High school/GED	1.69	13.87	41.34	31.28	11.82	
Some college	1.61	8.95	38.24	37.00	14.20	
4-year college or more	0.49	2.99	23.72	47.18	25.62	
Household income						
Less than $25,000	2.98	13.47	41.23	30.16	12.15	p < .001
$25,000 to $49,999	1.62	9.64	37.96	36.82	13.96	
$50,000 to $74,999	1.27	7.50	33.85	41.73	15.65	
$75,000 or more	0.68	4.32	25.52	43.44	26.03	
Number of health conditions						
0	0.45	4.58	31.50	41.28	22.18	p < .001
1	0.89	6.28	34.77	41.42	16.64	
2+	3.80	16.32	38.50	31.23	10.14	
Weight status, weight perception, and perceived attractiveness						
Weight status[c]						
Underweight/normal	0.89	2.94	23.54	45.94	26.69	p < .001
Overweight	0.53	6.67	34.66	41.03	17.12	
Obese	2.92	15.28	45.11	29.06	7.63	
Weight perception						
Underweight	4.03	8.45	44.40	33.56	9.57	p < .001
About the right weight	0.52	2.88	20.79	46.32	29.49	
Slightly overweight	0.84	8.24	37.78	39.11	14.04	
Very overweight	4.25	17.87	45.16	25.25	7.19	
Perceived attractiveness						
Not at all attractive	8.93	24.82	40.84	16.80	8.60	p < .001
Slightly attractive	0.93	11.38	40.35	35.66	11.68	
Moderately attractive	1.58	5.51	31.01	42.15	19.76	
Very attractive	1.42	10.26	33.24	34.43	20.64	

Notes:
[a] Weighted percentages.
[b] Significance of the design-based F-test.
[c] Weight status determined by CDC-defined BMI cut-points.

and men, young adults with higher levels of education and income reported significantly better health than those with lower levels. For both genders, those with a greater number of health conditions reported poorer health. As expected, among women, those whose weight status was overweight or obese reported significantly poorer health than women who were underweight/normal weight. However, weight status was not significantly associated with SRH among men. Women and men who perceived themselves to be either underweight, slightly overweight, or very overweight had poorer SRH relative to those who thought their weight was normal. Last, among women, compared to those who perceived they were "not at all attractive" those who thought they were "moderately" or "very attractive" reported significantly better health (AOR = 2.23, AOR = 2.66 respectively). Among men, compared to those who perceived they were "not at all attractive" those who thought they were "slightly," "moderately," or "very attractive" all reported significantly better health (AOR = 1.63, AOR = 1.86,

AOR = 3.26). Supplementary Table 1 presents separate bivariate regressions for the first three models (i.e, model 1 includes only weight status, model 2 only weight perception, and model 3 only perceived attractiveness) and model 4 includes weight status, weight perception, and perceived attractiveness. The substantive results (and statistical significance) are largely unchanged from the full model.

3. Discussion

This study demonstrates that both objective (BMI) and subjective psychosocial dimensions (perceived weight and perceived attractiveness) of body image are associated with SRH among a nationally representative sample of young adults in the US. Our findings also suggest these dimensions related to body image are important for both genders on SRH, the effects of these factors seem somewhat different for young women and men. Perceived weight status and perceived attractiveness

Table 3

Bivariate association between demographics and SRH among young men, add health, 2007–2008 (n = 6594).

	Self-rated health (%)[a]					
	Poor	Fair	Good	Very good	Excellent	Significance[b]
Overall	0.91	7.77	33.16	37.59	20.57	
Demographic characteristics and health conditions						
Age group (years)						
24–28 years	1.00	6.62	32.17	38.44	21.77	p = .0426
29–34 years	0.81	8.97	34.20	36.71	19.32	
Race/ethnicity						
Hispanic	0.86	12.26	32.45	35.07	19.36	p < .001
African American	0.80	11.12	35.84	29.32	22.93	
Asian	0.42	8.69	41.30	29.12	20.47	
White	0.97	6.15	32.26	40.37	20.25	
Marital status						
Single	1.08	8.76	33.65	36.32	20.19	p < .05
Living together	0.70	5.86	32.32	40.36	20.75	
Living apart because of legal separation	0.00	12.20	30.24	35.30	22.23	
Living apart because of other reason	0.00	6.12	39.26	22.26	32.36	
Nativity status						
Born in the US	0.95	7.74	33.38	37.59	20.34	p = .2355
Foreign-born	0.00	8.33	28.16	37.66	25.83	
Education						
Less than high school	2.99	14.52	44.86	25.77	11.86	p < .001
High school/GED	1.39	11.07	38.07	33.83	15.64	
Some college	1.19	8.45	36.28	38.28	15.81	
4-year college or more	0.58	3.14	23.64	45.08	27.56	
Household income						
Less than $25,000	1.09	12.03	41.59	27.75	17.54	p < .001
$25,000 to $49,999	1.02	8.34	33.16	39.07	18.41	
$50,000 to $74,999	0.44	7.80	29.68	40.43	21.65	
$75,000 or more	1.06	4.86	31.39	39.03	23.66	
Number of health conditions						
0	0.45	4.58	31.50	41.28	22.18	p < .001
1	0.89	6.28	34.77	41.42	16.64	
2+	3.80	16.32	38.50	31.23	10.14	
Weight status, weight perception, and perceived attractiveness						
Weight status[c]						
Underweight/normal	0.91	5.62	25.69	40.99	26.80	p < .001
Overweight	0.37	5.79	29.59	39.06	25.19	
Obese	1.45	11.56	43.10	33.23	10.67	
Weight perception						
Underweight	1.79	7.91	30.91	39.16	20.24	p < .001
About the right weight	0.20	4.69	23.14	39.37	32.59	
Slightly overweight	0.55	8.69	40.78	38.35	11.62	
Very overweight	5.50	19.70	49.95	20.48	4.37	
Perceived attractiveness						
Not at all attractive	6.70	18.58	41.75	25.82	7.16	p < .001
Slightly attractive	1.19	9.60	36.86	35.05	17.29	
Moderately attractive	0.43	6.43	32.60	40.48	20.05	
Very attractive	1.03	6.82	26.64	35.30	30.21	

Notes:
[a] Weighted percentages.
[b] Significance of the design-based F-test.
[c] Weight status determined by CDC-defined BMI cut-points.

were independently associated with SRH for both genders, while weight status was independently associated with SRH only among women.

The present study shows that women who are overweight or obese report poorer health as demonstrated in some earlier work (Ford et al., 2001; Okosun et al., 2001). However, we found weight status did not affect how men rated their overall health. This finding is a departure from previous literature showing that obese men report poorer SRH than their normal weight counterparts (Imai et al., 2008; Ford et al., 2001; Okosun et al., 2001). It is possible that young, overweight or obese men may not recognize their current or future health risk (Gregory et al., 2008a), suggesting a missed opportunity to change the trajectory of their BMI before the onset of chronic disease and other weight-related conditions. Our results may also reflect the reality that as overweight and obesity become more common among the general population, there are shifting perceptions among the public that normalize overweight and obesity (Johnson-Taylor et al., 2008; Langellier

et al., 2015). It may also be that women in our sample were more willing than men to report poorer health (Wang et al., 2013), or that other psychosocial factors played a role, such as having greater concern regarding physical appearance than men. Future research exploring the effect of weight status on men's SRH and their health behaviors, such as willingness to go to the doctor or change health behaviors, may help to elucidate the impact of this relationship on long-term health outcomes.

We also found that weight perception impacted SRH for both men and women, which aligns with previous research that used self-reported measures of BMI (Herman et al., 2013; Gregory et al., 2008b). Our findings show that weight perception is independently associated with SRH when controlling for objectively measured BMI. It is notable that we showed a perception of underweight was also a significant predictor of poor SRH as this relationship is often overlooked in the literature given the predominant focus on obesity. This finding is important as it shows the subjective dimensions of body image impact how both young

Table 4
Ordinal logistic regression[a] of predictors on SRH among young adults, add health, 2007–2008.

	Women (n = 7044)		Men (n = 6594)	
	Adjusted odds ratio	95% CI	Adjusted odds ratio	95% CI
Age[b]	1.05	[1.01, 1.09]	0.96	[0.93, 1.00]
Race/ethnicity				
Hispanic	0.64	[0.47, 0.85]	0.75	[0.60, 0.95]
African American	0.66	[0.55, 0.78]	0.67	[0.53, 0.84]
Asian	0.41	[0.27, 0.60]	0.48	[0.32, 0.72]
White	1.00	–	1.00	–
Marital status				
Living together	1.12	[0.98, 1.28]	1.29	[1.12, 1.48]
Living apart because of legal separation	0.71	[0.50, 1.02]	1.41	[0.96, 2.08]
Living apart because of other reason	1.01	[0.65, 1.57]	1.35	[0.71, 2.70]
Single	1.00	–	1.00	–
Nativity status				
Foreign-born	1.48	[0.99, 2.23]	1.49	[1.01, 2.21]
Born in the US	1.00	–	1.00	–
Education				
Less than high school	1.00	–	1.00	–
High school/GED	1.18	[0.78, 1.77]	1.80	[1.08, 1.67]
Some college	1.48	[1.04, 2.09]	2.08	[1.18, 1.88]
4-year college or more	2.53	[1.78, 3.59]	3.67	[1.21, 1.83]
Household income				
Less than $25,000	1.00	–	1.00	–
$25,000 to $49,999	1.12	[0.93, 1.35]	1.34	[1.08, 1.67]
$50,000 to $74,999	1.21	[0.98, 1.48]	1.49	[1.18, 1.88]
$75,000 or more	1.58	[1.30, 1.92]	1.49	[1.21, 1.83]
Number of health conditions[b]	0.73	[0.69, 0.77]	0.69	[0.65, 0.73]
Weight status[c]				
Underweight/normal	1.00	–	1.00	–
Overweight	0.77	[0.63, 0.95]	1.05	[0.86, 1.28]
Obese	0.46	[0.38, 0.56]	0.83	[0.66, 1.06]
Weight perception				
Underweight	0.36	[0.27, 0.47]	0.62	[0.49, 0.78]
Slightly overweight	0.60	[0.50, 0.71]	0.39	[0.32, 0.48]
Very overweight	0.40	[0.31, 0.51]	0.16	[0.11, 0.22]
Normal	1.00	–	1.00	–
Perceived attractiveness				
Not at all attractive	1.00	–	1.00	–
Slightly attractive	1.61	[0.82, 3.15]	1.63	[1.02, 2.62]
Moderately attractive	2.23	[1.14, 4.38]	1.86	[1.15, 2.99]
Very attractive	2.66	[1.34, 5.29]	3.26	[1.90, 5.60]

[a] Weighted analysis.
[b] Continuous variable.
[c] Weight status determined by CDC-defined BMI cut-points.

men and women perceive their overall health, though the bulk of body image has research focused predominately on white, heterosexual, able-bodied women (Cash, 2004; Halliwell, 2015). Clinical and public health professionals should be aware that regardless of how an individual appears physically, how he/she perceives his/her weight is an important indicator of how he/she feels about his/her overall health and may consequently affect his/her health behavior. Given that weight perception not only impacts how young men and women perceive their physical health but also their emotional and psychological health (Muennig et al., 2008; Gaskin et al., 2013), future research should seek to further understand what role gender plays in influencing these relationships.

Most notably, the present study also showed that perceived attractiveness impacts how both men and women rate their health, independent of other aspects of body size and image. To our knowledge, the present study is one of the first to explore the influence of perceived attractiveness on how young adults perceive their overall health. For both genders, those who perceived themselves as more attractive reported better health though the threshold of attractiveness differed by gender somewhat. Men could perceive themselves as only slightly attractive and continue to report good health, while women had to perceive themselves as at least moderately attractive before reporting better health. These findings are similar to what previous research has found (Page et al., 2009; Wilson, 2009), but historically there has not been much investigation into the relationship between attractiveness and SRH, and the literature that does exist uses fairly homogenous study samples focused predominantly on women (Anderson et al., 2002; Breidablik et al., 2008; Page et al., 2009). These findings further confirm that body image is an important factor shaping SRH in young adults and demonstrates that how young adults feel about their physical appearance beyond their weight shapes their view of their health. Consequently, clinical and public health professionals may need to begin to take an even broader view of the individual factors shaping an individual's health. Future research should seek to understand more deeply the driving factors of body image among men and women, and how such factors affect SRH.

We also find differences in SRH based on demographic characteristics and health conditions, as earlier described (Centers for Disease Control and Prevention (CDC), 2008; Franks et al., 2003; National Center for Health Statistics and Centers for Disease Control and Prevention, 2016). Among both men and women, White, highly-educated, and high-income individuals reported better health than did their non-White, less educated, and low-income counterparts. In addition, the number of chronic conditions closely aligned with SRH for both men and women (National Center for Health Statistics and Centers for Disease Control and Prevention, 2016; Mavaddat et al., 2014).

3.1. Limitations

Though both the external and internal validity of the present study seem strong, the study is not without its limitations. First, our analysis used cross-sectional data and so limits any causal discussion. Also, the data were collected in 2007–2008 and thus our findings apply to older cohorts of young adults. Obesity rates have increased, leading to the possibility that social norms and expectations surrounding both the ideal and "normal" body size have changed. However, Add Health consists of a large and nationally representative sample of young adults, which serves to offset some of these concerns, especially in the context of earlier research in this area that analyzed samples of women only or focused on college samples of young adults. Additionally, we added to the body satisfaction literature by measuring perceived attractiveness, rather than other measures of body satisfaction. However, given that perceived attractiveness has not been used extensively in the weight perception literature, the comparability of our findings to other studies exploring weight perception and body satisfaction may be limited.

4. Conclusions

Our research suggests multiple dimensions of body image significantly impact the SRH of young adults. Accordingly, public health professionals should be sensitive to these differences, tailoring interventions to meet the psychological and physical health needs of their target population without unintentionally adversely affecting men or women's body image. Given that weight perception and perceived attractiveness may affect an individual's perception of his/her overall health, health professionals should seek to address not only physical health outcomes but outcomes relating to body image as well. Subjective assessments of weight and attractiveness play an independent role in SRH. Given that SRH is predictive of future health outcomes, intervening on those factors associated with it can potentially influence later health and overall quality of life. Moreover, intervening during early adulthood may well reduce morbidity in later life. Physical health does not function in isolation from psychological and social factors, and health programs must reflect that reality.

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Conflict of interest statement

The authors declare there is no conflict of interest.

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