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Body Satisfaction:

Effect on Thorough Skin Self-Examination

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Abstract

Background—Melanoma and obesity have both increased in recent years. Given the propensity of body dissatisfaction among the obese, the objectives of this paper were to determine how body satisfaction might influence skin examination and to examine differences in this relationship by gender among the participants of Check-It-Out, a study to increase thorough skin self-examination (TSSE).

Methods—Through primary care offices, 2126 participants were recruited from April 2000 to November 2001 for the baseline cross-sectional telephone data from the Check-It-Out study. TSSE was defined as the self-reported examination of all seven key areas of the body. Body satisfaction was reported based on the degree of disagreement or agreement with the statement *I like the way my body looks*. Analyses were conducted in 2005 and 2006.

Results—Among participants, 18% reported performing TSSE, 34% were normal or underweight, 36% were overweight, and 30% were obese. Overall, 23% strongly agreed, 45% somewhat agreed, 19% somewhat disagreed, and 12% strongly disagreed with the statement *I like the way my body looks*. Body satisfaction was less common among women than men. The odds of conducting TSSE were 1.6 for the total sample (1.9 for women and 1.2 for men) for those with strong agreement that they like the way their body looks. In multivariate analysis, body satisfaction was associated with TSSE performance for women and both genders together, along with the availability of a partner (both genders together and men), the availability of a wall mirror, the advice of a physician, and the use of glasses or contacts(women only).

Conclusions—Body satisfaction is an important factor in TSSE performance, especially among women, and should be considered along with other risk factors.

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Introduction

Obesity has well-known negative medical and psychological consequences.¹ Overweight and obese individuals are more likely have low self esteem and are more likely to be dissatisfied with their bodies. Poor body image, defined as a disproportionate view of one's body size, is especially prevalent among women.^{2,3} Body satisfaction, a separate construct from body image, denotes an investment in and concern with appearance.³ However, the degree to which body satisfaction is associated with examination of the body, an important health behavior, has not been documented.

Another public health dilemma is melanoma, which is increasing in incidence and continues to be the leading cause of death among skin conditions. Regular skin self-examination provides opportunities to detect melanoma at earlier stages,⁴ thus potentially reducing skin cancer mortality. Poor motivation may decrease the performance of such a behavior. The purpose of this study was to assess whether body fatness, body satisfaction, and gender, or all three, are associated with the practice of thorough skin self-examination (TSSE). The hypothesis was that body satisfaction is associated with less TSSE, especially among women.

Methods

The Check-It-Out project was an RCT in which project interventions were found to be effective at increasing TSSE.⁵ Participants for the project were recruited from 11 medical practices in Rhode Island from April 2000 to November 2001. The current analysis, conducted in 2005 and 2006, included all participants who completed the baseline telephone survey regardless of whether or not they participated in the subsequent RCT.⁵

Self-reported height and weight were used to calculate BMI (kg/m^2), and weight status categories were created based on CDC definitions of BMI <25, 25–29.9, 30–39.9, and >40 for underweight or normal, overweight, obese, and morbidly obese, respectively. Body satisfaction was measured by a single question posed among a list of attitudes that asked the respondent to agree or disagree with the statement *I like the way my body looks*. Several variables previously identified as associated with TSSE were also assessed, including the availability of a partner, a report of physician's advice, the availability of a wall mirror, and the use of glasses or contacts.⁶

The a priori criterion for completion of TSSE was a dichotomous variable based on reporting the examination of seven specified areas of the body at least one time in the last 2-month period. The demographic and TSSE data-collection methods have been previously detailed.^{5–7}

Statistical Analyses

Demographic characteristics, TSSE status, TSSE correlates from other studies, weight status, and body satisfaction were compared by gender using chi-square analysis (Table 1). Also, TSSE status was examined, using chi-square with each demographic and the previously correlating variables, as well as with weight status and body satisfaction for the

entire sample and within each gender separately. The difference in those relationships by gender was calculated using Mantel–Henzel statistics. To further understand these relationships, univariate logistic regression models were constructed with weight status, body satisfaction, availability of a partner, availability of a wall mirror, use of glasses or contacts, and physician’s advice as independent variables and TSSE as the dependent variable, both for the sample as a whole and stratified by gender. Next, multivariate logistic regression models, both for the total sample and stratified by gender, were constructed with TSSE as the dependent variable and body satisfaction, partner, glasses, mirror, and physician’s advice as well as all variables that were associated with TSSE in univariate models at $p = 0.15$ as the independent variables. Statistical analyses were performed using SAS, version 8.2.

Results

Of the 2126 respondents to the baseline telephone survey, 59% were women, almost 22% were aged 65 or older, and 36% and 30% were overweight or obese, respectively. About one third (31.5%) reported disagreement with the body satisfaction statement.

Both weight status and body satisfaction differed by gender. Women were more likely to be normal weight or underweight than men, but more frequently reported somewhat or strong disagreement with the statement *I like the way my body looks*. TSSE did not differ by weight status. TSSE was more prevalent among those reporting strong agreement with the statement of body satisfaction compared to those reporting only some agreement or disagreement. This association occurred for both women and men (26.4% and 21.4%, respectively), with a stronger association for women than for men ($p=0.01$).

Univariate logistic regression analyses (Table 2) revealed that TSSE was associated with body satisfaction ($p=0.0030$) in addition to a physician’s advice and the availability of a wall mirror for both genders, the use of glasses or contacts additionally for women, and the availability of a partner for men.

The multivariate analyses revealed that partner availability, availability of a wall mirror, and a physician’s advice were still associated with TSSE for both genders, and use of glasses or contacts were additionally associated for women. Body satisfaction was associated with TSSE for the total sample, but only the associations for women reached significance. The availability of a wall mirror (OR=2.0, $p=0.01$) and a physician’s advice (OR=2.0, $p=0.01$) had somewhat stronger associations with TSSE than did the availability of a partner (OR=1.4, $p=0.05$), or body satisfaction (OR=1.4, $p=0.01$).

Discussion

These results suggest that while body weight is not related to TSSE, body satisfaction is associated with increased TSSE, especially among women, with those more satisfied with their bodies reporting more TSSE.

The consideration of these data must take into account the limitations that these methods impose on interpretation. This study sample may have been more prevention-oriented than

the general population, as they have access to health services and were willing to complete a health survey by telephone. Also, results from patients who live in southern New England might not necessarily be generalized to other populations. Physicians who volunteered in this project might have been more likely to be active in public health projects than the general physician community. However, the use of a telephone survey as opposed to in-person administration may have avoided respondent reactivity to the questions, which could have led to more socially desirable answers.

This study found that body weight was not a barrier to performing TSSE, but body satisfaction was consistently associated with TSSE, especially among women. Body image among the general population has been identified as a barrier to cancer screening among women⁹ and has been highlighted as a concern among men with testicular cancer.¹⁰ While many associations have been found for the concept of body image, less has been published on the association of health behaviors with the more general concept of body satisfaction, which may be more aligned with self-esteem. While self-esteem has been found to be directly associated with the use of preventive health services,¹¹ weight status among women has been associated with delayed care,^{12,13} delayed cancer screening,^{14–17} and the late-stage diagnosis of breast cancer.^{18,19} These associations are particularly striking given the high use of overall health services among the obese.²⁰

It is unfortunate that TSSE is not performed more commonly, as fatal melanomas may be visible on the skin. The encouragement of TSSE might be better received in counseling or other health messages if sensitivity to body satisfaction as a potential barrier is considered.

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Table 1
Participants who reported performing TSSE by demographic characteristics and demographic group

Demographic and other characteristics	Both genders (%) (N=2126) ^a	Both genders: TSSE (%) ^b	Women (%) (n=1248, 58.7% total) ^a	Women: TSSE (%) ^b	Men (%) (n=878, 41.3% total) ^a	Men: TSSE (%) ^b
Thorough skin self examination (TSSE)						
No	82.1		81.3		88.3	<i>p</i> =0.25 ^g
Yes	17.9		18.7		16.7	
Race/Ethnicity						
White	94.6	<i>p</i> =0.24 ^c	96.3	<i>p</i> =0.18 ^d	92.1	<i>p</i> =0.61 ^e
Hispanic	1.1		0.9		1.4	<i>p</i> =0.01 ^f
Black	1.4		0.8		2.2	<i>p</i> =0.01 ^g
Other	3.0		2.0		4.3	
Age group (years)						
25	2.9	<i>p</i> =0.12 ^c		<i>p</i> =0.16 ^d		<i>p</i> =0.70 ^e
26–35	10.2		3.1		2.5	<i>p</i> =0.01 ^f
36–45	22.3		12.2		7.3	<i>p</i> =0.01 ^g
46–55	25.8		23.7		20.2	
56–65	17.2		25.6		26.2	
66–75	14.4		15.7		19.2	
75+	7.3		12.9		16.5	
Education						
Less than high school	7.2	<i>p</i> =0.64 ^c	6.7	<i>p</i> =0.83 ^d	8.1	<i>p</i> =0.23 ^e
High school graduate	27.2		6.2		8.6	<i>p</i> =0.01 ^f
Post high school	28.4		28.6		25.0	<i>p</i> =0.01 ^g
College graduate	37.3		29.8		26.4	
Employment status						
Employed	63.0	<i>p</i> =0.08 ^c	35.4	<i>p</i> =0.45 ^d	40.0	<i>p</i> =0.01 ^e
Unemployed	3.7		61.5		65.3	<i>p</i> =0.01 ^f
Retired	22.9		4.1		3.2	<i>p</i> =0.01 ^g
Other	10.3		21.4		25.2	
			13.1		6.4	

Demographic and other characteristics	Both genders (%) (N=2126) ^d	Both genders: TSSE (%) ^b	Women (%) (n=1248, 58.7% total) ^d	Women: TSSE (%) ^b	Men (%) (n=878, 41.3% total) ^d	Men: TSSE (%) ^b
Income (\$)		<i>p</i> =0.26 ^c		<i>p</i> =0.18 ^d		<i>p</i> =0.02 ^e
0–19,999	11.2	22.3	14.3	20.9	7.3	26.3
20,000–49,999	35.1	16.8	35.1	20.5	35.1	12.1
50,000–79,999	28.6	16.8	28.1	14.6	29.3	19.4
80,000	25.0	19.2	22.4	21.1	28.3	17.3
Weight status		<i>p</i> =0.42 ^c		<i>p</i> =0.39 ^d		<i>p</i> =0.33 ^e
Normal or underweight (BMI<25)	34.1	19.0	44.0	20.7	20.3	14.0
Overweight (BMI=25–29.9)	35.6	16.4	27.2	17.5	47.3	15.7
Obese (BMI=30–39.9)	25.2	17.8	22.6	16.4	29.0	19.3
Morbidly obese (BMI= 40)	5.0	21.9	6.2	21.3	3.4	23.3
Body satisfaction		<i>p</i> =0.01 ^c		<i>p</i> =0.02 ^d		<i>p</i> =0.05 ^e
Responses of agreement to <i>I like the way my body look</i>						<i>p</i> =0.01 ^f
Strongly agree	23.3	23.6	17.1	26.4	32.1	21.4
Somewhat agree	45.2	16.8	43.7	17.9	47.4	15.2
Somewhat disagree	19.1	15.1	22.5	16.8	14.2	11.3
Strongly disagree	12.4	16.4	16.7	15.9	6.3	18.2
Availability of a partner		<i>p</i> =0.01 ^c		<i>p</i> =0.01 ^d		<i>p</i> =0.01 ^e
<i>How often does someone other than a physician or nurse help you to thoroughly examine your skin?</i>						<i>p</i> =0.01 ^f
<i>Sometimes people have someone else help them with skin self-examination by looking at harder-to-see areas of the body, such as the low back. Is there someone whom you would feel comfortable asking to help examine your skin?</i>						<i>p</i> =0.01 ^f
No	70.9	11.5	73.5	13.1	67.2	9.0
Yes	29.1	33.5	26.5	34.2	32.8	32.6
Availability of a wall mirror		<i>p</i> =0.01 ^c		<i>p</i> =0.01 ^d		<i>p</i> =0.01 ^e
<i>Do you have a wall mirror that you can use to examine your skin from head to toe?</i>						<i>p</i> =0.27 ^f
No	19.7	9.5	18.8	9.8	21.0	9.2
Yes	80.3	19.9	81.2	20.7	79.0	18.8
Glasses or contacts		<i>p</i> =0.04 ^c		<i>p</i> =0.02 ^d		<i>p</i> =0.22 ^e
<i>In order to examine your skin thoroughly, do you have to be wearing your glasses or contacts?</i>						<i>p</i> =0.01 ^f

Demographic and other characteristics	Both genders (%) (N=2126) ^a	Both genders: TSSE (%) ^b	Women (%) (n=1248, 58.7% total) ^a	Women: TSSE (%) ^b	Men (%) (n=878, 41.3% total) ^a	Men: TSSE (%) ^b
No	58.5	16.1	60.1	16.3	56.2	15.8
Yes	26.5	20.6	27.1	24.0	25.7	15.6
No, I don't have to be wearing them	15.0	20.1	12.8	18.9	18.1	21.4
Physician's advice		<i>p</i> =0.01 ^c		<i>p</i> =0.01 ^d		<i>p</i> =0.01 ^e
<i>Has your doctor or anyone in the doctor's office ever asked you to regularly examine (look at and check) all of your skin for growths or changes in spots or moles</i>						
Yes	29.6	26.6	31.6	24.7	26.8	29.8
No	70.4	14.4	68.4	15.9	73.2	12.5

^a Percentage of participants by demographic characteristics

^b Percentage of each demographic group who reported performing TSSE

^c *p* value for demographics differences in TSSE for both genders together

^d *p* value for demographics differences in TSSE among women

^e *p* value for demographics differences in TSSE among men

^f *p* value for gender differences in distribution of TSSE by demographic (CMH statistic)

^g *p* value for demographic differences by gender

CMH, Cochran–Mantel–Haenszel

Table 2

Logistic regression analysis of TSSE

Variable	Women OR (95% CI)	Men OR (95% CI)	Overall OR (95% CI)
UNIVARIATE MODELS			
Weight status	<i>p</i> =0.40	<i>p</i> =0.34	<i>p</i> =0.42
Normal or underweight	0.96 (0.53, 1.73)	0.54 (0.21, 1.38)	0.87 (0.51, 1.38)
Overweight	0.78 (0.42, 1.45)	0.61 (0.25, 1.48)	0.70 (0.43, 1.16)
Obese	0.72 (0.38, 1.37)	0.79 (0.31, 1.94)	0.77 (0.46, 1.29)
Morbidly obese	ref	ref	ref
Body satisfaction	<i>p</i> =0.02	<i>p</i> =0.05	<i>p</i> =0.01
Responses of agreement to <i>I like the way my body looks</i>			
Strongly agree	1.89 (1.17, 3.06)	1.23 (0.58, 2.58)	1.57 (1.07, 2.32)
Somewhat agree	1.15 (0.75, 1.78)	0.81 (0.39, 1.69)	1.03 (0.71, 1.48)
Somewhat disagree	1.07 (0.66, 1.74)	0.57 (0.24, 1.38)	0.91 (0.59, 1.39)
Strongly disagree	ref	ref	ref
Availability of a partner	<i>p</i> =0.06	<i>p</i> =0.01	<i>p</i> =0.01
Yes	1.45 (0.98, 2.13)	2.28 (1.22, 4.24)	1.64 (1.19, 2.27)
No	ref	ref	ref
Glasses or contacts	<i>p</i> =0.01	<i>p</i> =0.57	<i>p</i> =0.05
Yes	1.57 (1.16, 2.13)	0.89 (0.59, 1.34)	1.28 (1.00, 1.63)
No	ref	ref	ref
Availability of a wall mirror	<i>p</i> =0.01	<i>p</i> =0.01	<i>p</i> =0.01
Yes	2.41 (1.53, 3.81)	2.27 (1.33, 3.87)	2.37 (1.67, 3.34)
No	ref	ref	ref
Physician's advice	<i>p</i> =0.01	<i>p</i> =0.01	<i>p</i> =0.01
Yes	1.72 (1.29, 2.33)	2.98 (2.06, 4.31)	2.14 (1.70, 2.70)
No	ref	ref	ref
MULTIVARIATE MODELS			
Body satisfaction	<i>p</i> =0.04	<i>p</i> =0.10	<i>p</i> =0.01
Responses of agreement to <i>I like the way my body looks</i>			
Strongly agree	1.78 (1.08, 2.93)	0.87 (0.40, 1.91)	1.42 (0.95, 2.13)
Somewhat agree	1.06 (0.67, 1.66)	0.62 (0.28, 1.35)	0.93 (0.64, 1.37)
Somewhat disagree	1.11 (0.67, 1.83)	0.44 (0.18, 1.12)	0.90 (0.58, 1.40)
Strongly disagree	ref	ref	ref
Availability of a partner	<i>p</i> =0.35	<i>p</i> =0.02	<i>p</i> =0.04
Yes	1.21 (0.81, 1.81)	2.17 (1.14, 4.11)	1.42 (1.02, 1.99)
No	ref	ref	ref
Glasses or contacts	<i>p</i> =0.01	N/A	<i>p</i> =0.22
Yes	1.50 (1.09, 2.06)		1.17 (0.91, 1.51)
No	ref		ref
Availability of a wall mirror	<i>p</i> =0.01	<i>p</i> =0.01	<i>p</i> =0.01
Yes	2.28 (1.43, 3.66)	2.18 (1.25, 3.78)	2.20 (1.54, 3.13)

Variable	Women OR (95% CI)	Men OR (95% CI)	Overall OR (95% CI)
No	ref	ref	ref
Physician's advice	<i>p</i> =0.01	<i>p</i> =0.01	<i>p</i> =0.01
Yes	1.60 (1.18, 2.16)	2.87 (1.97, 4.18)	2.03 (1.61, 2.57)
No	ref	ref	ref

Note: Logistic regression analysis of TSSE with anticipated independent variables by gender and in the total sample: univariate and multivariate models including independent variables associated with TSSE at *p*=0.15 in univariate analyses by gender and in the total sample.