Self-Objectification: Implications for Physical Activity in Middle-Aged Women and Men

Abstract

Self-objectification (i.e., valuing the body primarily for its attractiveness to others) is negatively related to physical health, including physical activity (PA) attitudes and behaviors. Given the low levels of PA among middle-aged adults in the US, self-objectification may be a novel correlate of PA in this population. The present study examined self-objectification and PA variables in a cross-sectional Western U.S. community sample of women (n = 215) and men (n = 134), aged 45-64, including gender as a moderator of these relations. Data were collected via survey, including measures of self-objectification, PA enjoyment, PA perceived benefits and barriers, and self-reported levels of PA. Women and men in our sample did not differ in levels of self-objectification. Results of regression analyses indicated that self-objectification predicted less PA enjoyment. In addition, men higher in self-objectification reported higher levels of PA. Findings implicate self-objectification as a potentially novel determinant of PA attitudes and behaviors in middle-aged adults.

Keywords: Self-objectification, body image, physical activity, health behavior, middle adulthood

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1. Introduction

Objectification theory proposes that women in Western cultures are valued for the attractiveness of their bodies to others (Fredrickson & Roberts, 1997). When women internalize objectification, they see themselves as objects and evaluate their body as it appears to others, termed self-objectification (Fredrickson & Roberts, 1997). A robust body of evidence has found that self-objectification has deleterious consequences on a wide range of outcomes among girls and women, for example, physical and mental health, sexual attitudes and behaviors, and cognition and task performance (for recent reviews on female samples, see Daniels et al., 2020; Roberts et al., 2018). Research has also found that self-objectification is relevant to men (Moradi & Huang, 2008), although there is considerably less research with male samples. Notably, research on self-objectification and physical activity (PA) attitudes and behaviors is scarce, which is puzzling given that there is ample evidence that self-objectification is related to specific body experiences including eating disorder symptomatology, body shame, and reductions in flow experiences (e.g., Moradi & Huang, 2008). The limited existing research on self-objectification and PA indicates that self-objectification predicts women's level of PA, especially among middle-aged women (Greenleaf, 2005). This finding is particularly important because only 15.7% of middle-aged US adults engage in the recommended levels of PA for mental and physical well-being (Bae et al., 2017; National Center for Health Statistics, 2015). It is, therefore, especially important to understand psychological determinants of PA engagement, such as self-objectification, in this segment of the population. Accordingly, the aim of the present study was to examine associations between self-objectification and PA attitudes and behaviors in middle-aged adults.

Self-objectification appears to disrupt the potential perceived benefits of PA by increasing negative bodily-focused attention, such as body monitoring (Greenleaf, 2005). For example, women higher in self-objectification report fewer positive flow experiences (e.g., loss of self-consciousness) during PA and are less likely to participate in PA compared to women lower in self-objectification (Greenleaf, 2005). Other evidence shows that self-objectifying thoughts occur more often during PA than non-PA, especially among women (Wolfe, 1998). Furthermore, self-objectification predicts poorer body esteem by way of appearance-related reasons for exercise (e.g., weight control) in physically active women and men (Prichard & Tiggemann, 2008; Strelan & Hargreaves, 2005; Strelan et al., 2003). Taken together, these patterns indicate that self-objectification may play an important role in PA attitudes and behaviors and more research investigating its role is necessary.

Self-objectification. Most objectification research has been conducted in samples of female college students (Moradi & Huang, 2008), perhaps because self-objectification was theorized to diminish after young adulthood (Fredrickson & Roberts, 1997). Some empirical evidence lends support to this notion (Tiggemann & Lynch, 2001), whereas other work suggests self-objectification remains stable in midlife and older adulthood (Grippo & Hill, 2008). The degree to which older women continue to view their bodies as objects may be related to how strongly they have internalized cultural attitudes that associate beauty with youth or how strongly they endorse ageist beauty ideals (Grippo & Hill, 2008). In general, research on self-objectification in older women is scarce and more research on self-objectification and health attitudes and behaviors in older women is warranted.

Even less research has examined self-objectification in men. Whereas objectification theory was developed to explain women's experiences, subsequent empirical research has found

that men experience self-objectification in response to viewing media images of idealized male bodies (Linder & Daniels, 2018) and when put in an objectifying state such as wearing a speedo (Hebl et al., 2004). A limited body of research has also found negative effects of self-objectification on men's mental health (Calogero, 2009); however, some studies have found null effects (Grabe & Jackson, 2009). In general, research has found that men report lower self-objectification than women; nevertheless, there is evidence that self-objectification is relevant to men (Moradi & Huang, 2008). Furthermore, concerns with appearance and body function may become increasingly relevant for men as they experience age-related changes at midlife (e.g., weight gain, reduced muscularity) (Umstattd et al., 2011), suggesting the need for more research to elucidate the role of self-objectification in men's PA.

1.1 The Present Study

The present study examined associations between self-objectification and PA attitudes and behaviors in middle-aged women and men. No research to our knowledge has examined relations between self-objectification and PA variables in middle-aged men. Consistent with prior evidence that men report less concern with appearance than women (Umstattd et al., 2011), we predicted that women would report higher levels of self-objectification than men (Hypothesis 1). We hypothesized that higher self-objectification would predict less PA enjoyment (Hypothesis 2), fewer perceived benefits of PA (Hypothesis 3), more perceived barriers to PA (Hypothesis 4), and lower levels of PA (Hypothesis 5). We also tested whether gender moderated the relations between self-objectification and PA attitudes and behavior in Hypotheses 2-5. BMI was entered as a control variable because past research has shown that higher BMI is correlated with greater self-objectification (Frederick et al., 2007).

2. Method

2.1 Participants and Procedure

Community-dwelling participants, ages 45-64, (*n* = 204 women; *n* = 137 men) were recruited from jury duty in Colorado (see Table 1 for demographic data). A researcher provided a brief explanation of the study verbally and interested attendees approached the researcher to participate. Other than reading English, there were no exclusion criteria. Participants provided written informed consent and completed a 20-30-minute survey. They were compensated with a candy bar or $5. The study was approved by the first author's Institutional Review Board (IRB #15-103) to ensure that ethical standards were followed.

2.2 Measures

2.2.1 Demographics

Participants self-reported their age, race/ethnicity, gender, education, height, and weight. BMI was calculated using the formula: weight (lb) / [height (in)]^2 x 703.

2.2.2 Self-Objectification

Self-objectification was assessed using the Self-Objectification Questionnaire (Noll & Frederickson, 1998). Participants ranked the importance of 10 physical attributes on a scale from 1 (*most important*) to 10 (*least important*). The scale assesses the extent to which individuals place importance on the body's appearance (e.g., physical attractiveness) versus the body's physical competence (e.g., physical fitness). Both appearance and competence attributes were summed separately. A difference score was calculated by subtracting the competence score from the appearance score. Possible scores range from -25 to +25, with higher scores indicating greater self-objectification.

2.2.3 Physical Activity Attitudes

PA enjoyment was assessed using the Physical Activity Enjoyment Scale (Kendzierski & DeCarlo, 1991). Respondents rated how they feel about their physical activity using a 10-point bipolar rating scale (*n* = 18 items; e.g., 1 = "I feel bored," 10 = "I feel interested"). Possible scores ranged from 18 to 180, with higher scores reflecting greater PA enjoyment (α = .94).

The PA Benefits/Barriers Scale (Sechrist et al., 1987) measured perceived benefits of PA (*n* = 29 items; e.g., "Physical activity decreases feelings of stress and tension for me") and perceived barriers to PA (*n* = 14 items; e.g., "I am too embarrassed to exercise"). Participants endorsed each statement using a 4-point Likert-type response scale (1 = *strongly disagree* to 4 = *strongly agree*); barrier items were reverse scored. Subscale scores were created by summing responses to individual items. Benefits subscale scores range from 29 to 116, with higher scores indicating more positive perceptions of PA (α = .96). Barriers subscale scores range from 14 to 56, with higher scores indicating fewer perceived barriers to PA (α = .86).

2.2.4 Physical Activity

The 9-item short form of the International Physical Activity Questionnaire (Craig et al., 2003) assessed the past week's: 1) vigorous activity, 2) moderate activity, 3) walking, and 4) sitting. Sitting data were not used. The remaining physical activity variables were adjusted according to author guidelines (Craig et al., 2003); namely, responses for activity less than 10 min in duration were changed to zero and activity was truncated at 240 min/day (1680 min/week). Responses were also converted to min/week for each activity category and subsequently converted to min/week of metabolic equivalence of task (MET min/week). MET is a physiological measure of the metabolic cost of physical activities and is calculated as a ratio of energy consumption during activity to the reference metabolic rate (e.g., 1 MET is equivalent to

sitting quietly). MET values were used for each item: vigorous PA = 8.0 METs, moderate PA = 4.0 METs, and walking = 3.0 METs.

3. Results

A power analysis indicated that with the four independent variables and a statistical power level of .80 and an alpha of .05, the sample size was sufficient to detect an effect of .06, which is considered a small effect (Cohen, 1988). All continuous variables except total METs were normally distributed. Removing the top and bottom 5% of cases (Walfish, 2006) resulted in a trimmed MET min/week (M = 2967.22, SD = 2249.24, range 0 – 7902.00, skewness = 1.03). Means, standard deviations, and bivariate correlations are reported in Table 1. There were no significant gender differences on any of the other primary study variables except BMI, $t(339) = -2.72$, $p = .007$.

[INSERT TABLE 1 APPROXIMATELY HERE]

Unexpectedly, women (M = -14.33, SD = 9.96) and men (M = -15.29, SD = 9.17) did not differ in levels of self-objectification, $t(339) = .90$, $p = .370$. Therefore, Hypothesis 1 was not supported.

[INSERT TABLE 2 APPROXIMATELY HERE]

Hierarchical regression analyses were conducted to test the relationships between gender, self-objectification, and the outcome variables (i.e., enjoyment, benefits, barriers, and levels of PA) (Hypotheses 2-5). For each regression, BMI was entered in Step 1 as a control variable, gender (dummy coded women = 0, men = 1) was entered in Step 2, followed by self-objectification in Step 3, and a gender × self-objectification interaction term in Step 4. The results for each regression model are shown in Table 2.

For PA enjoyment, the overall model accounted for 7.3% of variance, $F(4,325) = 6.44$, $p < .001$, $f^2 = .07$. At the first step, BMI accounted for a small ($f^2 = .06$) but significant 5.9% of the variance. At the second step, gender did not account for a significant amount of the variance. At the third step, self-objectification accounted for a small ($f^2 = .07$) but significant additional 1% of variance. At the fourth step, the gender x self-objectification interaction did not account for any significant variance. Thus, Hypothesis 2 was supported.

For perceived benefits of PA, the overall model accounted for 3% of variance, $F(4,326) = 2.73$, $p = .03$, $f^2 = .03$. At the first step, BMI accounted for a small ($f^2 = .02$) but significant 1.9% of the variance. At the next steps of the model, gender, self-objectification, and the gender x self-objectification interaction did not account for significant additional variance. However, the interaction term approached significance ($p = .08$). Therefore, Hypothesis 3 was not supported; however, there was a trend indicating self-objectification may predict benefits of PA differently for women and men. Specifically, higher self-objectification in women was associated with *fewer* perceived benefits to exercise, whereas higher self-objectification in men was associated with *more* perceived benefits to exercise.

For perceived barriers to PA, the overall model accounted for 7.2% of variance, $F(4,326) = 6.349$, $p < .001$, $f^2 = .07$. At the first step, BMI accounted for a small ($f^2 = .06$) but significant 6.3% of the variance. At the next steps of the model, gender, self-objectification, and the gender x self-objectification interaction did not account for significant additional variance. However, self-objectification approached significance ($p = .07$). Thus, Hypothesis 4 was not supported; however, there was a trend indicating that self-objectification may predict barriers to PA.

Finally, for levels of PA, the overall model accounted 7.4% of variance, $F(4,276) = 4.38$, $p = .002$, $f^2 = .07$. At the first step, BMI accounted for 2.8% of the variance. At the next steps of

the model, gender and self-objectification did not account for significant additional variance. At the fourth step, the gender x self-objectification interaction accounted for an additional small (f^2 = .06) but significant 2.4% of the variance. To visualize this significant interaction, a simple slopes analysis was conducted (see Fig. 1). Among men, higher self-objectification was related to higher levels of PA (p = .013). In contrast, among women, higher self-objectification appeared to be associated with lower levels of PA, but this relation was not statistically significant (p = .593). Therefore, Hypothesis 5 was supported for men only.

[INSERT Figure 1 APPROXIMATELY HERE]

4. Discussion

Given the importance of PA as a key health determinant, particularly among sedentary middle-aged adults, we investigated the possibility of self-objectification as a novel predictor of PA attitudes and behaviors in this age group. To our knowledge, this is the first study to examine the relations between self-objectification and PA in a middle-aged sample of women *and* men. Contrary to our expectation, we found no gender difference in self-objectification. Both groups reported relatively low levels of self-objectification, although our sample reported almost the full range of possible scores. Women reported similar levels of self-objectification as in prior research with adult women of similar ages (M = -14.33, SD = 10.00 compared to M = -13.00, SD = 9.87 in women, ages 50-59; Tiggemann & Lynch, 2001). However, relative comparisons of self-objectification scores should be interpreted with caution as population-level norms do not currently exist. No research to our knowledge has investigated self-objectification in middle-aged men. Therefore, it is unknown if the levels of self-objectification found with men in this sample (M = -15.29, SD = 9.17) are typical of middle-aged men or not.

In general, we found some support for the role of self-objectification in PA attitudes in middle-aged adults. As expected, self-objectification predicted less PA enjoyment, regardless of gender. These findings are consistent with prior research indicating that self-objectification has consequences for attitudes toward exercise in women (Greenleaf, 2005; Prichard & Tiggemann, 2008); our findings are the first to demonstrate self-objectification may also impact a specific attitude toward exercise (i.e., enjoyment) in middle-aged men. Although the exact mechanism of the relation is unknown, it is possible that both women and men higher in self-objectification may focus their attention on their appearance during PA, resulting in less satisfaction and positive experiences from PA.

There were also trends suggesting possible relations between self-objectification and perceived benefits and barriers to PA. In the benefits model, there was a trend toward gender as a moderator, such that women higher in self-objectification perceived fewer benefits from exercise (e.g., improvements to physical functioning, stamina), whereas men higher in self-objectification perceived greater benefits from exercise. Additionally, self-objectification approached significance as a predictor of greater perceived barriers to PA. Taken together, these patterns suggest potential areas for clinical intervention with middle-aged adults, such as physical activity programs that emphasize the health and functionality outcomes of exercise (e.g., increased strength) over appearance outcomes (O'Hara et al.,2014; Prichard & Tiggemann, 2008).

Interestingly, self-objectification was a clearer predictor of PA behavior. Specifically, it was a significant positive predictor of men's (only) PA behavior, such that men higher self-objectification were likely to report more PA than their counterparts lower self-objectification. This finding suggests that self-objectification may serve as motivation for PA in middle-aged men but not women, which is consistent with patterns showing that boys and young men are

more likely to participate in vigorous exercise and are less likely to diet compared to girls and young women (Lowry et al., 2000; Neumark-Sztainer et al., 2011). Given that most prior studies on self-objectification have sampled younger men (Calogero, 2009; Strelan & Hargreaves, 2005), the relevance of self-objectification to middle-aged men, including understanding their body concerns and PA attitudes and behaviors as they experience age-related changes to appearance and body functionality, requires further examination.

Finally, it is noteworthy that BMI explained a significant amount of variance in all of the outcome variables. Heavier weight may limit PA enjoyment and engagement if it contributes to pain, discomfort, or embarrassment while attempting exercise. Furthermore, self-perception of overweight may be related to social rejection concerns, internalized weight stigma, and worse physical health outcomes (Robinson et al., 2020). Whereas BMI is relevant to the outcomes of interest in the present study, we sought to establish the relative contribution of self-objectification to PA attitudes and behaviors as a novel target for understanding PA engagement and guiding interventions.

4.1 Limitations and Future Directions

Limitations of this study should be acknowledged. First, these findings rely on self-reported data. Although the International Physical Activity Questionnaire is heralded as a low-burden and cost-effective way of collecting PA data (Craig et al., 2003), such data may be subject to recall inaccuracies. Thus, we recommend actigraphy as an objective measure of PA in future research. Findings may not be generalizable to other groups, as our sample was recruited from a restricted geographical region and were largely White with some college education. We recommend that future studies include a greater diversity of participants to understand differences in health attitudes and behavior related to self-objectification in varied demographic

groups. Finally, our cross-sectional design does not allow for claims regarding the causal ordering of variables. Based on existing research, we hypothesized that self-objectification would predict PA attitudes and behaviors. However, it is possible that individuals' PA attitudes and behaviors predict self-objectification or are all predicted by extraneous variables. Given that most objectification research focuses on younger women, much is unknown about how self-objectification may change throughout the aging process. Longitudinal data are necessary to assess changes in self-objectification over the lifespan.

4.2. Conclusion

In sum, the present study offers an initial examination of self-objectification and PA attitudes and behavior in middle-aged women and men, extending earlier work limited to younger or all female samples. Findings demonstrated that self-objectification may have consequences for PA in middle-aged adults. Given well established health benefits of PA at midlife, these findings warrant further investigation of how self-objectification may relate to PA attitudes and behaviors across the lifespan.

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Table 1.
Score ranges, means (M), standard deviations (SD), and bivariate correlations for all study variables.

Variables	Score ranges or %	Women *M* (*SD*) or %	Men *M* (*SD*) or %	1.	2.	3.	4.	5.	6.	7.	8	9.
1. Age (years)	45-64	54.63 (5.59)	55.11 (5.85)	–	.10	-.00	.09	-.24**	-.16*	-.02	.12	-.02
2. Race (% White) [a]		85.4	83.2	.11	–	.11	-.10	-.04	-.01	-.10	-.05	.03
3. Education (years)	10-24	15.63 (2.63)	16.50 (2.78)	-.01	.14	–	-.24**	.19**	.15*	.14*	.16*	.04
4. BMI	17-44	25.80 (5.20)	27.45 (4.15)	.06	-.15	.00	–	.13	-.34**	-.25**	-.37**	-.28**
5. Self-objectification	-25-21	-14.33 (10.0)	-15.28 (9.17)	-.21*	-.10	.00	.12	–	-.19**	-.15*	-.15*	-.11
6. Enjoyment	52-180	139.77 (32.10)	138.26 (32.21)	.03	-.01	.06	-.11	-.05	–	.54**	.56**	.37**
7. Benefits	42-116	97.71 (12.75)	96.99 (12.23)	.03	-.05	.08	-.12	.06	.39*	–	.52**	.36**
8. Barriers	15-56	44.72 (6.67)	44.60 (5.41)	.20*	-.01	.20*	-.09	-.11	.42**	.40**	–	.27**
9. METs\week	0-9702.00	2915.80 (2359.10)	3082.04 (363.30)	-.10	-.10	-.05	.13	.25**	.14	.26**	.10	–

***Note*.** Women are presented above the diagonal in correlation table.
* $p < .05$
** $p < .01$
[a] Spearman rho correlation.

Table 2. Results of hierarchical regression analyses showing amount of variance accounted for in outcome variables by BMI, gender, self-objectification, and the interaction term.

Outcome measures	b (SE)	β	R^2	ΔR^2	*p*
Enjoyment					
Step 1: BMI	-1.60(.35)	-.24	.059	-	< .001
Step 2: Gender	1.50(3.54)	.02	.059	-	.675
Step 3: Self-objectification	-.36(.18)	-.11	.07	.01	.049
Step 4: Gender x Self-objectification	.38(.37)	.18	.073	.003	.31
Benefits					
Step 1: BMI	-.35(.14)	-.14	.02	-	.01
Step 2: Gender	-.02(1.41)	-.001	.02	.000	.99
Step 3: Self-objectification	-.09(.07)	-.07	.02	.004	.22
Step 4: Gender x Self-objectification	.26(.15)	.32	.03	.009	.08
Barriers					
Step 1: BMI	-.31(.07)	-.25	.063	-	<.001
Step 2: Gender	.24(67)	.02	.063	.000	.73
Step 3: Self-objectification	-.06(.03)	-.10	.072	.009	.07
Step 4: Gender x Self-objectification	.01(.07)	.02	.072	.000	.894
Physical Activity METS					
Step 1: BMI	-79.23(28.02)	-.17	.028	-	.005
Step 2: Gender	349.60(282.88)	.08	.034	.005	.218
Step 3: Self-objectification	13.34(14.27)	.08	.037	.003	.351
Step 4: Gender x Self-objectification	76(29.30)	.51	.061	.024	.009

Note. b = unstandardized regression coefficient, β = standardized regression coefficient, SE = standard error

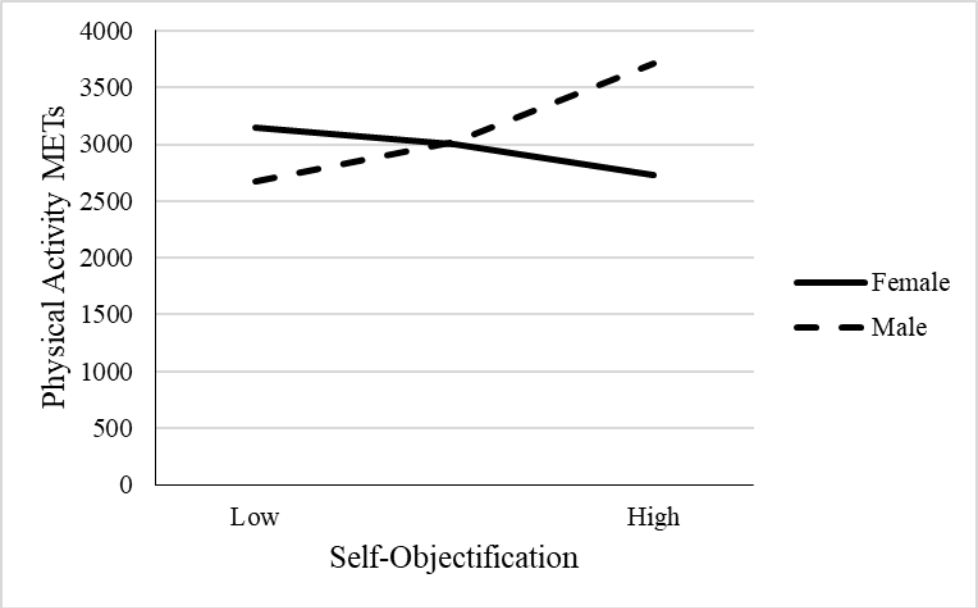

Fig. 1. Physical activity at low vs. high levels of self-objectification for men vs. women.