



Published in final edited form as:

Body Image. 2015 January ; 0: 73–77. doi:10.1016/j.bodyim.2014.10.002.

Body Dissatisfaction and Condom Use Self-Efficacy: A Meta-Analysis

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Abstract

The consistent use of condoms is the most effective behavior for reducing the acquisition of sexually transmitted infections (STIs), and condom use self-efficacy has been shown to be a key construct related to condom use. However, the examination of modifiable psychosocial and behavioral correlates of condom use self-efficacy is lacking. Recent investigations have highlighted the association of body dissatisfaction with condom use self-efficacy, and the current study conducted a meta-analysis on all available data addressing this relationship. Eleven individual effect-size parameters from nine studies yielded a total sample of 2,495 men and women participants. A random-effects model revealed an average effect-size of $r = -0.25$, Cohen's $d = -0.52$, which is moderate in strength. As body dissatisfaction increases, ones' self-efficacy regarding the use of condoms diminishes. Integrating interventions to decrease body dissatisfaction and sexual risk behaviors may prove to be an effective strategy to decrease STIs.

Keywords

Body image; Body dissatisfaction; Condom use self-efficacy; Meta-analysis; Sexual risk behaviors

Body Dissatisfaction and Condom Use Self-Efficacy: A Meta-Analysis Safer sexual practices, such as consistent condom use, are important preventative measures against the spread and transmission of sexually transmitted infections (STIs), yet less than half of U.S. adults use condoms during sex with non-regular partners (e.g., Anderson, 2003). There is ongoing evidence that efforts to promote consistent condom use in the U.S. are needed, in that the rates of new HIV infections have not decreased in the past decade (CDC, 2013), and that the prevalence of STIs is estimated at 110 million in the U.S., with roughly 20 million new infections per year (Satterwhite et al., 2013). Accordingly, studies examining psychosocial and behavioral variables that can be modified and reduce HIV and STI

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acquisition are still needed, as traditional efforts are not achieving their goals (e.g., Crepaz et al., 2006; Herbst et al., 2007).

Use of condoms operates in conjunction with psychosocial variables. *Condom use self-efficacy*, defined as confidence in one's ability to practice safer sex in difficult situations, is one variable that has been featured prominently in many models of health behaviors, such as social cognitive theory (Bandura, 1994). This theory, applied to safer sex behaviors, proposes that individuals engage in a process of evaluating the relative advantages and disadvantages of using condoms during sex (e.g., social norms of condom use, knowledge about STIs, and expectancies regarding condom use). These cognitive processes subsequently predict one's level of self-efficacy. Self-efficacy then becomes the salient variable in terms of whether an individual engages in unprotected vs. safer sex practices. Empirically, self-efficacy has been strongly related to actual use of condoms among a variety of populations (e.g., Baele, Dusseldorp, & Maes, 2001; Wulfert, Safren, Brown, & Wan, 1999; Wulfert & Wan, 1993; Wulfert, Wan, & Backus, 1996), and meta-analytic data have revealed medium-sized effects with actual condom use for both cross-sectional and longitudinal studies (Sheeran, Abraham, & Orbell, 1999). One study compared social cognitive theory, with self-efficacy, to the two other most frequently used theories related to condom use, the health belief model and theory of reasoned action (Wulfert et al., 1996). Results indicated that self-efficacy explained variance in condom use above and beyond that accounted for by the other two models, highlighting its value in promoting safer sex behaviors.

Although condom use self-efficacy has been established as a salient predictor of condom use, proposed psychosocial variables that might contribute to condom use self-efficacy have been limited. One construct that has recently received increased attention in this area is body dissatisfaction. *Body dissatisfaction* may be defined as possessing negative evaluation about one's body or appearance (Cash, 2002). Theoretically, it has been argued that elevated body dissatisfaction may be associated with lowered condom use self-efficacy. Individuals who have concerns regarding their appearance report heightened worry about receiving negative evaluations from others (e.g., Cash, Thériault, & Annis, 2004). In the context of sexual behaviors, where exposed bodies are central, engaging in discussions regarding condom use may lead individuals with body dissatisfaction to experience increased anxiety, perhaps concerned that this negotiation with sexual partners will lead to rejection. Thus, individuals with elevated body dissatisfaction may lack assertiveness in broaching the use of condoms, and may be less likely to initiate conversation around safer sex practices.

Empirically, a number of studies have found significant relationships between body dissatisfaction and lowered condom use self-efficacy. Most of these studies sampled adolescent or young adult women (i.e., Gillen, Lefkowitz, & Shearer, 2006; Salazar et al., 2004; Schooler, Ward, Merriwether, & Caruthers, 2005; Swenson, 2007; Van Anders, 2013; Watson, Matheny, Gagne, Brack, & Ancis, 2013; Weaver & Byers, 2006; Yamamiya, Cash, & Thompson, 2006). Comparably fewer studies have assessed these relationships among men (for exceptions, see Blashill, Goshe, Mayer, Robbins, & Safren, 2014; Gillen et al. 2006; Van Anders, 2013). Of those, Blashill et al. (2014) sampled men who have sex with men (MSM) living with HIV, and found a medium-sized effect between body dissatisfaction

and lower condom use self-efficacy. The limited studies on heterosexual men have revealed conflicting results, with Gillen et al. (2006) finding a null result, and others noting a significant medium-sized effect (Schooler & Ward, 2006; Van Anders, 2013). Thus, it would seem that the relationship between body dissatisfaction and condom use self-efficacy has been less consistently studied among men as compared to women.

To date, there has been limited empirical examination of psychosocial predictors of condom use self-efficacy, the key predictive variable in social cognitive theory. Body dissatisfaction is prevalent among men and women (24%-32% for men and 35%-38% for women; Peplau et al., 2009), and emerging data have begun to reveal significant associations with condom use self-efficacy. However, to our knowledge, there have been no attempts to integrate the data on this topic to yield a summary of the significance and size of the effect of body dissatisfaction on condom use self-efficacy. Thus, the aim of this study was to conduct a meta-analysis on all available, published and unpublished, data on body dissatisfaction and condom use self-efficacy among men and women. It was hypothesized that a significant inverse relationship would be revealed between body dissatisfaction and condom-use self-efficacy. Although there are limited data to guide directional hypotheses, a preliminary moderation analysis was also conducted, examining the differential effect of participant sex on body dissatisfaction and condom use self-efficacy.

Method

Data Collection

Multiple strategies were utilized to locate potential studies for the meta-analysis. First, computer-based searches were conducted via Google Scholar, PsycINFO, and Medline, using the following keywords: *condom use*, *condom use self-efficacy*, *self-efficacy*, *sexual risk*, *sexual risk behaviors*, *body image*, *body image disturbance*, *body dissatisfaction*, *body esteem*, *body attitudes*, *weight concerns*, and *shape concerns*. Second, the references of selected articles were examined for additional studies that may have been germane to the current meta-analysis. Third, messages were sent to several listserves relevant to the current study (e.g., the International Academy of Sex Research; Association for Behavioral and Cognitive Therapies), soliciting unpublished or in print data (including theses and dissertations). Last, individual researchers were contacted who had previously published work in this area, soliciting unpublished or in print data.

Selection of Studies

Inclusion of primary studies was not restricted by country; however, articles were required to be written in English. Age, sex, sexual orientation, HIV status, race/ethnicity of participants, as well as year of publication were not restricted. Studies were restricted to those that included measures of body satisfaction or dissatisfaction, and measures of condom use self-efficacy. Across the studies, a variety of measures were used to assess body dissatisfaction and condom use self-efficacy (see Table 1).

For a study to be included in the meta-analysis, the authors needed to report a statistical parameter estimate between the variables of interest. In a number of studies, correlation

coefficients (or other appropriate data for effect size conversion) were not published. In these cases, the primary author was contacted and the appropriate data were requested.

To establish independence (i.e., statistical assumptions require that data points are not dependent upon one another—two or more effect-size parameters between the same two variables from the same sample, Lipsey & Wilson, 2001), only one effect-size estimate was reported per construct if there were multiple effect-size parameters listed within a given study. To do this, parameters were chosen based on the variable with the highest alpha coefficient reported in the original study. In sum, nine studies were identified as including measurement of condom use self-efficacy and body dissatisfaction in addition to providing appropriate statistics that could be aggregated or transformed into an effect-size statistic. Two studies included associations between condom use self-efficacy and body dissatisfaction separately for men and women, thus, 11 effect-size parameters were included in this meta-analysis, corresponding to 2,495 participants ($n = 2,171$ women, $n = 324$ men).

Coding of Studies

The first author and a trained research assistant independently coded all studies for effect-size estimates, sample size, and inverse variance. Interclass correlations were computed across all primary studies on these three variables. Results indicated satisfactory agreement between the raters (range = .94 to .97). In the few instances where discrepancies were noted, the two raters met and came to a mutual agreement, resulting in interclass correlations of 1.00 for each of the three variables.

Data Analysis

Initially, data were analyzed using a random-effects model (Lipsey & Wilson, 2001). Random-effects models assume that each individual effect-size parameter varies from the population mean by both subject-level sampling error, and a value reflecting variance that is randomly distributed. If significant heterogeneity was noted about the effect-size estimate, then moderation analyses may be conducted. Mixed-effects models (a type of random-effects model), assume that the impact of moderator variables (e.g., participant sex) are systematic, yet there remains unmeasured random-effects in the distribution of effect-size estimates in combination with sampling error. In other words, mixed-effects models assume that variability in the distribution of effect-size estimates is due to between-study differences and participant-level sampling error as well as an additional random component. However, mixed-effects models typically have low statistical power (Lipsey & Wilson, 2001), which may be a particular concern given the few number of primary studies that sampled men. Thus, a sensitivity analysis was also conducted via a fixed-effects model with participant sex entered as a moderator. Fixed-effects models have greater statistical power to detect moderator effects, yet also have an increased risk of Type I errors. All correlation coefficients were transformed via Fisher's z tests with inverse variance weights used to weight each effect-size parameter (i.e., the average weighted effect-size approach). It should also be noted that Fisher's z transformations were converted back to r for all reported effect-size parameters and confidence intervals. The interpretation of the effect-size estimate (r) was 0.10 for a small effect, between 0.11 and 0.39 for a medium effect, and 0.40 for a large effect (Lipsey & Wilson, 2001). As an additional metric of effect-size, Cohen's d was

also computed, and is interpreted as 0.20 to 0.30 (small), 0.50 (medium), and 0.80 or greater (large; Cohen, 1988). Finally, to quantify the degree to which the “file-drawer problem” may impact the findings, a weighted random-effects fail-safe calculation was conducted (Rosenberg, 2005).

Results

Eleven effect-size parameters were included in the analysis of the relationship between condom use self-efficacy and body dissatisfaction, resulting in a total sample size of 2,495. A random-effects model was used to calculate the average effect-size estimate and confidence interval (95%). Results revealed a medium effect-size parameter, which was significantly different from zero, $r = -0.25$, 95% CI: $-0.31, -0.18$, $z = -7.30$, $p < .001$, Cohen’s $d = -0.52$; however, significant heterogeneity was found, $Q = 26.8$, $p = .003$.

Given the significant heterogeneity noted, probing for moderator variables is justified. Specifically, we were interested in the moderating role of participant sex. Results from the mixed-effects model revealed that when including participant sex in the model, nonsignificant between-subjects, $Q_{Between} = 2.5$, $p = .11$, and within-subjects heterogeneity $Q_{Within} = 11.0$, $p = .27$, were revealed. This finding suggests that participant sex does not moderate the relationship between body dissatisfaction and condom use self-efficacy. When conducting a fixed-effects model, results revealed significant between-subjects, $Q_{Between} = 4.9$, $p = .02$, and within-subjects heterogeneity, $Q_{Within} = 21.9$, $p = .008$. Findings from the fixed-effects model suggest that participant sex explained a significant amount of variance in the effect-size estimate, and even after accounting for sex, there was significant variance about the effect-size parameter left unexplained. Given the significant effect of sex, it may be prudent to examine the effect of body dissatisfaction and condom use self-efficacy separately for men and women.

For men, a mean effect of $r = -0.12$, 95% CI: $-0.23, -0.01$, $z = -2.20$, $p = .03$, Cohen’s $d = -0.24$, was revealed. For women, a mean effect of $r = -0.25$, 95% CI: $-0.29, -0.21$, $z = -12.30$, $p < .001$, Cohen’s $d = -0.52$, was revealed. Lastly, a random-effects weighted fail-safe calculation revealed that 69 additional nonsignificant primary studies would need to be included in the meta-analysis to bring the mean effect of -0.25 to a nonsignificant ($p > .05$) level.

Discussion

The aim of the current study was to assess the relationship between body dissatisfaction and condom use self-efficacy amongst all available published and unpublished studies on this topic. Results from a random-effects model yielded a medium-size parameter, which was significantly different from zero. This was the first known study to empirically aggregate the data on the association of body dissatisfaction and condom use self-efficacy. The results from the current study highlight the consistent association between body dissatisfaction and condom use self-efficacy.

Identifying the mechanism(s) that drive the relationship between body dissatisfaction and condom use self-efficacy requires further research. It is possible that fear of rejection or

abandonment, increased depressive symptoms, and substance-induced intoxication may prove to be pathways from body dissatisfaction to condom use self-efficacy. Additionally, as discussed above, a sexual act, where exposure of one's body is typically present, may be a situation where concerns about one's body would be of heightened salience, and hence, for those not satisfied or embarrassed about some aspect of their appearance, condom use self-efficacy may be low. Also, perhaps individuals with elevated body dissatisfaction, who dislike their bodies, have less motivation or desire to protect it (e.g., Blashill, Williams, Grogan, & Clark-Carter, in press; Wood-Barcalow, Tylka, & Augustus-Horvath, 2010). Thus, it would be worthy to examine condom use self-efficacy with body appreciation, as body appreciation contains an element of body protection. However, to date, explanatory models are lacking.

There are likely also moderating variables that influence the magnitude of the relationship of body dissatisfaction and condom use self-efficacy. Participant sex was one potential moderating variable tested in the meta-analysis. Findings revealed conflicting results. When a more conservative mixed-effects model was employed, participant sex did not account for a significant amount of variation in the relationship. However, the more liberal fixed-effects model revealed that participant sex did moderate the relationship, in that the effect of body dissatisfaction on condom use self-efficacy was stronger for women than it was for men. It is important to note that fixed-effect models may be more powerful to detect significant effects compared to mixed-effects models; however, they also possess greater Type I error. This fact, combined with only a few primary studies that included men, suggests that our finding of sex as a moderator should be viewed cautiously.

There are likely additional unaccounted moderator variables explaining variation in the parameter estimate. As mentioned above, the fixed-effects model found a significant interaction with participant sex. However, it may not be participant sex, but rather, sexual positioning (or a sex by sexual orientation effect) driving this effect, given that the only study conducted with MSM revealed a medium-sized effect (Blashill et al., 2014). Thus, it is possible that individuals who engage in receptive sexual positioning (e.g., heterosexual women and some MSM) may display a stronger relationship between body dissatisfaction and condom use self-efficacy than those who engage in insertive positioning. This follows, as receptive partners must establish a dialogue, and subsequently receive consent of their insertive partners for condoms to be used during sex, whereas an insertive partner largely is autonomous to make a decision to utilize condoms, if desired. Consequently, condom use self-efficacy may be less relevant for those who are dissatisfied with their bodies and are insertive partners, as their beliefs about potentially being rejected by a partner are not likely activated given their ability to use condoms independent of their sexual partners.

Also worth noting is the operationalization of body dissatisfaction and condom use self-efficacy in the current study. There was quite a variety of assessment measures used in the primary studies, with little overlap in instruments. The diversity of these measures may have contributed to the heterogeneity noted about the effect-size estimate; however, many of these measures do correlate strongly with each other. Additionally, the vast majority of studies included measures of body dissatisfaction, in lieu of body image disturbance. There is a subtle, yet important distinction between these terms. Body image disturbance includes

dissatisfaction with one's appearance, while also including psychological distress and impairment in social relations, activities, or occupation (Cash, Phillips, Santos, & Hrabosky, 2004; Thompson, Altabe, Heinberg, & Tantleff-Dunn, 1999). It is possible that the relationship between body image disturbance and condom use self-efficacy would have revealed a stronger association than that found in the current study, given the inherently increased pathology noted with this construct. However, future research is needed to test this particular hypothesis.

The current study is not without limitations. Only cross-sectional relationships were assessed (as no longitudinal research has examined these variables over time), thus, temporal prediction cannot be established. However, theoretically, it is perhaps difficult to posit that low condom use self-efficacy would predict increased body dissatisfaction. Future prospective studies are needed to parcel out a potential bidirectional relationship. As mentioned above, primary studies overwhelmingly sampled women, and more information is needed regarding this association among men, across diverse sexual orientations.

The current study may also inform clinical practice. Traditional behavioral interventions that focus on HIV risk reduction counseling, typically yield modest effects (see Crepaz et al. 2006; Herbst et al., 2007). One explanation of the limited effects these interventions impart is the lack of integrating psychosocial problems into sexual risk reduction. Given that a variety of psychosocial problems (e.g., DiClemente et al., 2001; Lehrer, Shrier, Gortmaker, & Buka, 2006; Mustanski, Garofalo, Herrick, & Donenberg, 2007; Stall et al., 2003) predict inconsistent condom use, it follows that interventions may need to explicitly address these concerns in the context of promoting safer sex behaviors (see Safren, Blashill, & O' Cleirigh, 2011 for a commentary). The results of the current study highlight body dissatisfaction as being yet another psychosocial problem that appears to be relevant for sexual health.

Although the current study did not assess actual condom use, the proxy measure, condom use self-efficacy, figures prominently in social cognitive models of condom use behaviors, and empirically is closely linked to actual condom use. Thus, it seems likely that addressing body dissatisfaction in concert with traditional sexual risk reduction counseling, particularly highlighting the function of self-efficacy, may prove to be an effective approach. However, to date, there are no known interventions that have applied this methodology. Our group is currently developing and testing an integrated individual-based cognitive behavioral intervention for self-care behaviors (including sexual risk reduction) and body image disturbance among MSM living with HIV, modeled on existing CBT body image interventions (e.g., Cash, 2008). Additional efforts developing integrated interventions are needed among varied populations, including women and men who are HIV-uninfected. Perhaps this could include integrating brief sexual risk reduction into established group-based programs that aim to reduce internalization of appearance ideals, such as the Body Project (Stice, Marti, Spoor, Presnell, & Shaw, 2008).

Acknowledgements

Research reported in this publication was supported by the National Institute of Mental Health of the National Institutes of Health under award numbers K23MH096647, to Aaron Blashill, and K24MH094214, to Steven Safren.

References

*denotes primary study included in the meta-analysis.

- Anderson JE. Condom use and HIV risk among US adults. *American Journal of Public Health*. 2003; 93:912–914. doi: 10.2105/AJPH.93.6.912. [PubMed: 12773352]
- Baele J, Dusseldorp E, Maes S. Condom use self-efficacy: Effect on intended and actual condom use in adolescents. *Journal of Adolescent Health*. 2001; 28:421–431. doi: 10.1016/S1054-139X(00)00215-9. [PubMed: 11336873]
- Bandura, A. Self-efficacy. In: Ramachandran, VS., editor. *Encyclopedia of human behavior*. Vol. 4. Academic Press; New York: 1994. p. 71-81.
- Blashill AJ, Goshe BM, Robbins G, Mayer KH, Safren SA. Body image disturbance and health behaviors among sexual minority men living with HIV. *Health Psychology*. 2014; 33:677–680. *. doi: 10.1037/hea0000081. [PubMed: 24977311]
- Blashill AJ, Williams A, Grogan S, Clark-Carter D. Negative appearance evaluation is associated with skin cancer risk behaviors among American men and women. *Health Psychology*. in press. doi: 10.1037/hea0000100.
- Cash, TF. *The body image workbook*. 2nd. New Harbinger Publications; Oakland, CA: 2008.
- Cash, TF. A “negative body image:” Evaluating epidemiological evidence. In: Cash, TF.; Pruzinsky, T., editors. *Body image: A handbook of theory, research, and clinical practice*. Guilford Press; New York: 2002. p. 269-276.
- Cash TF, Phillips KA, Santos MT, Hrabosky JI. Measuring “negative body image”: Validation of the Body Image Disturbance Questionnaire in a non-clinical population. *Body Image*. 2004; 1:363–372. doi: 10.1016/j.bodyim.2004.10.001.
- Cash TF, Thériault J, Annis NM. Body image in an interpersonal context: Adult attachment, fear of intimacy and social anxiety. *Journal of Social and Clinical Psychology*. 2004; 23:89–103. doi: 10.1521/jscp.23.1.89.26987.
- CDC. HIV Surveillance Report. 2013; 2011; 23 <http://www.cdc.gov/hiv/topics/surveillance/resources/reports/>. Accessed May 23, 2013.
- Cohen, J. *Statistical power analysis for the behavioral sciences*. 2nd. Erlbaum; Hillsdale, NJ: 1988.
- Crepaz N, Lyles CM, Wolitski RJ, Passin WF, Rama SM, Herbst JH, Stall R. Do prevention interventions reduce HIV risk behaviours among people living with HIV? A meta-analytic review of controlled trials. *AIDS*. 2006; 20:143–157. doi: 10.1097/01.aids.0000196166.48518.a0. [PubMed: 16511407]
- DiClemente RJ, Wingood GM, Crosby RA, Sionean C, Brown LK, Rothbaum B, Davies S. A prospective study of psychological distress and sexual risk behavior among black adolescent females. *Pediatrics*. 2001; 108:e85. doi: 10.1542/peds.108.5.e85. [PubMed: 11694669]
- Gillen MM, Lefkowitz ES, Shearer CL. Does body image play a role in risky sexual behavior and attitudes? *Journal of Youth and Adolescence*. 2006; 35:243–255. *. doi: 10.1007/s10964-005-9005-6.
- Herbst JH, Beeker C, Mathew A, McNally T, Passin WF, Kay LS, Johnson RL. The effectiveness of individual, group, and community-level HIV behavioral risk-reduction interventions for adult men who have sex with men: A systematic review. *American Journal of Preventative Medicine*. 2007; 32:S38–67. doi: 10.1016/j.amepre.2006.12.006.
- Lehrer JA, Shrier LA, Gortmaker S, Buka S. Depressive symptoms as a longitudinal predictor of sexual risk behaviors among US middle and high school students. *Pediatrics*. 2006; 118:189–200. doi: 10.1542/peds.2005-1320. [PubMed: 16818565]
- Lipsey, MW.; Wilson, DB. *Practical meta-analysis*. Sage; Thousand Oaks, CA: 2001.
- Mustanski B, Garofalo R, Herrick A, Donenberg G. Psychosocial health problems increase risk for HIV among urban young men who have sex with men: Preliminary evidence of a syndemic in need of attention. *Annals of Behavioral Medicine*. 2007; 34:37–45. doi: 10.1080/08836610701495268. [PubMed: 17688395]

- Peplau LA, Frederick DA, Yee C, Maisel N, Lever J, Ghavami N. Body image satisfaction in heterosexual, gay, and lesbian adults. *Archives of Sexual Behavior*. 2009; 38:713–725. doi: 10.1007/s10508-008-9378-1. [PubMed: 18712469]
- Rosenberg MS. The file-drawer problem revisited: A general weighted method for calculating fail-safe numbers in meta-analysis. *Evolution*. 2005; 59:464–468. doi: 10.1111/j.0014-3820.2005.tb01004.x. [PubMed: 15807430]
- Safren SA, Blashill AJ, O’Cleirigh C. Promoting the sexual health of MSM in the context of comorbid mental health problems. *AIDS & Behavior*. 2011; 15:30–34. doi: 10.1007/s10461-011-9898-x. [PubMed: 20652630]
- Salazar LF, DiClemente RJ, Wingood GM, Crosby RA, Harrington K, Davies S, Oh MK. Self-concept and adolescents' refusal of unprotected sex: A test of mediating mechanisms among African American girls. *Prevention Science*. 2004; 5:137–149. *. doi: 10.1023/B:PREV.0000037638.20810.01. [PubMed: 15470935]
- Satterwhite CL, Torrone E, Meites E, Dunne EF, Mahajan R, Ocfemia MC, Weinstock H. Sexually transmitted infections among US women and men: Prevalence and incidence estimates, 2008. *Sexually Transmitted Diseases*. 2013; 40:187–193. doi: 10.1097/OLQ.0b013e318286bb53. [PubMed: 23403598]
- Schooler D, Ward LM. Average joes: Men’s relationships with media, real bodies, and sexuality. *Psychology of Men and Masculinity*. 2006; 7:27–41. doi: 10.1037/1524-9220.7.1.27.
- Schooler D, Ward LM, Merriwether A, Caruthers AS. Cycles of shame: Menstrual shame, body shame, and sexual decision-making. *Journal of Sex Research*. 2005; 42:324–334. *. doi: 10.1080/00224490509552288. [PubMed: 19827237]
- Sheeran P, Abraham C, Orbell S. Psychosocial correlates of heterosexual condom use: A meta-analysis. *Psychological Bulletin*. 1999; 125:90–132. doi: 10.1037/0033-2909.125.1.90. [PubMed: 9990846]
- Stall R, Mills T, Williamson J, Hart T, Greenwood G, Paul J, Catania J. Association of co-occurring psychosocial health problems and increased vulnerability to HIV/AIDS among urban men who have sex with men. *American Journal of Public Health*. 2003; 93:939–942. doi: 10.2105/AJPH.93.6.939. [PubMed: 12773359]
- Stice E, Marti CN, Spoor S, Presnell K, Shaw H. Dissonance and healthy weight eating disorder prevention programs: Long-term effects from a randomized efficacy trial. *Journal of Consulting and Clinical Psychology*. 2008; 76:329–340. doi: 10.1037/0022-006X.76.2.329. [PubMed: 18377128]
- Swenson R. An integrated theoretical model of condom use intentions among emerging adult female college students: The Health Belief Model and Theory of Planned Behavior (Doctoral dissertation). Retrieved from ProQuest. 2007 *. UMI 3277257.
- Thompson, JK.; Altabe, M.; Heinberg, LJ.; Tantleff-Dunn, S. *Exacting beauty: Theory, assessment, and treatment of body image disturbance*. American Psychological Association; Washington DC: 1999.
- Van Anders SM. Perceived sexual attractiveness and condom use self-efficacy. 2013 *. Unpublished raw data.
- Watson LB, Matheny KB, Gagné P, Brack G, Ancis JR. A model linking diverse women’s child sexual abuse history with sexual risk taking. *Psychology of Women Quarterly*. 2013; 37:22–37. *. doi: 10.1177/0361684312454535.
- Weaver AD, Byers ES. The relationships among body image, body mass index, exercise, and sexual functioning in heterosexual women. *Psychology of Women Quarterly*. 2006; 30:333–339. *. doi: 10.1111/j.1471-6402.2006.00308.x.
- Wood-Barcalow NL, Tylka TL, Augustus-Horvath CL. "But I like my body": Positive body image characteristics and a holistic model for young-adult women. *Body Image*. 2010; 7:106–116. doi: 10.1016/j.bodyim.2010.01.001. [PubMed: 20153990]
- Wulfert E, Safren SA, Brown I, Wan CK. Cognitive, behavioral, and personality correlates of HIV-positive persons' unsafe sexual behavior. *Journal of Applied Social Psychology*. 1999; 29:223–244. doi: 10.1111/j.1559-1816.1999.tb01383.x.

- Wulfert E, Wan CK. Condom use: A self-efficacy model. *Health Psychology*. 1993; 12:346–353. doi: 10.1037/0278-6133.12.5.346. [PubMed: 8223358]
- Wulfert E, Wan CK, Backus CA. Gay men's safer sex behavior: An integration of three models. *Journal of Behavioral Medicine*. 1996; 19:345–366. doi: 10.1007/BF01904761. [PubMed: 8836826]
- Yamamiya Y, Cash TF, Thompson JK. Sexual experiences among college women: The differential effects of general versus contextual body images on sexuality. *Sex Roles*. 2006; 55:421–427. *. doi: 10.1007/s11199-006-9096-x.

Highlights

- Body dissatisfaction and condom use self-efficacy were explored
- Data were from 2,495 participants across 11 studies
- Meta-analytic results revealed $r = -0.25$, Cohen's $d = -0.52$
- As body dissatisfaction increases, condom use self-efficacy decreases

Table 1

Measures Used to Assess Body Dissatisfaction and Condom Use Self-Efficacy

Primary Study	BD	CUSE	Sample	Parameter
Blashill et al., 2014	ABCD-SF	CUSES	105 HIV+ MSM	.29
Gillen et al., 2006	AE-MBSRQ	CUSES	193 men	-.02
Gillen et al., 2006	AE-MBSRQ	CUSES	213 women	.29
Salazar et al., 2004	BTWBAS	CUSES	522 women	.21
Schooler et al., 2005	BISC	SSES	188 women	.52
Swenson et al., 2007	BESAQ	SES	258 women	.29
Van Anders, 2013	Single item	N-MCAS	20 women	.42
Van Anders, 2013	Single item	N-MCAS	26 men	.30
Watson et al., 2012	S-OBCS	CSES	556 women	.24
Weaver & Byers, 2006	SIBID	CUSES	213 women	.23
Yamamiya et al., 2006	BIQ	SRBBS	384 women	.20

Note. For ease of interpretation, primary studies that included a measure of dissatisfaction were transformed to a measure of satisfaction, so that all primary study parameters could be interpreted similarly. BD = body dissatisfaction measures; CUSE = condom use self-efficacy measures; MSM = men who have sex with men; ABCD-SF = Assessment of Body Change and Distress Questionnaire-Short Form; AE-MBSRQ = Appearance Evaluation subscale from the Multidimensional Body Self-Relations Questionnaire; BTWBAS = Ben-Tovin Walker Body Attitudes Scale; BISC = Body Image Self Consciousness Scale; BIQ = Body-Image Ideals Questionnaire; S-OBCS = Shame subscale from the Objectified Body Consciousness Scale; SIBID = Situational Inventory of Body Image Dysphoria; CUSES = Condom Use Self-Efficacy Scale; SSES = Sexual Self-Efficacy Scale; SES = Self-Efficacy Scale; N-MCAS = Negotiation subscale from the UCLA Multidimensional Condom Attitudes Scale; CSES = Contraceptive Self-Efficacy Scale; SRBBS = Sexual Risk Behavior Beliefs and Self-Efficacy Scales.