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# Exploring Body Image, Contraceptive Use, and Sexual Health Outcomes Among an Ethnically Diverse Sample of Women

**Virginia Ramseyer Winter**[1] ⬤ · **Lindsay Ruhr**[2] · **Danielle Pevehouse**[1] ·
**Sarah Pilgrim**[3]

**Abstract** This cross-sectional study examined the links between body appreciation, contraceptive use, and sexual health outcomes. Body appreciation has been shown to influence contraceptive use in homogenous samples of women. However, a common problem in body image literature is a lack of racial and ethnic diversity with regard to sample; this study was able to take steps toward overcoming that limitation. A sample of 499 women aged 18–56 ($M = 26.24$; $SD = 6.15$) was recruited via Reddit.com—White (29.3%, $n = 120$), Asian (19%, $n = 78$), Black (17.3%, $n = 73$), multiracial (13.9%, $n = 57$), and Latina (13.9%, $n = 57$). Covariates included race/ethnicity, body size as measured by body mass index, relationship status, age, sexual orientation, and education level. Results indicated that higher levels of body appreciation were related to a higher likelihood of using non-barrier contraception. Regarding the covariates, race, relationship status, age, and education were related to non-barrier contraceptive use and age was related to dual contraceptive use. Further exploration is needed to determine how body appreciation may affect contraceptive use and sexual health outcomes and how these differ by race/ethnicity.

✉ Virginia Ramseyer Winter
 RamseyerWinterV@missouri.edu

[1] University of Missouri School of Social Work, 705 Clark Hall, Columbia, MO 65211, USA

[2] Planned Parenthood of the St. Louis Region and Southwest Missouri, St. Louis, MO, USA

[3] School of Social Work, University of Missouri-Kansas City, Kansas City, MO, USA

## Introduction

The association between body image and sexual behavior has predominantly been studied in homogenous samples of heterosexual young White women (e.g., Algars et al., 2011; Lemer, Salafia, & Benson, 2013; Meltzer & McNulty, 2010). Unfortunately, homogenous research samples undermine the generalizability of body image research and exclude women of color. The current study examined body image, contraceptive use, and sexual health outcomes in a racially and ethnically diverse sample of women. Understanding these relationships is crucial, as negative sexual health outcomes, unplanned pregnancy, and sexually transmitted infections (STIs) can drastically alter a woman's life course. Further, this is particularly relevant to women of color, as they experience unplanned pregnancy at a higher rate than White women (Finer & Zolna, 2014) and are disproportionately impacted by STIs (CDC, n.d.-a).

Body image is a complex construct and definitions vary. Thompson, Heinberg, Altabe, and Tantleff-Dunn (1999) offer a definition that includes "affective, cognitive, behavioral, and perceptual features" (p. 9), but suggest there are many terms that represent different components of body image. Additionally, researchers have found support for variation in body image by race and ethnicity (Grabe & Hyde, 2006). According to Talleyrand, Gordon, Daquin, and Johnson (2017), African-American women are likely impacted by the thin White ideal but are also internally motivated as their body image is not only influenced by weight and body parts. Further, in a study comparing body image between Asian-American and White women, researchers suggest Asian-American women may be subjected to sociocultural pressures from two very different cultures, their local culture and the greater U.S. culture (Frederick, Kelly, Latner, Sandhu, & Tsong, 2016). These studies highlight the complexity of women of color's experiences with their body image, and thus the need for racially and ethnically diverse samples in body image research.

## Theoretical Framework

Body image is contextual and is often influenced by idealized female bodies. The idealized female body has changed little from the Fredrickson and Roberts (1997) description of "youth, slimness, and Whiteness" (p. 181). Objectification theory posits that in response to sexual objectification, women adopt an observer's perspective when assessing their physical selves, which could have the potential to affect body image and health. Recent research found support for extending objectification theory to include sexual behavior and sexual health as potential outcomes of objectification and body image (Ramseyer Winter, 2017). However, objectification theorists caution that women of color may be more susceptible to sexual objectification than White women (Fredrickson & Roberts, 1997) because women of color face more than one marginalized identity. Further, race- and ethnicity-based sexual stereotypes place women of color at higher risk for sexual objectification (Watson, DeBlaere, Langrehr, Zelaya, & Flores, 2016).

Women of color also experience sexual health disparities. For example, African-American and Latina women have disproportionately higher HIV rates than White women within the U.S. (Reif et al., 2015). Women of color are also two times more likely than their White counterparts to have unplanned or unintended pregnancies (Finer & Zolna, 2014). Taken together, women of color are at a greater risk of experiencing sexual objectification than White women and experience sexual health outcome disparities. Thus, exploring relationships between body image and sexual behavior and sexual health among women of color is imperative.

### Body Image and Contraceptive Use

Past research has shown that women's contraceptive use may vary depending on their body image. For example, researchers found a positive association between higher levels of body appreciation and composite preventive sexual health behavior, including contraceptive use, among a sample of young, mostly White women (Ramseyer Winter, 2017). Further, Gillen, Lefkowitz, and Shearer (2006) found that a greater frequency of hormonal contraception use was associated with better body image. They also found that better body image was positively related to less unprotected sex in a racially diverse sample. Another study reported significant positive relationships between higher levels of body appreciation and being more likely to use male condoms and dual contraceptives (both male condoms and hormonal birth control; Ramseyer Winter & Ruhr, 2017). This body of research suggests that body image may influence contraceptive use among women, but only one known study explored this association among a racially diverse sample (Gillen et al., 2006).

Even more limiting is the overall lack of body image and sexual health outcomes (e.g., STI diagnosis, unplanned pregnancy) research. This research is imperative within the context of sexual health due to the significant difference in outcomes by race. This study is one of the first to explore sexual health outcomes in relation to body image among a diverse sample of women.

### The Current Study

Taken together, existing research reveals a dearth of scholarship exploring body image, contraceptive use, and sexual health outcomes. Approximately 69–84% of American women are dissatisfied with their body and would like to have a smaller frame (Pruis & Janowsky, 2010). For this study, body appreciation was selected as a positive measure of body image. According to Avalos, Tylka, and Wood-Barcalow (2005), body appreciation is described as accepting and respecting one's body, having good opinions about one's body, and rejecting media images of a thin ideal that the majority of women cannot obtain. Additionally, we measured non-barrier contraceptive use and male condom use separately and together (dual contraceptive use), as the former is an intrapersonal behavior a woman can do on her own and the latter is an interpersonal behavior that requires partner consent.

Given the scant literature on associations between body image and sexual health among racially and ethnically diverse women, we do not offer hypotheses. Rather, we pose the following research questions, while controlling for race/ethnicity, body size, relationship status, age, sexual orientation, and education level:

1. What is the association between body appreciation and contraceptive (non-barrier, male condom, and dual) use?
2. What is the association between body appreciation and sexual health outcomes (i.e., unplanned pregnancy and STI diagnosis)?

## Method

### Participants

Participants ($N = 499$) were recruited from www.reddit.com to complete an online survey about body image and sexual health. The mean age of the sample was 25.48 (SD = 6.35) and the mean BMI was 25.91 (SD = 7.12). Participants were racially and ethnically diverse with 27.4% White ($n = 136$), 23.0% Asian ($n = 114$), 19.2% Black ($n = 95$), 17.3% multiracial ($n = 86$), and 13.1% Latina ($n = 65$). With regard to relationship status, 40.6% ($n = 201$) reported being single, 36.8% ($n = 182$) partnered, 18.4% ($n = 91$) married, and 4.2% ($n = 21$) reported another relationship status. The majority of the sample identified as heterosexual (62.8%, $n = 311$). The sample was very educated—61.7% ($n = 307$) reported having an associate's degree or higher. For a full list of participant characteristics and study indicator descriptives, refer to Table 1.

## Procedure

The current study utilized a cross-sectional design with an online survey using Qualtrics. To qualify, participants were required to (1) be 18 years or older, (2) identify as a woman, and (3) identify as at least one of the following: White/Caucasian, Black, Hispanic/Latina, or Asian-American. After obtaining approval from the first author's university institutional review board, participants were recruited during the summer of 2016 using www. reddit.com (Reddit), a social media discussion website. Individuals utilized usernames, allowing for anonymity. Reddit is organized into subreddits, virtual bulletin boards organized by topics/areas of interest. Individuals with accounts can post to subreddits. From there, other account holders vote the post up or down. The most popular posts (with the most up votes) are displayed on the front page of Reddit.

Using purposive sampling, we selected subreddits that would allow us to recruit a racially and ethnically diverse sample of women. For example, we posted the survey weekly on the following subreddits: Black ladies, Asian-American, and Latina beauties, among others. We randomly selected 15 participants to receive a $50 gift card as an incentive to participate. The final sample included 499 women.

## Measures

### Body Image

Body image was measured with the Body Appreciation Scale-2 (BAS-2; Tylka & Wood-Barcalow, 2015), a ten-item measure with a five-point response option ($1 =$ never; $5 =$ always). Sample items include: "I respect my body" and "I am attentive to my body's needs." We computed a body appreciation score with higher scores indicating higher levels of body appreciation. The Cronbach's alpha for the current sample was estimated to be high ($\alpha = .92$). Additionally, the Cronbach's alpha was estimated to be high by race subgroups: White ($\alpha = .92$), Black ($\alpha = .93$), Asian ($\alpha = .93$), multiracial ($\alpha = .91$), and Latina ($\alpha = .91$). Additionally, to validate the unidimensional structure of the BAS-2, we ran a confirmatory factor analysis with principal axis factoring. The one-factor solution produced an eigenvalue of 5.16 (standardized item loadings ranging from .52 to .89), and the two-factor solution produced an eigenvalue of 0.57. As such, we confirmed the unidimensional structure of the scale. Tylka and Wood-Barcalow (2015) found a strong test–retest reliability over a 3-week period.

### Contraceptive Use

We measured three behaviors related to contraceptive use: non-barrier contraceptive use, male condom use, and dual contraceptive method use.

### Non-barrier Contraceptive Use

Non-barrier contraceptive use was measured with one item: "Which birth control methods are you and/or your sexual partner currently using (select all that apply)?" Response options included: birth control pills; patch; ring; the shot (Depo-Provera); intra-uterine device (IUD, such as ParaGard or Mirena); implant (inserted under the skin of your arm such as Nexplanon); male condom; insertable/female condom; emergency contraception/"morning after pill"; diaphragm; withdrawal (pulling penis out before man ejaculates/comes); periodic abstinence (abstinence during fertile time of cycle), sometimes called natural family planning; none of these; and other (please specify). For this paper, we collapsed all non-barrier methods (birth control pills, patch, ring, the shot, IUD, and implant) into one dichotomous variable. If a participant reported at least one of these non-barrier methods, she was coded as yes, participant reported using a non-barrier contraceptive method (1). All other participants were coded as no, participant did not report using a non-barrier contraceptive method (0).

### Male Condom Use

Male condom use was obtained from the birth control method question: "Which birth control methods are you and/or your sexual partner currently using (select all that apply)?" Male condom was one of the response options. The item was coded as yes, participant reported currently using male condoms (1), and no, participant did not report currently using male condoms (0).

### Dual Contraceptive Method Use

Participants who reported using both a non-barrier contraceptive method and male condoms were coded as yes, participant reported using dual methods (1). All others were coded as no (0).

### Sexual Health Outcomes

We included two measures of sexual health outcomes, unplanned pregnancy and STI diagnosis.

### Unplanned Pregnancy

Participants reported unplanned pregnancies by responding to the following item: "If yes [participant has ever had sexual intercourse], have you ever experienced a pregnancy that you did not plan or intend?" Response options included yes (1) and no (2).

### Sexually Transmitted Infection

A history of a sexually transmitted infection (STI) diagnosis was recorded with one question: "Please indicate whether a healthcare

**Table 1** Participant characteristics and study indicator descriptives ($N =$ 499)

| Characteristic | N | % |
|---|---|---|
| Race/ethnicity | | |
| White, non-Hispanic | 136 | 27.4 |
| Black, non-Hispanic | 95 | 19.2 |
| Asian, non-Hispanic | 114 | 23.0 |
| Multiracial | 86 | 17.3 |
| Hispanic/Latina | 65 | 13.1 |
| Sexual orientation | | |
| Heterosexual | 311 | 62.8 |
| Non-heterosexual | 184 | 37.2 |
| Relationship status | | |
| Single | 201 | 40.6 |
| Married | 91 | 18.4 |
| Partnered | 182 | 36.8 |
| Other | 21 | 4.2 |
| Education level | | |
| High school | 56 | 11.3 |
| Some college | 134 | 27.0 |
| Associate's degree | 31 | 6.2 |
| Bachelor's degree | 200 | 40.2 |
| Graduate degree | 76 | 15.3 |
| Currently using non-barrier contraceptive method | | |
| Yes | 256 | 51.5 |
| No | 241 | 48.5 |
| Currently using male condoms | | |
| Yes | 145 | 29.2 |
| No | 352 | 70.8 |
| Currently using both male condoms and a non-barrier contraceptive method | | |
| Yes | 56 | 11.3 |
| No | 441 | 88.7 |
| Ever experienced an unintended pregnancy | | |
| Yes | 73 | 17.9 |
| No | 334 | 82.1 |
| Ever been diagnosed with an STI | | |
| Yes | 34 | 6.8 |
| No | 463 | 93.2 |
| | M | SD |
| Age | 25.48 | 6.35 |
| BMI | 25.91 | 7.12 |

provider has ever diagnosed you with any of the following conditions: bacterial vaginosis, trichomoniasis, genital herpes, genital warts, chlamydia, gonorrhea, hepatitis A, hepatitis B, syphilis, HIV/AIDS, human papilloma virus (HPV), and none of the above." This item was recoded so that if a participant selected any of the STIs, she was coded as yes, participant has been diagnosed with

an STI (1). All other participants were coded as no, participant has not been diagnosed with an STI (0).

### Covariates

Covariates included race/ethnicity, body size, relationship status, age, sexual orientation, and education level. Not all covariates were included in all analyses. This is noted at the beginning of each outcome variable in the results section.

### Race/Ethnicity

Race and ethnicity were reported with one item: "How do you identify your race/ethnicity (select all that apply)." Response options were: White/Caucasian; Black (African-American, Caribbean-American, Creole, Haitian, Jamaican, West Indian, Brazilian, Ethiopian, Somali, Kenyan, and other [please specify]); Hispanic/Latina (Mexican decent, Caribbean decent, Central American decent, South American decent, and other [please specify]); and Asian (East Asian decent [Chinese, Japanese, and Korean], Southeast Asian decent [Filipino, Vietnamese, Cambodian, and Hmong], and other [please specify]). Race/ethnicity was recoded to non-Hispanic White/Caucasian (0), non-Hispanic Black (1), Hispanic/Latina (2), non-Hispanic Asian (3), and multiracial (4).

### Body Size

Body mass index (BMI) was calculated with self-reported weight and height. BMI was treated as a continuous variable.

### Relationship Status

Romantic relationship status was measured with the following item: "What best describes your romantic relationship status?" Response options included: married, divorced, widowed, partnered, single, and other (please specify).

### Age

Age was measured with one item: "How old are you (in years)?" Age was treated as a continuous variable.

### Sexual Orientation

We measured sexual orientation with one item: "Which of the following best describes your sexual orientation (select one)?" Response options included: heterosexual, lesbian, gay, homosexual, queer, bisexual, pansexual, asexual, and other (please specify). Due to a lack of variance, we recoded sexual orientation to non-heterosexual (0) and heterosexual (1).

## Education Level

We measured education level with the following item: "What is the highest degree or level of school you have completed? If currently enrolled, mark the previous grade or highest degree received." Response options included: less than high school graduate, high school graduate–high school diploma or the equivalent (for example: GED), some college, associate's degree (for example: AA, AS), bachelor's degree (for example: BA, AB, BS), master's degree (for example: MSW), PhD/doctorate, and other (please specify). Only one participant reported having less than a high school degree and was excluded from analyses. Additionally, few participants reported having a PhD/doctorate ($n = 13$), so we collapsed participants with a master's degree and those with a PhD/doctorate into one category. This left us with the following categories: high school diploma or equivalent, some college, associate's degree, bachelor's degree, and graduate degree.

## Results

Data were analyzed using IBM SPSS Statistics 24. Logistic regression results are present in Table 2. Approximately half of the participants ($n = 256$) reported currently using a non-barrier method, while only 29.2% ($n = 145$) reported current condom use. Just over 10% reported using both non-barrier contraception and male condoms ($n = 56$). In regard to sexual health outcomes, 17.9% ($n = 73$) reported ever experiencing an unplanned pregnancy and 6.8% ($n = 34$) ever being diagnosed with an STI.

## Comparisons by Race/Ethnicity

White women had the lowest BAS score ($M = 3.13$), followed by Latina ($M = 3.21$), multiracial ($M = 3.23$), Asian ($M = 3.25$), and Black ($M = 3.37$) participants. However, an ANOVA analysis revealed that these differences were not significant ($F(4,488) = 1.31$, $p = .267$). Regarding body size, Asian women reported the lowest BMI ($M = 23.65$), followed by White ($M = 25.63$), multiracial ($M = 26.52$), Latina ($M = 26.65$), and Black ($M = 27.80$) women. ANOVA results revealed these differences were statistically significant ($F(4,470) = 4.81$, $p = .001$). Bonferroni post hoc analyses found that the only significant difference in BMI was between Black and Asian women ($M$ difference $= 4.16$, $p < .001$). Refer to Table 3 for additional comparisons by race/ethnicity.

## What Is the Association Between Body Appreciation and Contraceptive Use?

### Non-barrier Contraceptive Use

All women were included ($N = 499$) in these analyses, and we controlled for race/ethnicity, age, BMI, relationship status, sexual orientation, and education level.

**Table 2** Body appreciation—logistic regression odds ratios

| Variable | Non-barrier | Dual methods | Unplanned pregnancy |
|---|---|---|---|
| Body appreciation score | 1.35* | 0.80 | 1.32 |
| Race/ethnicity | | | |
| Black, non-Hispanic | 0.48* | 0.95 | 0.77 |
| Asian, non-Hispanic | 0.45** | 0.47 | 0.64 |
| Latina | 0.60 | 0.65 | 1.20 |
| Multiracial | 0.86 | 0.67 | 3.37** |
| Sexual orientation | | | |
| Heterosexual | 1.33* | 1.00 | 1.21 |
| Relationship status | | | |
| Married | 1.92* | 0.29 | |
| Partnered | 2.84*** | 0.52 | |
| Other | 2.11 | 0.73 | |
| Education level | | | |
| Some college | 0.94 | 0.48 | 0.84 |
| Associate's degree | 1.50 | 0.45 | 1.58 |
| Bachelor's degree | 2.40* | 0.88 | 0.43 |
| Graduate degree | 3.01* | 0.54 | 0.33*** |
| BMI | 1.00 | 1.01 | 1.02 |
| Age | 0.90*** | 0.88* | 1.21*** |

Referent groups: White, non-Hispanic; non-heterosexual; single; high school diploma

\*$p < .05$; \*\*$p < .01$; \*\*\* $p < .001$

The overall model was statistically significant ($\chi^2 = 68.81$, $p < .001$). Body appreciation was significantly related to non-barrier contraceptive use (OR 1.35, $p = .027$, CI 1.04–1.76). With each one-point increase in body appreciation, participants were 1.35 times more likely to report non-barrier contraceptive use. For the control variables, women who identified as non-Hispanic Black (OR 0.48, $p = .017$, CI 0.26–0.87) or non-Hispanic Asian (OR 0.45, $p = .007$, CI 0.25–0.81) were 52 and 55% less likely than non-Hispanic White-identified women to report non-barrier contraceptive use. Women who were partnered (OR 2.84, $p < .001$, CI 1.80–4.48) or married (OR 1.92, $p = .044$, CI 1.02–3.60) were 2.84 and 1.92 times more likely to report non-barrier contraceptive use than those who were single. With each additional year of age, participants were approximately 10% less likely to report non-barrier contraceptive use (OR 0.90, $p < .001$, CI 0.860–0.94). Finally, participants who reported having a bachelor's degree (OR 2.40, $p = .017$, CI 1.17–4.94) and graduate degree (OR 3.01, $p = .018$, CI 1.21–7.52) were 2.40 and 3.01 times more likely, respectively, to have reported non-barrier contraceptive use when compared to those who reported a high school diploma as their highest degree received.

**Table 3** Descriptives by race/ethnicity ($N = 499$)

| Characteristic | White non-Hispanic % (n) | Black non-Hispanic % (n) | Asian, non-Hispanic % (n) | Multiracial % (n) | Hispanic Latina % (n) | Total (n) |
|---|---|---|---|---|---|---|
| Currently using non-barrier contraceptive method | | | | | | |
| Yes | 57.7 (79) | 41.1 (39) | 41.2 (47) | 52.3 (45) | 46.2 (30) | 240 |
| Currently using male condoms | | | | | | |
| Yes | 23.4 (32) | 40.0 (38) | 24.6 (28) | 25.6 (22) | 38.5 (25) | 145 |
| Currently using both male condoms and a non-barrier contraceptive method | | | | | | |
| Yes | 13.9 (19) | 12.6 (12) | 5.3 (6) | 11.6 (10) | 13.8 (9) | 56 |
| Ever experienced an unintended pregnancy | | | | | | |
| Yes | 16.8 (20) | 15.4 (12) | 7.3 (6) | 35.6 (26) | 16.4 (9) | 73 |
| Ever been diagnosed with an STI | | | | | | |
| Yes | 7.3 (10) | 6.3 (6) | 6.1 (7) | 9.3 (8) | 4.6 (3) | 34 |

No is the referent group for each variable

### Male Condom Use

Only women who reported being currently sexually active ($n = 329$) were included in this analysis. We controlled for race/ethnicity, age, BMI, relationship status, sexual orientation, and education level. The overall model was not statistically significant ($\chi^2 = 2.46, p = .029$). As such, we did not interpret the results.

### Dual Contraceptive Use

Only women who reported being currently sexually active ($n = 329$) were included in this analysis. We controlled for race/ethnicity, age, BMI, relationship status, sexual orientation, and education level.

The overall model was statistically significant ($\chi^2 = 29.11$, $p = .016$). Body appreciation was not significantly related to dual contraceptive use (OR 0.80, $p = .332$, CI 0.50–1.26). For each additional year of age, participants were approximately 12% less likely to report using dual methods (OR 0.88, $p = .025$, CI 0.79–0.98). None of the other covariates were significantly related to dual contraceptive use.

## What Is the Association Between Body Appreciation and Sexual Health Outcomes (Unplanned Pregnancy and STI Diagnosis)?

### Unplanned Pregnancy

Only women who reported ever having had sex ($n = 410$) were included in unplanned pregnancy analyses. These analyses controlled for race/ethnicity, age, BMI, sexual orientation, and education level.

The overall model was statistically significant ($\chi^2 = 89.70$, $p < .001$). Body appreciation was not significantly related to ever having an unplanned pregnancy (OR 1.32, $p = .188$, CI 0.87–1.99). Participants who identified as more than one race/

ethnicity were 3.37 times more likely to have ever experienced an unplanned pregnancy (OR 3.37, $p = .004$, CI 1.46–7.79) than their non-Hispanic White counterparts. Age was also related to unplanned pregnancy; with each additional year, participants were 1.21 times more likely to have ever had an unplanned pregnancy (OR 1.21, $p < .001$, CI 1.14–1.28). Finally, when compared to participants who reported a high school diploma as their highest degree received, those with a graduate degree were almost 97% less likely to have ever had an unplanned pregnancy (OR 0.03, $p < .001$, CI 0.01–0.22).

### Sexually Transmitted Infections

Only women who reported ever having sex were included in STI diagnosis analyses ($n = 410$).

Due to a lack of variance in the outcome variable, we were unable to conduct multivariate analysis with STI diagnosis as the outcome variable. The difference in body appreciation score means between those who have not had an STI diagnosis ($M = 3.26$) and those who have had a diagnosis ($M = 3.53$) approached significance, $F(1, 406) = 3.48, p = .063$.

## Discussion

The relationship between body appreciation, contraceptive use, and sexual health outcomes was explored using a racially and ethnically diverse sample of women obtained by recruiting participants on Reddit. We found a positive relationship between body appreciation and contraceptive use, where with each one-point increase in body appreciation, participants were 1.35 times more likely to report non-barrier contraceptive use. We also found that body appreciation was not significantly related to ever having an unplanned pregnancy. These findings, along with their implications for the field and directions for future research, are discussed in more detail below.

While body appreciation and non-barrier contraception were positively related in this sample, non-barrier contraception use varied by race. Women who identified as non-Hispanic Black or non-Hispanic Asian were 52 and 55% less likely to report non-barrier contraception use than non-Hispanic White women. This is congruent with previous research, which suggests the relationship between body image and contraception may vary by race (Wingood, DiClemente, Harrington, & Davies, 2002). It is possible this is an issue of access. In order to gain access to non-barrier contraception, women must see a medical professional and obtain a prescription for the pill, patch, ring, and shot, and this will often entail multiple visits to a health center or pharmacy for refills. For other options such as the implant or IUD, the cost of the device itself, along with the insertion and removal fees of these long-acting but highly effective devices, can be barriers for low-income women and those without adequate health insurance coverage. Despite an increase in the number of U.S. adults with health insurance in recent years, many U.S. citizens are still lacking access to needed healthcare (Pérez-Escamilla, 2010). In the U.S., Hispanics have the lowest rate of health insurance coverage out of all races and ethnicities with only 80.1% covered in 2014 (Pérez-Escamilla, 2010; Smith & Medalia, 2015).

Another possible explanation for the difference in body image and non-barrier contraceptive use between women of varying races and ethnicities is that women of color may be facing higher levels of sexual objectification than their non-Hispanic White counterparts (Fredrickson & Roberts, 1997), which could result in lower levels of body appreciation. Recent research has shown that negative self-objectification is inversely related to body appreciation (Ramseyer Winter, 2017). In other words, the more a woman feels that she is an object the more her level of appreciation for her body declines. When women see themselves as objects, their level of body shame rises (Fredrickson & Roberts, 1997) as well. The frequency of non-barrier contraception use has been associated with better body image (Gillen et al., 2006).

Although body appreciation was related to being more likely to use non-barrier contraception, it was not related to using male condoms alone or to using both non-barrier contraceptives and male condoms together (dual contraceptive use). This finding is contrary to a recent study that found that higher levels of body appreciation are linked to a greater likelihood of male condom use as well as a greater likelihood of dual contraceptive use (Ramseyer Winter & Ruhr, 2017). This finding that body appreciation is not significantly related to using male condoms alone or to using dual contraception is worrisome as using dual contraceptive methods is the most effective way to prevent the transmission of STIs and unplanned pregnancies (Cates & Stone, 1992). It is possible this is due to the intrapersonal nature of non-barrier method use and interpersonal nature of male condom use. The use of male condoms requires partner consent and a male who is willing to use them correctly, whereas the use of non-barrier contraception is something that a woman can use herself and without a partner's consent and knowledge. Condoms, when

used correctly, provide some protection against STIs, whereas non-barrier contraception alone only works to prevent pregnancy.

When looking at this finding by the participant's level of educational attainment, participants who reported having a bachelor's degree and graduate degree were 2.40 and 3.01 times more likely, respectively, to have reported contraceptive use when compared to those who reported a high school diploma as their highest degree received. This finding is consistent with research that found that contraceptive pill use is associated with higher levels of education: 25% of women with a bachelor's degree or higher compared to 3.6% without a high school diploma or with a GED (Daniels, Daugherty, & Jones, 2014). Research has shown that contraceptive knowledge predicts contraceptive use in young adults (Frost, Lindberg, & Finer, 2012), which could help explain why contraceptive use is more likely among those with bachelor's and graduate degrees as compared to those with a high school diploma.

With regard to body appreciation and sexual health outcomes, the overall model was significant but body appreciation was not significantly related to having had an unplanned pregnancy. The most surprising finding related to unplanned pregnancies was that when compared to participants who reported a high school diploma as their highest degree received, those with a graduate degree were almost 97% less likely to have ever had an unplanned pregnancy. Finer and Zolna (2016) found that when comparing unintended pregnancy rates by educational attainment in 2011, women lacking a high school degree had the highest rate. As women advance their education, they could be gaining more contraceptive knowledge which is in turn increasing their use and thus preventing unintended pregnancies. Unintended pregnancy rates also disproportionately impact minority women. In this study, participants who identified as more than one race/ethnicity were 3.37 times more likely to have ever experienced an unplanned pregnancy than their non-Hispanic White counterparts. In 2011, the unintended pregnancy rate for African-American women was 79 per 1000, which is more than double that of non-Hispanic White women with a rate of 33 per 1000 (Finer & Zolna, 2016).

These findings suggest the need for interventions to be developed and implemented to promote body appreciation and contraceptive use in diverse groups of women with varying levels of educational attainment. This study found evidence that women of color are less likely to report non-barrier contraceptive use and are more likely to ever have experienced an unplanned pregnancy than their non-Hispanic White counterparts, which significantly contributes to the current body of knowledge in this area. Interventions for women of color need to be designed while taking into consideration that these women are possibly at a higher risk of sexual objectification due to racial and ethnic sexual stereotypes (Watson et al., 2016), and that they face more than one marginalized identity, as opposed to being developed from a non-Hispanic White perspective and for a non-Hispanic White audience.

Future research should continue to explore the relationship between body appreciation, contraceptive use, and sexual outcomes in a more diverse, representative sample of women (i.e., gender identity, sexual orientation, ability, age); our sample was racially and ethnically diverse but rather homogenous in other ways. Women in certain racial and ethnic minorities, such as African-American women, experience disproportionately higher rates of STIs than their White counterparts (Hogben & Leichliter, 2008; Newman & Berman, 2008), so sexual health outcomes for these women should continue to be explored. Qualitative research could provide rich information on skin tone satisfaction and body appreciation in women as it would allow women to give unrestricted, in-depth responses pertaining to their body image and level of satisfaction with their skin tone, as research suggests skin tone may be salient for women of color (Landor & Halpern, 2016).

## Limitations

This study adds significantly to the existing body of sexological science knowledge; however, there are some limitations to be noted. Due to the cross-sectional design of this study, we are unable to generalize results or discuss causality. With regard to BMI, the women in this study had a mean BMI of 26.33 (SD = 7.33; range 17–64), which is categorized as overweight (CDC, 2016). In the U.S. during 2011–2014, over one-third of adults were categorized as having a BMI that falls within the "obese" range, which means having a BMI greater than 30.0 (Ogden, Carroll, Fryar, & Flegal, 2015). As such, it would be beneficial to do a similar study with a more representative percentage of women in this category. The majority of the sample identifies as heterosexual (62.8%), but the large portion of those who do not identify as heterosexual could lead to inaccurate results due to how contraceptive use was measured. To account for this, we controlled for sexual orientation in the non-barrier contraception and male condom statistical models.

The use of Reddit to recruit participants provided a sample that was split, although not evenly, between women who identified as non-Hispanic White, non-Hispanic Asian, non-Hispanic Black, multiracial, and Hispanic/Latina. A common problem in body image literature is a lack of racial and ethnic diversity with regard to sample, and this study was able to take steps toward overcoming that limitation. Although recruiting participants through Reddit allowed us to diversify our sample, there are some limitations with this approach, such as differences in participant location and culture, among others.

There are also several limitations related to measurement. We did not ask women who marked IUD as their current birth control method to specify which type of IUD they are currently using. As such, participants could be using the non-hormonal or hormonal IUD. The male condom measure does not account for how well the participant uses the male condom—does she use it correctly and consistently, for example? Further, the current study utilizes BMI as a measure of body size. Although this measure is certainly problematic (e.g., Satinsky & Ingraham, 2014), it is currently the best measure available. The use of short, non-validated questionnaires to measure the dependent variables is the final measurement-related limitation. Future research should make use of validated scales. Finally, little is known about the etiology of bacterial vaginosis, but it is often not considered an STI. However, we chose to include it because it is included by the Centers for Disease Control and Prevention (n.d.-b).

## Conclusion

The current study explored body appreciation, contraceptive use, and sexual health outcomes among a racially and ethnically diverse sample. Results suggest that some components of body image may be related to non-barrier contraceptive use and unintended pregnancy. This study also suggests that body appreciation plays a significant role in the sexual health behaviors of women of color. Interventions aimed at increasing sexual health outcomes for White women, and women of color should take into consideration how body appreciation affects specific populations. The definitions and terms used within body appreciation and body image research are varied, and so are the individual experiences of women of color. Further research studies that are diverse and inclusive should be conducted in order to extend the current study's findings and expand the traditional White-centered body appreciation/image literature.

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