Research Article

Is High Sex Drive Associated With Increased Sexual Attraction to Both Sexes?

It Depends on Whether You Are Male or Female

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ABSTRACT—If sex drive is a generalized energizer of sexual behaviors, then high sex drive should increase an individual’s sexual attraction to both men and women. If sex drive energizes only dominant sexual responses, however, then high sex drive should selectively increase attraction to men or to women, but not to both, depending on the individual’s sexual orientation. Data from three studies assessing a total of 3,645 participants show that for most women, high sex drive is associated with increased sexual attraction to both men and women. For men, however, high sex drive is associated with increased sexual attraction to only one sex or the other, depending on the individual’s sexual orientation. These results suggest that the correlates of sex drive and the organization of sexual orientation are different for women and men.

Higher levels of sex drive associated with increased levels of sexual attraction to both men and women (i.e., is sex drive a generalized energizer of sexual attractions?), or are higher levels of sex drive associated with increased sexual attraction to one sex or the other, but not to both (i.e., does higher sex drive increase the probability of dominant sexual responses, but not the probability of nondominant sexual responses?)? The hypothesis that follows most directly from classic drive theories is that higher levels of sex drive are associated with increases in individuals’ dominant patterns of sexual attraction and response. Thus, high-drive heterosexual men and women should show increased attraction to other-sex but not to same-sex individuals, whereas high-drive homosexual men and women should show increased attraction to same-sex but not to other-sex individuals.

However, this hypothesized pattern might differ for men and women if other-sex and same-sex attractions are more strongly dominant and nondominant in men than they are in women. Previous research has in fact shown that men report more mutually exclusive patterns of same-sex and other-sex attraction than women do, and conversely, women report more bisexual patterns of attraction than men do (Pattatuucci, 1998). Related research shows that same-sex attraction is often more negatively correlated with other-sex attraction in men than in women (Lippa, 2000; Lippa & Arad, 1997). A number of studies show that, over the course of individuals’ lives, women tend to be more flexible and variable in their same-sex and other-sex attractions than men are, which suggests that same-sex and other-sex attractions are less mutually exclusive for women than they are for men (Baumeister, 2000; Diamond, 2000). Corroborating these self-report data, recent physiological research shows that heterosexual men show genital arousal primarily to female sexual stimuli, and homosexual men show genital arousal primarily to...
male sexual stimuli, whereas heterosexual and homosexual women show genital arousal to both male and female sexual stimuli (Chivers, Rieger, Latty, & Bailey, 2004).

Differences in the organization of men’s and women’s same-sex and other-sex attractions may result, in part, from sex differences in the physiological processes of masculinization and feminization that underlie sexual orientation. Such sex differences could result if the neural and hormonal processes that underlie the development of sexual orientation differ for men and women. For example, perhaps there is more of a bisexual “default” neural structure in females, whereas masculinization of neural structures in males, under the influence of androgens, also entails defeminization of structures (see Hines, 2004, for a recent review).

Social-environmental theories may also help explain why men’s and women’s other-sex and same-sex attractions are patterned differently. Many cultures construe men’s other-sex and same-sex sexual attractions to be more binary and mutually exclusive than they construe women’s corresponding attractions to be (see Lippa & Tan, 2001). The “either-or” nature of male sexual orientation may result, in part, from gender socialization that is more rigid and rigorous for boys than for girls and from socialization agents who disapprove more strongly of feminine behaviors in boys and men than they do of masculine behaviors in girls and women (Fagot & Hagan, 1991; Jacklin, DiPietro, & Maccoby, 1984; Lippa, 2005). Such socialization pressures could lead heterosexual men to suppress same-sex attractions more than heterosexual women do.

Socialization processes may also influence the degree to which sex and sex-linked physical traits are central to sexual attraction. Peplau (2001) has argued that women tend more than men to develop a person-centered and relationship-centered orientation to sex, whereas men tend more than women to develop a body-centered and recreational orientation to sex. Thus, relative to men, women may be more attracted to partners’ personalities and their ability to provide satisfying emotional and personal relationships, whereas relative to women, men may be more attracted to partners’ physical traits and their potential to provide satisfying sexual relationships (Diamond, 2003). By implication, the traits that women find attractive in a sexual partner may be less dependent on the potential partner’s sex than is the case for men, whereas the traits that men find attractive in a sexual partner may be more dependent on the potential partner’s sex than is the case for women.

In the language of classic learning theories, the relative bipolarity of men’s sexual orientation implies that men’s attraction to one sex tends to be strongly dominant, whereas their attraction to the other sex tends to be strongly nondominant. In contrast, women’s other-sex and same-sex attractions may not be as strongly segregated into dominant and nondominant responses. If other-sex and same-sex attractions are more polarized and mutually exclusive in men than in women, then the association between sex drive and same-sex and other-sex attractions may differ for men and women. Specifically, high sex drive in men may be associated with increased sexual attraction to one sex or the other, depending on the individual’s sexual orientation. For women, in contrast, high sex drive may be associated with increased sexual attraction to both sexes. Three studies were conducted to test this hypothesis.

**STUDY 1**

**Method**

Participants in Study 1 were 1,735 college students (633 men and 1,102 women). Seven hundred twenty-one were in four large human-sexuality classes at California State University, Fullerton (CSUF; see Lippa, 2000, Study 1), and 1,014 were participants in a study on finger-length ratios and sexual orientation (Lippa, 2003). Forty-two percent of participants were White, 22% were Hispanic, 21% were Asian, and the remainder fell into other categories. Participants’ median age was 22.

Participants completed an anonymous questionnaire that included a number of personality scales, a “sexual attitudes and behavior” scale, and a cover sheet that asked for demographic information. They also reported their sexual orientation. The scale measuring sexual attitudes and behavior included three items used for the present study: “I am sexually attracted to men,” “I am sexually attracted to women,” and “I have a strong sex drive.” Participants used a 7-point scale (ranging from strongly disagree to strongly agree) to respond to these items.

**Results and Discussion**

The analyses that follow are restricted to the 95% of men and the 97% of women who described themselves as heterosexual. Because the distributions of men’s and women’s responses to the attraction-to-men and attraction-to-women items were quite skewed, nonparametric correlations (Spearman’s rho), as well as Pearson product-moment correlations, are reported.

Table 1 presents, separately for men and women, means and standard deviations for self-reported sex drive, attraction to men, and attraction to women. Table 2 presents intercorrelations of self-reported sex drive, attraction to men, and attraction to women, for men (above the diagonal) and for women (below the diagonal).

Men’s sex drive was significantly associated with their attraction to women, but not with their attraction to men, and the difference between these correlations was significant, $t(580) = -4.05$, $p < .0001$, using a $t$ test for differences between correlations when two variables are correlated with the same third variable (see McNemar, 1962, p. 140; all tests are two-tailed and, unless stated otherwise, computed for Spearman’s rho). In contrast, women’s sex drive was positively correlated with both their attraction to men and their attraction to women, and these two correlations did not differ significantly, $t(1035) = 1.52$, n.s.
TABLE 1
Participants, Mean Sex Drive, Attraction to Men, and Attraction to Women

<table>
<thead>
<tr>
<th>Group</th>
<th>Sex drive</th>
<th>Attraction to men</th>
<th>Attraction to women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study 1: heterosexual men</td>
<td>5.65 (1.43)</td>
<td>1.31 (1.01)</td>
<td>6.75 (0.93)</td>
</tr>
<tr>
<td>Heterosexual men</td>
<td>5.77 (1.24)</td>
<td>6.80 (0.72)</td>
<td>1.86 (1.53)</td>
</tr>
<tr>
<td>Study 2: gay men</td>
<td>4.53 (1.85)</td>
<td>2.66 (1.78)</td>
<td>6.53 (1.27)</td>
</tr>
<tr>
<td>Lesbian women</td>
<td>0.17 (1.00)</td>
<td>1.87 (0.91)</td>
<td>6.31 (0.70)</td>
</tr>
</tbody>
</table>

Note: Standard deviations are in parentheses. For Study 3, sex-drive scores are expressed as Z scores.

The negative correlation between attraction to men and attraction to women was stronger for men than for women (Z = -5.00, p < .0001). This sex difference was even stronger when homosexual participants (15 men and 11 women) and bisexual participants (14 men and 24 women) were included in analyses (men's p = -5.1, p < .001; women's p = -17, p < .001; Z difference = -7.90, p < .0001).

On average, heterosexual men reported having higher levels of sex drive than heterosexual women (see means in Table 1), t(1621) = 11.28, p < .0001, d = 0.58. Also, women's self-reported levels of sex drive were significantly more variable than men's, F(1,1621) = 12.58, p < .001 (Levene's test for equality of variances).

Overall, the results of Study 1 showed that, for heterosexual men, sex drive correlated with attraction to women, but not with attraction to men. For heterosexual women, in contrast, sex drive correlated with both attraction to men and attraction to women.

TABLE 2
Intercorrelations of Sex Drive, Attraction to Men, and Attraction to Women in Study 1 and Study 2

<table>
<thead>
<tr>
<th>Measure</th>
<th>Sex drive</th>
<th>Attraction to men</th>
<th>Attraction to women</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>r</td>
<td>rho</td>
<td></td>
</tr>
<tr>
<td>Study 1: heterosexual men and women</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex drive</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Attraction to men</td>
<td>.27***</td>
<td>.26***</td>
<td>—</td>
</tr>
<tr>
<td>Attraction to women</td>
<td>.21***</td>
<td>.19***</td>
<td>—</td>
</tr>
</tbody>
</table>

| Study 2: gay men and lesbian women |           |                   |                     |
| Sex drive                       | —         | —                 | —                   |
| Attraction to men               | .29*      | .23*              | —                   |
| Attraction to women             |           |                   |                     |

Note. In Study 1, n = 583–584 for men and n = 1,038–1,040 for women. In Study 2, n = 110–111 for gay men and n = 57–58 for lesbian women. Correlations above the diagonal are for men, and those below the diagonal are for women. *p < .1, **p < .05, ***p < .01, ****p < .001.

Study 2 extended these results by assessing samples of gay men and lesbian women.

STUDY 2

Method
Most of the gay and lesbian participants in Study 2 were volunteers from gay and lesbian clubs, political organizations, and student organizations in southern California (see Lippa, 2000, Study 2). Fifteen gay men and 11 lesbian women from Study 1 served as additional participants. Of the 111 gay men in Study 2 (median age = 31), 57% were White, 27% were Asian, 11% were Hispanic, and the remainder fell into other categories. Of the 58 lesbian women in Study 3 (median age = 36), 70% were White, 12% were Hispanic, 7% were Asian, and the remainder fell into other categories. Participants completed an anonymous questionnaire that included the items described in Study 1.

Results and Discussion
The bottom panel of Table 2 presents findings for gay men (above the diagonal) and for lesbian women (below the diagonal). Gay men's sex drive was significantly associated with their attraction to men, but not with their attraction to women, and the difference between these correlations was significant, t(107) = 2.58, p < .05. In contrast, lesbian women's sex drive tended to be positively correlated with their attraction to both men and women, and the magnitude of these correlations did not differ significantly, t(54) = -0.43, n.s. The correlation between sex drive and other-sex attraction was positive for lesbian women and negative for gay men; however, these correlations did not differ (Z = 1.50, n.s.). Correlations between sex drive and same-sex attraction and correlations between same-sex and other-sex attraction also did not differ significantly between lesbian women and gay men.
On average, gay men reported having higher levels of sex drive than lesbian women did, \( t(167) = 5.16, p < .0001, d = 0.84 \), and lesbian women’s self-reported sex drive was significantly more variable than gay men’s, \( F(1, 167) = 19.93, p < .0001 \) (Levene’s test of equality for variances). (See Table 1.)

Overall, the results of Study 2 showed that gay men’s sex drive correlated with their attraction to men, but not with their attraction to women. However, the correlations between sex drive and same-sex attraction and between sex drive and other-sex attraction did not differ for lesbian women. One limitation of Studies 1 and 2 is that they employed single-item measures of sex drive, attraction to men, and attraction to women. To address this problem, Study 3 employed more reliable, multi-item measures.

**STUDY 3**

**Method**

Participants in Study 3 were 1,767 individuals (687 men and 1,080 women) who participated in an Internet survey on “sexual attitudes and interests” between June 16, 2003, and November 16, 2004. Fifty-eight percent of participants were White, 17% were Hispanic, 13% were Asian, and the remainder fell into other categories. The participants’ median age was 20. Most participants were CSUF psychology students who completed the survey for subject-participation credit. However, 28% of survey respondents were not from California, indicating that there were also many non-CSUF participants. Forty-one participants (2.3% of the total sample) were excluded from analyses because they indicated on the survey that they had not answered questions honestly.

The Internet survey included a “sexual attitudes and feelings” scale, the Sexual Desire Inventory (Spector, Carey, & Steinberg, 1996), and questions about demographic information and participants’ sexual orientation. The Sexual Desire Inventory includes a subscale assessing “dyadic sexual desire” (i.e., sex drive directed toward partners); scores on this subscale were used for the analyses presented here. The 34-item “sexual attitudes and feelings” scale included additional items assessing sex drive, as well as items that assessed attraction to men and attraction to women. A principal components analysis with varimax rotation identified subsets of these 34 items that tapped attraction to men, attraction to women, and sex drive (scale items are listed in Table 3).

**Results and Discussion**

Reliabilities (Cronbach’s alpha) were computed for all scales—for all participants, men, and women. All alphas exceeded .80, except for the 5-item drive scale (see Table 3), computed for men (\( \alpha = .73 \)). Because the two self-report sex-drive scales (the dyadic sexual-desire subscale and the 5-item scale presented in Table 3) were substantially correlated (\( r = .70, p < .001 \)), participants’ scores on these two sex-drive scales were converted to Z scores and averaged to form one composite sex-drive score (\( \alpha = .82 \)).

### Table 3

**Items Included in the Sex-Drive, Attraction-to-Men, and Attraction-to-Women Scales Used in Study 3**

<table>
<thead>
<tr>
<th>Sex drive</th>
<th>Attraction to men</th>
<th>Attraction to women</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have a strong sex drive.</td>
<td>I am sexually attracted to men more than women.</td>
<td>I am sexually attracted to women more than men.</td>
</tr>
<tr>
<td>I frequently think about sex.</td>
<td>I am romantically attracted to men.</td>
<td>I am romantically attracted to women.</td>
</tr>
<tr>
<td>It doesn’t take much to get me sexually excited.</td>
<td>I fantasize a lot about having sex with men.</td>
<td>I fantasize a lot about having sex with women.</td>
</tr>
<tr>
<td>I think about sex almost every day.</td>
<td>I am sexually attracted to men more than women.</td>
<td>I am sexually attracted to women more than men.</td>
</tr>
<tr>
<td>Sexual pleasure is the most intense pleasure a person can have.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. These items come from the “sexual attitudes and feelings” scale. Participants rated their degree of disagreement or agreement with the items on a 7-point scale that ranged from strongly disagree to strongly agree.

Table 1 presents means and standard deviations for the measures of sex drive, attraction to men, and attraction to women, separately for heterosexual men and women and for gay men and lesbians. Table 4 presents intercorrelations of self-reported sex drive, attraction to men, and attraction to women, both for men (above the diagonal) and for women (below the diagonal).

Once again, heterosexual men’s sex drive was significantly associated with their attraction to women, but not with their attraction to men, and the difference between these correlations was significant, \( t(579) = -8.34, p < .0001 \). In contrast, heterosexual women’s sex drive was positively correlated with both their attraction to men and their attraction to women. However, the first correlation was slightly larger than the second, \( t(934) = 3.85, p = .06 \). The correlation between heterosexual men’s sex drive and their other-sex attraction was stronger than the corresponding
Sex Drive and Sexual Attraction

TABLE 4
Inter correlations of Multi - Item Measures of Sex Drive, Attraction to Men, and Attraction to Women in Study 3

<table>
<thead>
<tr>
<th>Measure</th>
<th>Heterosexual men and women</th>
<th>Gay men and lesbian women</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sex drive</td>
<td>Attraction to men</td>
</tr>
<tr>
<td></td>
<td>r</td>
<td>rho</td>
</tr>
<tr>
<td>Sex drive</td>
<td></td>
<td>—</td>
</tr>
<tr>
<td>Attraction to men</td>
<td>.32***</td>
<td></td>
</tr>
<tr>
<td>Attraction to women</td>
<td>.30***</td>
<td>.20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sex drive</td>
<td>Attraction to men</td>
</tr>
<tr>
<td></td>
<td></td>
<td>−.09</td>
</tr>
<tr>
<td>Attraction to men</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attraction to women</td>
<td>.62***</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. n = 582 for heterosexual men, n = 937 - 938 for heterosexual women, n = 48 for gay men, and n = 45 for lesbian women. Correlations above the diagonals are for men, and those below the diagonals are for women.

*p < .05, **p < .01, ***p < .001.

correlation for women (Z = 2.17, p < .05). In contrast, the correlation between heterosexual women’s sex drive and their same-sex attraction was much stronger than the corresponding correlation for men (Z = −5.56, p < .0001). Finally, the negative correlation between attraction to men and attraction to women did not differ between heterosexual men and women (Z = −0.37, n.s., for Pearson rs and Z = 1.38, n.s., for Spearman rhos).

The bottom panel of Table 4 shows that gay men’s sex drive was significantly associated with their attraction to men, but was negatively associated with their attraction to women, and these two correlations differed significantly, t(45) = 2.51, p < .05. Lesbian women’s sex drive was positively correlated with their attraction to women, but not with their attraction to men, and these two correlations also differed significantly, t(42) = −3.78, p < .001. Correlations between same-sex and other-sex attraction did not differ significantly for lesbian women and gay men.

On average, heterosexual men reported having substantially higher levels of sex drive than heterosexual women did, t(1518) = 15.60, p < .0001, d = 0.82. Heterosexual women’s levels of sex drive were again significantly more variable than heterosexual men’s, F(1, 1518) = 29.51, p < .0001 (Levene’s test of equality for variances). Gay men and lesbian women did not differ on sex drive, t(93) = 1.24, n.s.; however, lesbians’ levels of sex drive were more variable than gay men’s, F(1, 93) = 4.48, p < .05 (Levene’s test of equality for variances).

Figure 1 presents scatter plots, for all men (top panel) and for all women (bottom panel), that place individuals in the two-dimensional space defined by their degree of attraction to men and their degree of attraction to women. Visual inspection of these plots suggests that women were more evenly spread between the two most populated poles (high attraction to women and low attraction to men at the upper left corner, and low attraction to women and high attraction to men at the lower right corner). This sex difference was quantified by computing each participant’s euclidean distance from the midpoint of the space. All men and all women differed substantially on this measure (M = 3.72 for men and 2.53 for women), t(1708) = 32.44, p < .0001, d = 1.61, as did heterosexual men and women specifically (M = 3.79 for heterosexual males and 2.53 for heterosexual females), t(1517) = 34.44, p < .0001, d = 1.82. However, homosexual men and women differed only slightly in their distance from the midpoint (M = 3.49 for gay males and 3.26 for lesbians), t(93) = 1.45, one-tailed p = .08, d = 0.30.

The absolute value of the difference between an individual’s attraction to men and his or her attraction to women served as another measure of the bipolarity of same-sex and other-sex attraction. All men and all women differed substantially on this measure, t(1708) = 30.32, p < .0001, d = 1.51, as did heterosexual men and women specifically, t(1517) = 32.89, p < .0001, d = 1.74. However, homosexual men and women differed only slightly, t(93) = 1.55, one-tailed p = .06, d = 0.32.

Men’s sex drive correlated significantly with the absolute difference between their attraction to men and their attraction to women (all men: r = .28, p < .001; heterosexual men: r = .35, p < .001; gay men: r = .42, p < .01). Thus, for men, higher sex drive was associated with greater polarization of same-sex and other-sex attractions. In general, women’s sex drive did not correlate with their absolute difference scores (all women: r = −.01, n.s.; heterosexual women: r = .01, n.s.). However, lesbian women’s sex drive did correlate with their absolute difference scores (r = .43, p < .01). Thus, for most women, higher sex drive was not associated with greater polarization of same-sex and other-sex attraction, but lesbian women provided an exception to this pattern.

In summary, the results for heterosexual participants in Study 3 replicated the findings of Study 1, and the results for gay men in Study 3 replicated the findings of Study 2. However, the data for lesbians in Study 3 suggested more strongly than results from Study 2 that lesbian women had the male-typical pattern: Higher sex drive was associated with their dominant (same-sex) sexual attraction, but not with their nondominant (other-sex) sexual attraction. Finally, Study 3 provided strong evidence that men’s
same-sex and other-sex attractions were organized in a more bipolar fashion than women’s same-sex and other-sex attractions were. Furthermore, high sex drive was associated with greater polarization of same-sex and other-sex attraction for all men, heterosexual men, gay men, and lesbian women, but there was no association between sex drive and polarization of same-sex and other-sex attraction for all women or for heterosexual women.

**GENERAL DISCUSSION**

Studies 1 and 3 showed that, for heterosexual men, sex drive correlated with attraction to women, but not with attraction to men. For heterosexual women, in contrast, sex drive correlated with both attraction to women and attraction to men. Thus, for heterosexual women, sex drive seems to act as a generalized energizer of sexual attractions to both women and men. For heterosexual men, in contrast, sex drive seems to energize only dominant attractions. In addition, all three studies corroborated previous findings that there are significant sex differences in sex drive (Baumeister, Catanesse, & Vohs, 2001).

In Studies 2 and 3, the pattern for gay men was the converse of that for heterosexual men—gay men’s sex drive was correlated with attraction to men, but not with attraction to women. Thus, gay men showed the male-typical pattern—that sex drive energizes dominant, but not nondominant attractions. However, what constituted dominant and nondominant attraction was reversed for gay and heterosexual men.

Lesbian women were the one group that showed somewhat inconsistent results. In both Studies 2 and 3, there was evidence that higher sex drive was associated with greater attraction to women among lesbians. In Study 2, the correlations between lesbians’ self-reported sex drive and attraction to men were nonsignificant but positive, whereas in Study 3, the corresponding correlations were nonsignificant but negative. In Study 3, lesbian women strongly showed the male-typical pattern of heterosexual and gay men—higher sex drive was associated with their dominant attraction, but not with their nondominant attraction. One possible explanation for these differences across studies is that some subgroups of lesbians (e.g., “butch” lesbians) show more male-typical traits than others (see Singh, Vidaurre, Zambarano, & Dabbs, 1999), and Studies 2 and 3 may have sampled somewhat different lesbian subpopulations.

In general, the current results show that for most women (with the possible exception of lesbian women), high sex drive is associated with increased sexual attraction to both men and women. For men, however, high sex drive is associated with increased sexual attraction to only one sex or the other, depending on the individual’s sexual orientation. These findings are consistent with the hypothesis that sexual orientation is organized differently in women and men. Indeed, the current data provide new evidence that men’s same-sex and other-sex attractions are much more polarized than women’s. Furthermore, among men, higher sex drive is associated with greater polarization of same-sex and other-sex attractions. However, most women (again, with the possible exception of lesbian women) do not show this pattern.

The current research suggests that classic drive theories may be usefully applied to the study of sex drive and sexual orientation. Future research can investigate the degree to which the current findings apply to other populations (e.g., to other age groups, to participants from other countries and cultures) and to physiological as well as to self-report measures of sexual attraction. In addition, experimental studies can investigate whether independent variables that influence sex drive (e.g., manipulated testosterone levels, exposure to erotic stimuli)
affect same-sex and other-sex attractions differently in men and women.

REFERENCES


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