

Does Size Matter? Men's and Women's Views on Penis Size Across the Lifespan

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The media equate a man's penis size with his power and masculinity. Views about penis size were assessed in an Internet survey of 52,031 heterosexual men and women. Most men (66%) rated their penis as average, 22% as large, and 12% as small. Self-reported penis size was correlated positively with height and negatively with body fat level. Whereas 85% of women were satisfied with their partner's penis size, only 55% of men were satisfied with their penis size, 45% wanted to be larger, and 0.2% wanted to be smaller. Satisfaction did not vary across age groups from 18 to 65. Men reporting a larger-than-average penis rated their appearance most favorably, suggesting a possible confidence effect of perceived large penis size.

Keywords: body image, body mass index, age, penis size satisfaction, penis size

Urologists and psychotherapists often encounter patients who complain about the length of their penis, but these patients are usually well within the typical range for penis size. Many patients also worry that their romantic partner may not be satisfied with their penis size (Alter,

1995; van Driel, Weijmar Schultz, van De Wiel, & Mensink, 1998), perhaps because men consider the size of their penis to be an important feature of their sexual prowess (Francken, van de Wiel, van Driel, & Weijmar Schultz, 2002). Men's concerns about penis size are fueled by cultural messages equating penis size with masculinity. Kilmartin (2000, pp. 215–216) observed, "Real men are . . . described as having huge penises. . . . In fact, the penis is sometimes described as 'his manhood.'"

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Those interested in a parallel paper on breast satisfaction among women in this sample (Frederick, Peplau, & Lever, 2005a) and in additional papers on body image from this and other projects should contact David Frederick. We thank *Elle* magazine for access to the data from the Elle.com/MSNBC.com Sex and Body Image Survey. We are grateful to the UCLA Graduate Division; the Center for Culture, Brain, and Development; the Department of Psychology; and the Communication Studies Program for providing financial support for David Frederick. We would also like to thank Sheila Allameh, Anna Berezovskaya, Monica Birnbaum, Iva Boteva, Lesley Bulechek, Lisa Burkland, Jeremy Casey, David Creswell, Erika Forster, Martie Haselton, Johanna Jarcho, Kathleen Lambert, Henry Madrid, Traci Mann, Tara Mulrenan, Leila Sadeghi-Azar, Janet Tomiyama, Andrew Ward, and Erika Westling for their assistance with this database and the manuscript of this article. We are grateful to Carol Edwards, who helped to create the database.

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Popular media, especially TV and men's magazines, frequently emphasize the connection between penis size and masculinity (Lehman, 1993). Pornographic movies, magazines, and Web sites featuring men with very large penises also reinforce the cultural message associating large penis size and masculinity. Women's exaggerated sexual responses to overly endowed men in these pornographic images may also convince men that women have strong preferences for large penises. Most men are aware that the penises in these pornographic images are atypically large, but persistent exposure to these images may cause men to overestimate the average penis size and underestimate the size of their own penis.

Men's worries about their personal inadequacies have created a large market for penis enlargement products and procedures. A recent issue of *For Him Magazine* featured separate

full-page ads for three different penis enlargement pills: Argionic Desire (2005), Magna-RX (2005), and Pro+Plus (2005). These advertisements promised an increase in penis size of up to 5 in. over a 60-day period. The ads also included testimonials that reinforce men's belief that women are more sexually satisfied by larger penises: "I'm [now] 8 in. and much thicker. My girlfriend wants it all the time" (Pro+Plus, 2005, p. 131).

Instead of taking pills, some men purchase weight systems, stretching devices, vacuum pumps, or even silicone injections in an attempt to lengthen their penis (Templer, 2002). Some men who seek more dramatic results undergo penile enlargement surgery. Advertisements for surgical enlargement of the penis are featured in the sports sections of major newspapers such as the *Los Angeles Times* and include captions like "Size Matters" (Beverly Hills Surgical, 2005) and "Bigger is Better" (Total Life Enhancement, 2005a). These ads promise men great benefits to pursuing surgery, such as increased confidence and desirability to women. Advertisers' Web sites feature before-and-after surgery photos and testimonials, including some from women. Illustrative is the letter from "D.T.," who wrote,

I was satisfied with our lovemaking . . . However, my husband did not like the size of his penis . . . Since his surgery, he has more confidence. And, to my surprise, I have been overwhelmed with the difference in our sex life. His increased length, and especially his added thickness have satisfied me more than I ever dreamed possible. (Total Life Enhancement, 2005b)

The flourishing penis enlargement industry indicates that at least some men worry enough about penis size to spend money on costly products and on potentially risky surgery to boost their self-confidence. However, little is known about how many men have such concerns and whether women do attach importance to penis size.

Research on Actual Penis Size and Other Physical Characteristics

Available research on penis size has typically focused on determining human variation in actual penis length. Summarizing results from 25 sources, Templer (2002) concluded that the typical penis was approximately 3.5 in. (8.9 cm) long when flaccid and 6 in. (15.2

cm) long when erect. Measurements made by sex researchers, however, tend to be significantly smaller than self-reports by male respondents. In two carefully controlled studies, penis size was measured by researchers after men self-stimulated themselves and/or ingested pharmaceutical drugs to induce erections (Senegazer et al., 2002; Wessells, Lue, & McAninch, 1996). Combining the means and standard deviations reported by these researchers, we calculated that the mean erect penis length was 5.3 in. (13.5 cm), with 68% of men measuring between 4.6 and 6.0 in. (11.7 cm and 15.2 cm), 13.5% between 3.8 and 4.5 in. (9.7 cm and 11.4 cm), and 13.5% between 6.1 and 6.8 in. (15.5 cm and 17.3 cm); only about 2.5% of men possessed a penis over 6.9 in. (17.5 cm) long, and 2.5% were under 3.7 in. (9.4 cm) long.

Folk beliefs suggest that penis size is related to other physical traits, such as foot size, hand size, height, and weight (Paley, 1999). Past research with sizable samples has found penis size to be correlated positively with height (Edwards, 1998; Ponchietti et al., 2001) and negatively with weight (Ponchietti et al., 2001), but in one small-scale study (Schneider et al., 2001) it was found to be unrelated to age.

Research on Men's Attitudes Toward Penis Size

From a psychological perspective, however, the crucial issue may not be actual penis size but rather a man's perception of the size of his penis relative to other men's. Very few empirical studies have assessed the association between men's beliefs about their penis size and satisfaction with their penis or psychological well-being. A small survey (Lee, 1996) of 112 college men found that most men viewed their penises as average (69%), but the rest of the men were more likely to believe they were smaller (26%) rather than larger than average (5%). A similar pattern of results was found in a small survey of 123 young men in the Korean military (Son, Lee, Huh, Kim, & Paick, 2003), suggesting that in contrast to the normal distribution of actual penis size discussed above, some young men underestimate the size of their penis.

There have been a few studies attempting to relate penis size to satisfaction. A study by

Edwards (1998) found that only 10% of men who rated their penis as “modest” were content with their penis size, compared with 40% of the average-sized men and 70% of the “endowed” men. However, these findings were based on the responses of men (mean age = 30 years) who chose to participate in a survey posted on Edwards’s www.sizesurvey.com Web site, and thus may reflect only the views of men particularly interested in the question of penis size. A recent study of undergraduate Canadian men examined men’s concerns with their erect, flaccid, and overall penis size (Morrison, Bearden, Ellis, & Harriman, 2005). This study found that most men were more likely to be satisfied with their erect penis size (83%) and overall penis size (71%) than with their flaccid penis size (51%). However, the majority of participants completed the survey in a mass testing situation, which may have created social desirability pressures against reporting dissatisfaction with penis size. Interestingly, the authors also found that men’s global satisfaction with their genitals (e.g., size, shape, coloration, testicles) was linked to increased body satisfaction (Morrison et al., 2005).

Research on Women’s Attitudes About Penis Size

With all this emphasis on the importance of penis size to men, the voices of women have been neglected. One study (Fisher, Branscombe, & Lemery, 1983) found that self-reported sexual arousal did not differ among college women who read a vignette about sexual activity with a man whose penis was described as being 3, 5, or 8 in. long. Needless to say, however, textual descriptions likely have less influence on arousal than visual images or real-life encounters. In another study (Franken, van de Wiel, van Driel, & Weijmar Schultz, 2002, 174) women (mean age = 30 years) were asked about the importance of two aspects of penis size: length and girth. Only 21% rated length as important, whereas 33% rated girth as important. Absent from past research is information about how women perceive their partner’s penis size and whether they are satisfied with the size of their partner’s penis. If the vast majority of women are satisfied with their partner’s penis size, then many men may be worrying needlessly about the size of their penis.

Goals of Present Study

A recent large-scale survey about body image among more than 50,000 heterosexual men and women, ages 18–65, provided an opportunity to examine men’s perceptions of their own penis as well as women’s perceptions of their partner’s penis. Our analyses had four main goals.

1. *Self-reported penis size and penis size satisfaction.* The first goal of this study was to assess how men view their penis size in a larger and diverse sample of adults. Second, we examined how self-reported penis size relates to penis size satisfaction. We predicted that men who rate their penis as small would be less satisfied with their penis size than men reporting an average penis, and that men who reported an average penis would be less satisfied than those reporting a large penis. We also investigated how three other physical attributes—height, body fat level, and age—related to men’s beliefs about their penis size. Consistent with past research, we hypothesized that taller and thinner men would be more likely to report a larger penis size, but that there would be no age differences in reported penis size.

2. *Men’s attitudes toward penis size and body exposure concerns.* A second goal was to investigate how negative attitudes about penis size might relate to self-consciousness during sexual activity. Do men’s concerns with penis size relate to their comfort with exposing their bodies to a romantic partner? We hypothesized that men who reported a small penis and men who were not satisfied with their penis size would be less willing to undress in front of their partners and more likely hide their penis from their partners during sexual activity.

3. *Penis size and overall body satisfaction.* If men believe that a large penis is the cultural ideal, self-perceived penis size may relate to men’s perception of their general physical attractiveness. Men with a larger-than-average penis may experience a confidence effect that might lead them to rate their body more positively, not only on general measures of body image but also on attributes such as facial attractiveness that are seemingly unrelated to penis size. Conversely, men with a small penis may experience an insecurity effect that might lead them to rate their body and face less favorably. Thus, we predicted that men reporting a

larger-than-average penis size would rate themselves most positively on body image and facial attractiveness.

4. *Women's satisfaction with their partner's penis size.* A final goal was to provide a careful examination of women's perceptions of their partner's penis size among a large sample of women of differing ages. In addition, past research has not examined how women's assessment of their partner's penis size is related to their satisfaction with their partner's penis size. Consistent with prior research, we predicted that women would report being satisfied with their partner's penis size whether they considered it to be average or larger than average; however, in contrast to the vignette study finding that men with small penises were as arousing as men with average or large penises (Fisher et al., 1983), we predicted that women who consider their partner to be smaller than average would be dissatisfied with their partner's penis size.

Method

A brief 27-item survey was posted on the MSNBC.com and Elle.com Web sites in February 2003. Participants were visitors who volunteered for a Sex and Body Image Survey. To prevent 1 individual from responding to the survey multiple times, a computer program prevented multiple responses from any given computer. Basic findings from the survey were reported in *Elle* magazine (Lever, 2003), which commissioned the study. The present study is based on secondary and more detailed analyses of this large dataset.

Participants

Most respondents (98%) were from the MSNBC.com Web site; only 2% were from the Elle.com Web site. Because this analysis of the Elle.com and MSNBC.com data focused on men's attitudes toward their own penises and women's attitudes toward their male partner's penis, we excluded from our analyses heterosexual individuals who did not answer questions relating to penis size (0.8% of total sample). We also excluded lesbian participants (1.2% of total sample) for whom penis questions were not applicable and gay male participants (2.8% of total sample) because the word-

ing of the penis size question precluded us from determining whether gay men were indicating their attitudes about their own penis size or about their partner's penis size. The analyzed sample consisted of 25,594 heterosexual men and 26,437 heterosexual women between the ages of 18 to 65, weighing 90 to 295 pounds, with body mass index scores ranging from 14.5 to 40.5 and heights ranging from 63 in. to 74 in. (152.4 cm to 188 cm) for women and 62 in. to 78 in. (157.5 cm to 198.1 cm) for men. Individuals outside of these ranges were excluded because of small sample sizes. For more details regarding the sample, refer to Frederick, Peplau, and Lever (2005b).

Physical Characteristics

Age. The mean age of participants was 33.5 years ($SD = 10.9$) for women and 36.9 years ($SD = 11.8$) for men. Women and men were fairly well represented across the age spectrum, and for some analyses, five age groups were created: 18–25, 26–35, 36–45, 46–55, and 56–65. The percentages of men and women in each category were, respectively, 18–25, 20% and 29%; 26–35, 30% and 32%; 36–45, 24% and 22%; 46–55, 18% and 14%; and 56–65, 8% and 3%.

Height. The mean self-reported height in inches was 65.1 in. (165.3 cm; $SD = 2.7$ in. [6.9 cm]) for women and 70.7 in. (179.6 cm; $SD = 2.8$ in. [7.1 cm]) for men. The men and women in this sample were about an inch taller than the national data provided by the National Center for Health Statistics (2004). This difference may reflect actual differences in height between the samples, or it may reflect the fact that some participants in our sample may have exaggerated slightly when self-reporting their own height. Height groups were created for men. These groups were very short (62 in.–64 in. [157.5 cm–162.6 cm]), short (65 in.–68 in. [165.1 cm–172.7 cm]), average (69 in.–71 in. [175.3 cm–180.3 cm]), tall (72 in.–75 in. [182.9 cm–190.5 cm]), and very tall (76 in.–78 in. [193.0 cm–198.1 cm]). These categories were chosen to facilitate data presentation related to height while still maintaining a relatively normal distribution across the five groups. The percentage of men in each category was as follows: very short, 1%; short, 20%; average, 39%; tall, 36%; and very tall, 4%.

Body mass index (BMI). BMI is a standard measure used to estimate an individual's level of body fat. It is calculated by dividing a person's weight in kilograms by his or her squared height in meters (National Health & Nutrition Examination Survey, 2000). A BMI score was computed for each respondent. The mean BMI of participants was 26.6 ($SD = 4.0$) for men and 24.2 ($SD = 4.8$) for women. The men in our sample had BMI scores comparable to those from a large-scale study by the National Center for Health Statistics (2004). Women in our sample were thinner than the average U.S. woman (BMI of 24.2 vs. 26.5). Standard BMI levels described in the National Health and Nutrition Examination Survey (2000) were used to create four categories: underweight (BMI of 14.5–18.49), healthy weight (18.5–24.99), overweight (25–29.99), and obese (30–40.5).

Psychological Measures

Penis size. Self-perceived penis size was assessed with the item "Do you consider the size of your own penis OR that of your partner's to be. . ." with the answer choices being small ("smaller than average"), average ("average"), or large ("larger than average").

Satisfaction with penis size. Satisfaction with penis size was assessed with the item "Are you satisfied with the size of your own penis OR that of your partner's" with the response options being smaller ("no, I wish it were smaller"), satisfied ("yes, very satisfied"), or larger ("no, I wish it were bigger").

Body exposure concerns. Respondents were asked about their possible concerns with showing their body to a romantic partner. Individuals without a partner were instructed to answer the questions thinking about the last partner they had. One question asked, "Do you undress in front of your partner?" with the response options being yes or no. Most men (92%) reported undressing in front of their partner. Another question asked, "Do you ever try to hide a least favorite physical feature during sex? Select all that apply." One of the six response options was "yes, my genitals." This response was selected by 3.5% of men.

Body image: Self-rated attractiveness. As a general measure of perceived attractiveness, one item asked, "How do you feel about your body?" The four response options were "I have

a great body" (4), "I have a good body" (3), "My body is just okay" (2), and "I find my body unattractive" (1). The percentage of men responding in each category was as follows: great, 7%; good, 47%; okay, 36%; and unattractive, 11%. This one-item measure of body image was strongly correlated ($ps < .05$) with the widely used seven-item Appearance Evaluation scale (Cash, 2000) for both men ($r = .75$) and women ($r = .75$) in a sample of 153 college men and 313 college women (Frederick, Peplau, & Lever, 2005b). These strong correlations provided confidence in this item as a measure of body satisfaction.

Body image: Comfort in a swimsuit. Body image satisfaction was also assessed with the item "How do you think you look in a swimsuit?" Response options were "Good; I'm proud /not at all embarrassed to be seen in a swimsuit" (3), "Okay; I don't flaunt it but my self-consciousness doesn't keep me from wearing a swimsuit" (2), and "So uncomfortable that I avoid wearing one in public" (1). The percentage of men responding in each category was as follows: good, 25%; okay, 59%; and uncomfortable, 17%. The correlation between the Appearance Evaluation scale in Frederick, Peplau, and Lever (2005b) was .62 for men and .58 for women, providing confidence in this item as a measure of body satisfaction ($ps < .05$).

Face satisfaction. Respondents' satisfaction with their face was assessed with the item "How do you feel about your face?" Response options were "My face is very attractive" (4), "My face is nice/pleasant" (3), "My face is plain" (2), and "My face is unattractive" (1). The percentages of men responding in each category were as follows: very attractive, 14%; nice/pleasant, 65%; plain, 19%; and unattractive, 3%.

Results

We begin by presenting men's self-reported penis size, men's satisfaction with their penis size, and the correlates of these reports. Next, we consider how penis size and satisfaction were associated with comfort with exposing one's body to a sexual partner and, more broadly, with self-ratings of physical attractiveness. Finally, we present findings about women's satisfaction with their partner's penis size. Because our large sample size provided the

power to detect even miniscule effects, we set $p < .001$ as the criteria for determining if a finding was statistically significant, and we paid close attention to the actual pattern of means regardless of statistical significance. Furthermore, we report effect sizes for comparisons of interest.

Correlates of Self-Reported Penis Size and Penis Size Satisfaction

How did men in our sample assess the size of their penis? As shown in Table 1, the majority of men (66%) characterized their own penis size as average. This is similar to the findings reported by Lee (1996) for American college men and by Son et al. (2003) for young Korean adults. In our sample, only 12% of men viewed their penises as small and 22% viewed them as large. This finding departs from the two earlier studies, which found a greater proportion of men reporting small rather than large penises.

Table 2 presents data on men's satisfaction with their penis size. Overall, 55% of men reported being very satisfied with their penis size, but a substantial minority were dissatisfied. For many men, being average wasn't good enough. Among men who rated their penis size as average, 46% wanted to be larger. This desire was widespread among men who rated their penises

as small (91%) and uncommon among men who rated their penises as large (14%). Fully 86% of men who rated themselves as large were satisfied with their penis size, compared with only 54% of men who rated themselves as average and 8% of men who rated themselves as small.

Height. We predicted that taller men would be more likely to report a large penis size than shorter men, a pattern that is shown in Table 1. Self-reported penis size and height were significantly correlated. This correlation was small, however, possibly because most men rated their penis as average in size and there was considerable variability in height among this average-size group. As shown in Table 1, the taller groups of men (tall and very tall) were two to three times more likely to report having a large penis than were the shorter groups of men (short and very short). To examine this pattern further, the percentage of men reporting a large penis was calculated for every height from 62 in. to 78 in. The same was also done for the percentage reporting a small penis. As shown in Figure 1, the percentage of men who reported a large penis size increased steadily as height increased, while the opposite was true for men reporting a small penis size. This suggests that although the overall correlation between height and penis size was low, height is a good pre-

Table 1
Association of Men's Physical Characteristics to Self-Reported Penis Size

Physical characteristic	Penis size			<i>r</i>
	% small	% average	% large	
Overall	12	66	22	
Height				.15
62 in.–64 in. (very short)	22	66	12	
65 in.–68 in. (short)	16	69	15	
69 in.–71 in. (average)	12	68	20	
72 in.–75 in. (tall)	10	64	26	
76 in.–78 in. (very tall)	7	57	36	
Body mass index				.11
14.5–18.5 (underweight)	11	68	21	
18.5–24.9 (healthy)	9	67	24	
25.0–29.9 (overweight)	11	67	22	
30.0–40.5 (obese)	19	65	16	
Age				.08
18–25	11	65	24	
26–35	11	64	26	
36–45	11	67	22	
46–55	13	68	19	
56–65	16	70	14	

Table 2
Association of Men's Physical Characteristics to Satisfaction With Their Penis Size

Physical characteristic	Penis size satisfaction		
	% very satisfied	% desire larger	% desire smaller
Overall	55	45	0.2
Penis size			
Large	86	14	0.6
Average	54	46	0.1
Small	8	91	0.3
Height			
62 in.–64 in. (very short)	52	48	0.3
65 in.–68 in. (short)	52	48	0.3
69 in.–71 in. (average)	54	46	0.2
72 in.–75 in. (tall)	58	42	0.3
76 in.–78 in. (very tall)	62	38	0.3
Body mass index			
14.5–18.5 (underweight)	62	37	1.0
18.5–24.9 (healthy)	60	40	0.3
25.0–29.9 (overweight)	55	44	0.2
30.0–40.5 (obese)	45	55	0.1
Age			
18–25	54	46	0.2
26–35	55	45	0.3
36–45	55	45	0.4
46–55	58	42	0.1
56–65	57	43	0.1

dictor of whether a man believes that his penis is large versus small.

We predicted that satisfaction with penis size would also be related to height. Data in Table 2 support this prediction. Shorter men were less likely to be satisfied with their penis size than taller men, perhaps because shorter men were more likely to view their penis as smaller than average.

Body fat level. Men with high BMI scores may be more likely to report a small penis because additional fat in the pubic region reduces the percentage of the penis that extends outside of the body. We predicted that thinner individuals would be more likely to report a large penis than heavier individuals. The correlation between BMI and self-reported penis size was statistically significant but small. As shown in Table 1, obese men were nearly twice as likely to report a small penis as other groups of men. Interestingly, men in the healthy weight range were most likely to report a large penis size and least likely to report a small penis size. To examine this pattern further, the percentages of men reporting a large, average, or small penis

were calculated for every BMI score from 15 to 40. Figure 2 shows that with minor exceptions among the extreme weight groups, the percentage of men who reported a large penis decreased steadily as body fat level increased, whereas the percentage of men reporting a small penis increased with body fat level. The percentage of men reporting an average-size penis showed less variability across body fat levels. This suggests that although the overall correlation between body fat level and penis size was low, body fat level is a good predictor of when a man rates his penis as small versus large.

We predicted that satisfaction with penis size would also be related to body fat level. As shown in Table 2, heavier men were less likely to be satisfied with their penis size than thinner men, perhaps because heavier men were more likely to view their penises as smaller than average.

Age. We examined whether age was related to self-reported penis size or to satisfaction with penis size. Self-reported penis size was significantly correlated with age, but the association was very small. As shown in Table 1, older men

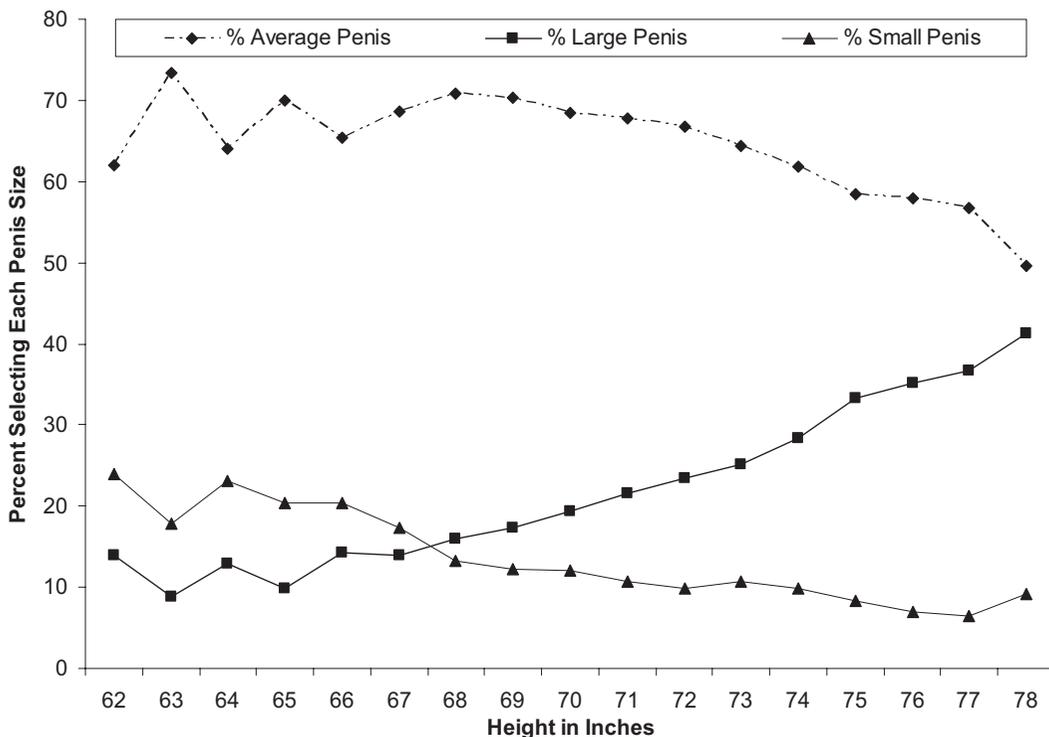


Figure 1. Association of men's self-reported penis size to height.

were more likely than younger men to report that their penis size was average or small and less likely to report that their penis size was large. Penis size satisfaction, however, did not vary as a function of age. The percentage of men reporting satisfaction with their penis size (54%–58%) and the percentage who desired a larger penis (42%–46%) were similar across age groups. Thus, older men were no different from younger men in their desire to have a larger penis.

Men's Attitudes Toward Penis Size and Body Exposure Concerns

We predicted that men who rated their penis as small would be less willing to expose their body to a romantic partner. Survey items asked about undressing in front of one's partner and hiding a body part during sex. Men reporting a small penis size were less likely to undress in front of their partner (15%) than were men

reporting an average (8%) or large penis size (6%). Furthermore, men who reported a small penis size were more likely to hide their penis during sex (15%) than men reporting an average (2%) or large penis size (1%).

We also predicted that dissatisfaction with penis size would be associated with greater concerns about body exposure. As expected, hiding one's penis during sexual activity was associated with penis size satisfaction. Only 1% of men who were satisfied with their penis size reported hiding their penis during sex, compared with 11% of men desiring a smaller penis and 7% of men desiring a larger penis. In contrast, however, penis size satisfaction was not associated with willingness to undress in front of a partner. Only 7% of men satisfied with their penis size were unwilling to undress in front of their partner, and only 11% of men who desired a smaller penis and 11% of men who desired a larger penis reported this behavior.

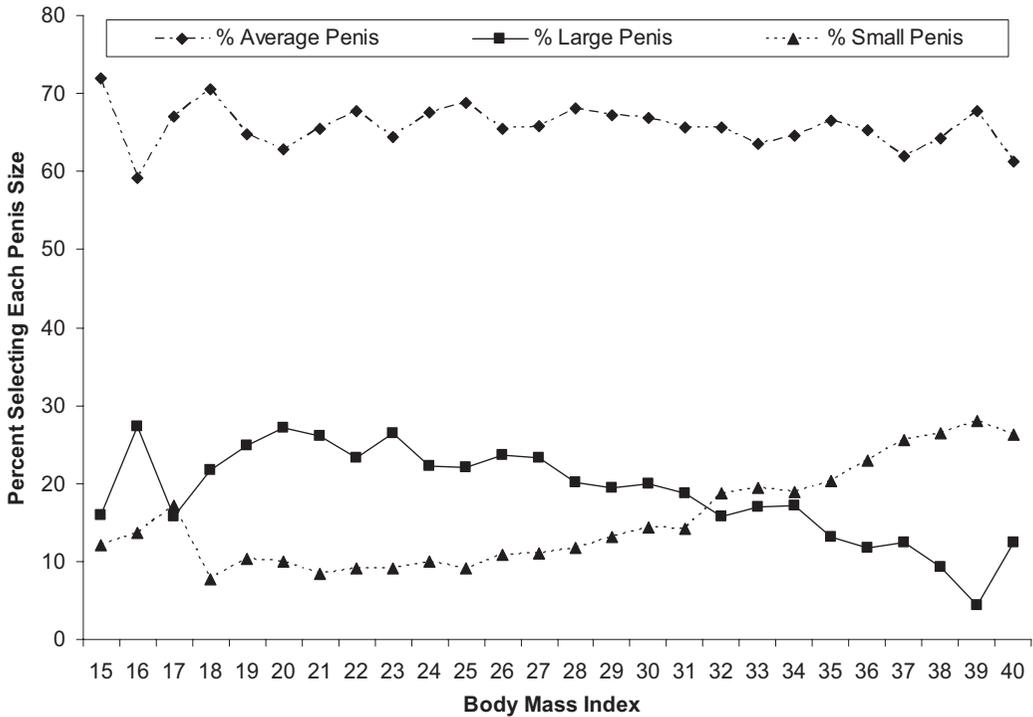


Figure 2. Association of men's self-reported penis size to body mass index.

Penis Size and Overall Body Image Satisfaction

We predicted that there would be an association between men's self-reported penis size and their general assessment of their physical attractiveness. We predicted that men who reported a large penis would have a more favorable overall body image than men who reported a small penis. Two survey items assessed body satisfaction by asking men to rate the attractiveness of their body and their comfort wearing a swimsuit in public. To compare the body image of men differing in self-reported penis size, we conducted two one-way analyses of variance (ANOVAs) with self-rated attractiveness and comfort in a swimsuit as the dependent variables. Because age, BMI, and height had small but statistically significant correlations with self-reported penis size, they were introduced as covariates in the ANOVAs. The marginal means are summarized in Figure 3. As expected, there was a significant main effect of penis size on self-rated body attractiveness, $F(2, 25588) = 684.98, p < .001$, and on comfort in

a swimsuit, $F(2, 25588) = 384.80, p < .001$. The standard errors for each level of the independent variable were small, ranging from .005 to .013, indicating that the means were close approximations of the estimated population means.

Pairwise comparisons were conducted to determine if men who reported a large penis had the most favorable body image and if men who reported a small penis had the worst body image. All pairwise comparisons for both measures of body image were significant at the $p < .001$ level. Cohen's (1988) d scores were calculated to measure the size of the effects. Cohen recommends the following interpretations of effect sizes: $d = .20$ is small, $d = .50$ is moderate, and $d = .80$ is large. As predicted, compared with men reporting an average-sized penis, men who reported a large penis had higher self-ratings on body attractiveness ($d = .34$) and comfort in a swimsuit ($d = .24$). Men who reported a small penis had the worst body image, reporting lower self-ratings of attractiveness ($d = .85$) and swimsuit comfort ($d = .63$).

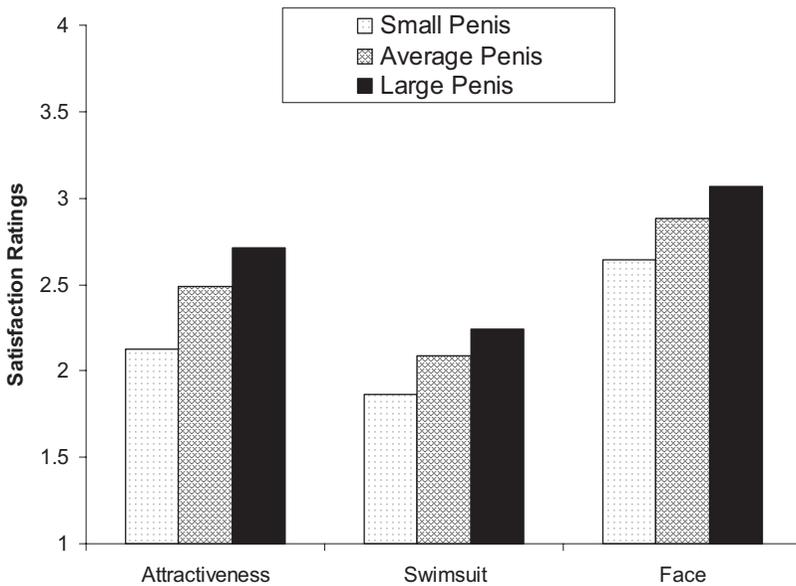


Figure 3. Association of men's self-reported penis size to ratings of body and face satisfaction. Higher numbers represent greater satisfaction.

than men who reporting a large penis. Men who reported a small penis also reported lower self-ratings of attractiveness ($d = .53$) and swimsuit comfort ($d = .36$) than men reporting an average-sized penis.

To examine if the association of penis size and body attractiveness persisted across different levels of body fat, we conducted a 3×4 between-subjects ANOVA with penis size (small, average, or large) and body fat level (underweight, healthy, overweight, or obese) as the independent variables and self-rated attractiveness as the dependent variable. Height and age were entered as covariates. The means are summarized in Figure 4. There were significant main effects of both penis size, $F(2, 25580) = 88.45$, $p < .001$, and body fat level $F(2, 25580) = 836.75$, $p < .001$. A significant interaction, $F(2, 25580) = 4.15$, $p < .001$, was also found. The standard errors for each level of each independent variable ranged from .009 to .054. Across all levels of body fat, men reporting a small penis had poorer body image than other men and men reporting a large penis had more favorable body image. However, an exception to this pattern was found among underweight men, with men who reported an average penis having the most positive body image.

Satisfaction with one's face. Is penis size associated with traits that are seemingly unrelated to penis size, such as greater satisfaction with one's facial appearance? To compare the face satisfaction of men differing in self-reported penis size (small, average, or large), we conducted a one-way ANOVA with height and age entered as covariates. The marginal means are summarized in Figure 3. There was a significant main effect of penis size, $F(2, 25775) = 436.02$, $p < .001$. The standard errors for each level of the independent variable ranged from .005 to .012. Pairwise comparisons were conducted to determine if men who reported a large penis reported the most satisfaction with their faces and if men who reported a small penis reported the least satisfaction with their faces. All pairwise comparisons were significant at the $p < .001$ level. As shown in Figure 3, larger self-reported penis size was associated with higher levels of satisfaction with one's face. As predicted, compared with men reporting an average-sized penis, men who reported a large penis had higher face satisfaction ($d = .28$). Men who reported a small penis had the worst face satisfaction, reporting less satisfaction than men who reported a large penis ($d = .64$). Men who reported a small penis also reported less

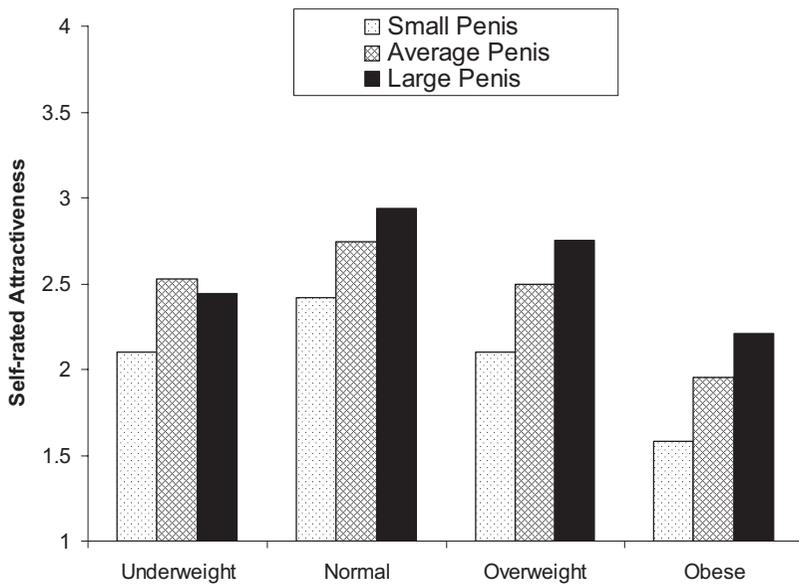


Figure 4. Association of men's self-reported penis size to ratings of self-rated attractiveness across body fat levels. Higher numbers represent greater satisfaction.

face satisfaction than men reporting an average-sized penis ($d = .37$).

In summary, men who rated their penis as large had significantly more positive views about their body and the attractiveness of their face than did other men. In contrast, men who rated their penis as small had the least favorable views about their body and face.

Women's Satisfaction With Their Partner's Penis Size

How do women view their partner's penis size? As shown in Table 3, most women rated their partner's penis size as average (67%), some women viewed their partner's penis size as large (27%), and few women perceived their partner's penis size as small (6%). Turning to satisfaction, most women (84%) were satisfied with their partner's penis size, only 14% wanted their partner to be larger, and 2% wanted their partner to be smaller. A much higher percentage of women were satisfied with their partner's penis size than the percentage of men who were satisfied with their own penis size (84% vs. 55%). For women as for men, there was an association between ratings of penis size and satisfaction with penis size. The vast majority of

women who reported that their partner was average or large were very satisfied with their partner's penis size (86% and 94%, respectively). In contrast, the majority of women (68%) who rated their partner as small wished

Table 3
Women's Attitudes Toward Their Partner's Penis Size

	Report of partner's penis size		
	% small	% average	% large
Overall	6	67	27
Satisfaction with partner's penis size			
	% very satisfied	% desire larger	% desire smaller
Overall	84	14	2
Penis size			
Large	94	1	5.0
Average	86	14	0.5
Small	32	68	0.4
Age			
18–25	86	12	2
26–35	85	13	2
36–45	84	15	1
46–55	82	16	2
56–65	80	18	2

their partner had a larger penis. Fortunately for men, however, only 6% of women rated their partner as smaller than average.

Discussion

Popular lore might suggest that men are universally worried about their penis size. However, in our large and diverse sample, most men viewed their penis as average or large. Only 1 man in 10 rated his penis as small. These findings contrast with the results of two small studies in which a larger percentage of men rated their penis as small. In our sample, most men were satisfied with their penis size. Not surprisingly, satisfaction with penis size was typical of men who viewed their penis as large, common among men who viewed their penis as average, and uncommon among men who viewed their penis as small.

This study provided an opportunity to examine heterosexual women's attitudes about partner's penis size. Most women rated their partner's penis as average or large. Almost all women who viewed their partner as average or large were satisfied with his penis size. The majority of women who judged their partner's penis as small, however, were not satisfied.

Men's reports of their penis size were associated with other physical attributes. In line with past research (e.g., Ponchiatti et al., 2001), men who were taller and men who were thinner were more likely to report a large penis than were men who were shorter or heavier. Similar results were found for satisfaction with penis size: Taller men and thinner men were more likely to report satisfaction with their penis size than were shorter men and heavier men. Older men were also less likely to report a large penis size than younger individuals, but this association was small.

Our study found that many men (45% of the total sample) desired a larger penis, especially those who believed their penis is smaller than average (91%) or average sized (46%). To put this prevalence of dissatisfaction in perspective, this exceeds the percentage of men in our sample who were dissatisfied with their height (38%) or their weight (41%). Our data suggest that dissatisfaction with penis size diminishes only slightly as men age, indicating that the symbolism of having a large penis holds its value across the life span.

As we have demonstrated, men's dissatisfaction with their penises is associated with broader patterns of body image discontent. Men who reported having a large penis also reported greater satisfaction with their body and face and less concern about exposing their body during sexual activity. In contrast, men who reported a small penis reported less satisfaction with their body and face and greater concern about exposing their body to a partner during sexual intercourse. One plausible interpretation of these findings is that penis size affects men's more general views of themselves, creating a confidence effect for men who consider their penis to be large and an insecurity effect for men who consider their penis to be small. However, as these data are correlational in nature, the direction of causality is unclear. It is also possible that men's more general body image influences their estimates of their penis size. Alternatively, a third variable such as self-esteem may be operating (Baumeister & Tice, 2001). Men who have generally positive views of themselves may be more likely to have favorable attitudes about their body and face and also to report a large penis size; conversely, low self-esteem may lead to unfavorable self-ratings of penis, face, and body.

The correlation between penis size and body image found in this study parallels the findings by Morrison et al. (2005), who reported that penis size satisfaction was associated with body satisfaction. These findings suggest that body image researchers, who have not typically addressed the role of penis size as a component of overall body satisfaction, should consider including it and exploring the direction of causality. For example, if poor global body image is caused by penis dissatisfaction or perceived small penis size, then interventions addressing men's concerns with penis size might enhance global body image.

Strengths and Limitations

Limitations of the study must be mentioned. Our findings are based entirely on self-reports of penis size and other physical characteristics. To increase participation rates, the survey was necessarily short and relied on single-item measures of key variables. Furthermore, our measure of penis satisfaction measured only concern with overall size, whereas some past re-

search has indicated that men's concerns with their flaccid penis size differ from their concerns with their erect penis size (Morrison et al., 2005). This survey also did not allow for the examination of men's concerns with other aspects of their genitalia. Insofar as this survey did not include separate measures for girth and length, we assume that women's satisfaction or dissatisfaction was based on a combination of both aspects of penis size.

In addition, although our sample was large, it was not nationally representative. For example, people with higher socioeconomic status tend to be somewhat overrepresented in Internet research, although the distributions are reasonably bell-shaped and include participants from a broad range of backgrounds and geographic locations (Gosling, Vazire, Srivastava, & John, 2004). Furthermore, differences between the demographics of Internet users and non-Internet users have been diminishing over time as Internet use becomes more common, and the percentage of women, minorities, and older individuals using the Internet has increased (Pew Internet & American Life Project, 2005). One limitation of our study is that the survey did not include items pertaining to ethnicity. Given racial stereotypes about ethnic differences in penis size, such data may be important (e.g., Edwards, 1998). For example, how satisfied a person is with his penis size may be influenced by his perception of what is typical for his ethnic group.

Several strengths of the current research are noteworthy. Our sample was substantially larger and more diverse than previous studies, which have often relied on small convenience or college student samples. The breadth of our sample provided an opportunity for detailed comparisons of women and men across the age spectrum from 18 to 65. We were also able to compare respondents who differed substantially in height and weight. Our methods provided considerable protection of anonymity and allowed individuals to participate from the privacy of their home or workplace. The ease of participation may have further reduced some of the bias introduced when volunteers must travel to a research setting to participate. In addition, this study obtained both men's and women's views about penis size. Whereas past studies have assessed women's abstract conception of the importance of penis size (e.g., Francken et

al., 2002), this research asked women about their satisfaction with their actual partner's penis size. Finally, it should be emphasized that this is the first large-scale study of the associations among men's self-reported penis size, penis size satisfaction, personal characteristics, and body image.

Concluding Comments

As Kilmartin (2000, p. 219) observed, "As long as men continue to equate penis size with masculinity, they will continue to feel unnecessary sexual anxiety." Kilmartin's view is supported by the fact that men's desire for a larger penis continues to be experienced later in life, in spite of achievements or other experiences that one would expect to have put "manhood" into broader perspective. Addressing the problem of male dissatisfaction with penis size is particularly important in the modern technological age where alteration of the body through cosmetic surgery has become a widespread phenomenon. A strong limiting factor against augmentation phalloplasty to date has been the high risk and ineffectiveness in substantial enlargement of the penis. Both the American Urological Association and the Society for Esthetic Plastic Surgery have issued policy statements expressing concerns about the safety and efficacy of this procedure. However, advances in surgical techniques are making penis enlargement safer and more effective. For example, a new augmentation phalloplasty procedure performed on 39 patients successfully produced notable average increases in both the length (1.6 cm) and width (1.3 cm) of the erect penis. Most men who had this new procedure reported high levels of satisfaction 9 months after the procedure and experienced few complications (Austoni, Guarneri, & Cazzaniga, 2002).

As the day approaches when larger numbers of men may elect to have augmentation phalloplasty, it becomes increasingly important to understand the factors that contribute to penis dissatisfaction and the possible consequences of this discontent. An intriguing finding was the substantial discrepancy between the percentage of men versus women who reported satisfaction with their own or their partner's penis. Only 15% of women said they were not satisfied with their partner's penis size, compared with 45%

of men who were not satisfied with their penis size.

Why are so many men dissatisfied with their penis size when the vast majority of women are satisfied with their partner's penis size? Past research has suggested that one reason men overestimate the importance of a trait to women is that media marketed to men give greater emphasis to the importance of this trait than do media marketed to women (Frederick, Fessler, & Haselton, 2005). For example, media marketed to men (pornography, popular magazines) may emphasize the importance of supersized penises, whereas media marketed to women may not. If individuals use media as a source of information about what physical features are important, than gender-differentiated media may mislead men about women's actual preferences. Future research should examine in greater detail the degree to which men overestimate the importance of penis size to women and the reasons for this misperception.

Even if a man recognizes that his partner finds his penis to be adequate, however, he may still want to be larger as a way to feel more masculine. This insecurity may stem from how he feels his flaccid penis size and his erect penis size compare with those of other men. The only place in real life where most heterosexual men view another man's penis is in its flaccid form in locker rooms, which may cause flaccid penis size to become an important component of their perceptions of how masculine they are. Men's perceptions of their erect penis size relative to other men's may also be shaped during verbal competitions where men boast about their size when erect. We encourage future researchers to pose questions that probe this aspect of male culture.

Pleck (1981, 1995) put these concerns within the context of what he termed *gender role strain*. One specific form of gender role strain, termed *discrepancy strain*, results when one fails to live up to one's concept of manhood. This perspective suggested two ways to reduce men's dissatisfaction with penis size. First, men can be encouraged to reject the cultural messages associating penis size with masculinity (e.g., Richmond & Levant, 2003). Using popular newspapers and magazines to publicize the finding that penis size is less important to women than men think will help male readers allay at least this source of anxiety.

Second, researchers have an obligation to disseminate findings within the medical and psychotherapy communities, for example, by publishing research notes in journals for urologists, so that their members can challenge patients' beliefs that they need penis enlargement procedures to be acceptable as sexual partners. Letters to the editor of journals for clinical therapists, for another example, can urge the sponsoring association to issue policy statements that discourage surgery as an individual solution to a cultural problem. It would be useful to urge media outlets to stop promulgating the bigger-is-better association of penis size with masculinity, too. Reaching creators of mass media messages is more difficult than reaching the health care community, but encouraging image shapers to take greater social responsibility should not be abandoned as an impossibility.

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