Pubic Hair Removal among Women in the United States: Prevalence, Methods, and Characteristics

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A B S T R A C T

Introduction. Although women's total removal of their pubic hair has been described as a "new norm," little is known about the pubic hair removal patterns of sexually active women in the United States.
Aims. The purpose of this study was to assess pubic hair removal behavior among women in the United States and to examine the extent to which pubic hair removal methods are related to demographic, relational, and sexual characteristics, including female sexual function.
Methods. A total of 2,451 women ages 18 to 68 years completed a cross-sectional Internet-based survey.
Main Outcome Measures. Demographic items (e.g., age, education, sexual relationship status, sexual orientation), cunnilingus in the past 4 weeks, having looked closely at or examined their genitals in the past 4 weeks, extent and method of pubic hair removal over the past 4 weeks, the Female Genital Self-Image Scale (FGSIS) and the Female Sexual Function Index (FSFI).
Results. Women reported a diverse range of pubic hair-grooming practices. Women's total removal of their pubic hair was associated with younger age, sexual orientation, sexual relationship status, having received cunnilingus in the past 4 weeks, and higher scores on the FGSIS and FSFI (with the exception of the orgasm subscale).
Conclusion. Findings suggest that pubic hair styles are diverse and that it is more common than not for women to have at least some pubic hair on their genitals. In addition, total pubic hair removal was associated with younger age, being partnered (rather than single or married), having looked closely at one's own genitals in the previous month, cunnilingus in the past month, and more positive genital self-image and sexual function. **Herbenick D, Schick V, Reece M, Sanders S, and Fortenberry JD. Pubic hair removal among women in the United States: Prevalence, methods and characteristics. J Sex Med **;**:**–**.**

Key Words. Pubic Hair; Female Sexual Function; Depilation; Genital Self-image; Female Genital Self-Image Scale

Introduction

Women's total removal of their pubic hair has been referred to as "genital hairlessness" and described as a "new norm" for women in the United States that has occurred over the past decade, with possible clinical implications [1,2]. However, as pubic hair styles and removal practices have rarely been documented, it is questionable to what extent women's total removal of their pubic hair is either new or normative. From artistic renderings of nude women, limited scientific literature, and survey data, it is clear that the extent to which women have removed or groomed their pubic hair has varied by historical time and place [2–5]. For example, art and artifacts suggest that women in ancient Egypt and classical Greece may have removed some or all of their pubic hair (in Greece, by plucking or singeing with a lamp) and that groomed pubic hair may have been considered a feature of women's sexual attractiveness [3]. Removal of significant amounts of pubic hair among women in India have been documented as well [6,7]. Similarly, nude women depicted in some

Italian Renaissance art have no pubic hair, whereas nude women depicted in some Northern Renaissance and Gothic art are depicted with pubic hair—a difference that may be of artistic significance or may reflect women's actual pubic hair styles of the time [4].

Although the absence of pubic hair depicted on women in art has, at times, been suggested to result from men's fear of female genitals or from suppression of female sexuality, other researchers have presented alternative explanations for female genital hairlessness [3,5]. These explanations include that the models themselves may have removed their pubic hair either because they lived in a warm climate or because artistic models in some cultures were often courtesans, who may have removed their hair even if other women in the culture did not [5]. It has also been suggested that an absence of pubic hair on female nudes might be due to an artistic view of the era that presented smooth, unbroken "snakelike" lines—such as those of the hairless vulva—as more aesthetically appealing than short, scattered or broken lines, such as those that would have been necessary to depict pubic hair [5].

Findings from a 1968 survey of women in a nudist club in Australia suggest that 10% removed all of their pubic hair, 50% trimmed their pubic hair and the rest did nothing to their pubic hair [8]. In addition, a recent content analysis of *Playboy* centerfolds from issues dated December 1953 through October 2007 demonstrated that a far greater proportion of centerfolds in issues dated 2000–2007 had little or no pubic hair [9]. However, as with nude figures rendered in art from earlier centuries, it is unclear to what extent the *Playboy* centerfolds' pubic hair styles reflect or influence the pubic hair styles of contemporary women.

Given these variations in pubic hair styles over time, it may be more accurate to state that, rather than female genital hairlessness being a "new norm," in the past decade or so, an increasing number of women in the United States, the United Kingdom, and Australia appear to be removing all of their pubic hair—with potential benefits (e.g., reduced risk of pubic lice) and clinical risks (e.g., genital cuts, irritation, or infection) noted [2,10–12]. However, as neither the prevalence nor the extent of pubic hair removal was previously well documented, it is difficult to know when pubic hair styles changed, why they changed or how many more contemporary women may be removing all of their pubic hair compared to women in earlier generations.

Much of what is known about recent trends in women's pubic hair removal are derived from anecdotal reports by physicians and mainstream media reports or depictions of total removal of pubic hair (such as by Brazilian waxing techniques) [10,11,13–15]. However, such sources may give a false impression of the prevalence of female genital hairlessness or may influence women to engage in such hair removal practices.

One study of 235 female undergraduate students in Australia found that approximately 22% were currently in the practice of removing all of their pubic hair and that total removers were more likely to use waxing than shaving [15]. Furthermore, those who removed all of their hair were younger, on average, than partial removers, and more likely to endorse doing so for reasons related to sexual attractiveness, femininity, and self-enhancement rather than social norms. Another survey of more than 600 women in the United Kingdom found removal of pubic hair to be more common among women who were 50 years of age or younger [16].

Although anecdotal reports suggest that pubic hair removal is common, the extent to which women in the United States remove their pubic hair has not been studied. Also, limited research exists on pubic hair removal among women of a wide range of ages. The purpose of this study was to assess pubic hair removal behavior among sexually active women in the United States and to examine the extent to which pubic hair removal methods are related to demographic, relational, and sexual characteristics, including female sexual function.

Methods

The Institutional Review Board at the author's institution approved all protocols associated with this study.

Recruitment

Data from this study are from a larger study related to women's lubricant use. During winter 2008, e-mail recruitment messages were sent to colleagues, community and campus organizations, and health-related listservs. The messages invited adult women (age 18+) to visit a study website to learn more about an Internet-based study about lubricant use. The study website provided detailed information about the study and participant eligibility. To be eligible, individuals had to be at least

18 years old, female, living in the United States, and sexually active alone or with a partner. "Sexually active" was defined as masturbating and/or being the receptive partner in vaginal or anal sex at least four times, on average, in a typical month at the time of the study.

Interested individuals were asked to complete online questions (based on the above criteria) to determine their eligibility. If eligible, participants read and electronically signed a statement of informed consent that they could print and retain. The data presented here are from the baseline portion of the study that consisted of a cross-sectional Internet-based survey that took 10–20 minutes to complete.

Main Outcome Measures

Participants completed a baseline questionnaire that included items related to their demographics (e.g., age, education, race/ethnicity, relationship status, sexual orientation), health history and behaviors (e.g., age at menarche, whether they had a gynecological exam in the previous year, whether they had looked closely at or examined their genitals in the previous month), and whether they had received cunnilingus in the previous 4 weeks. As the sample was part of a larger study about lubricants and sexual activity, participants were asked about a wider range of sexual behaviors; however, it was cunnilingus that was hypothesized by the authors to be positively related to pubic hair removal behaviors.

Participants were also asked approximately how many times they had removed some or all of their pubic hair during the previous month (response choices ranged from 0 to 10 times, with "More than 10 times" as a choice that represented the highest frequency) through shaving or waxing, as well as the frequency of laser hair reduction and electrolysis use over the previous month.

In addition, participants completed the Female Genital Self-Image Scale (FGSIS), a reliable and valid 7-item scale that assesses how women feel about their genitals, with a higher score indicating more positive genital self-image [17].

Participants also completed the Female Sexual Function Index (FSFI), a 19-item questionnaire with demonstrated reliability and validity [18–20]. The FSFI provides scores for the domains of desire, arousal, lubrication, satisfaction, orgasm, and pain during sex, with higher scores indicating more positive sexual function (and on the pain domain, a higher score indicates no or less pain).

The FSFI also results in a total score representing overall sexual function.

Analyses

Analyses were performed using SPSS 17.0 (SPSS Inc., Chicago, IL, USA). Descriptive statistics were used to report sample characteristics and the proportion of women who had removed some or all of their pubic hair in each of five age groups (18–24, 25–29, 30–39, 40–49, 50–68 years). As pubic hair removal behaviors have been suggested to be a newer phenomenon, it was decided that the data would be most informative if examined by age cohorts.

Next, women were categorized into groups based on the frequency and totality of their pubic hair removal. Those who reported having removed all of their pubic hair by waxing at least once in the past month, or from shaving more than 10 times in the past month were categorized as "typically hair-free." Women were categorized as "some total removal" if they reported having shaved all of their pubic hair 10 or fewer times during the past month but did not report total removal through waxing in the past month.

Those who reported waxing or shaving some of their pubic hair in the past month, or who reported having had electrolysis or laser hair reduction during the past month, but no total removal, were categorized as having "partial removal." Those who reported no removal using the listed techniques (waxing, shaving, electrolysis, or laser) were categorized as "no removal."

Once categorized, chi-square analyses and analysis of variance or covariance (using Tukey's test of honestly significant difference or Bonferroni post hoc tests) was used to examine differences between the groups.

Results

Participants

A total of 2,451 women completed the study. Participants largely reported being heterosexual, partnered, and white/Caucasian (see Table 1). Participants ranged in age from 18 to 68 years (mean = 32.69, median = 31.0, standard deviation = 9.17).

Prevalence and Extent of Pubic Hair Removal

As can be seen at the bottom of Table 2, the prevalence and extent of pubic hair removal varied by

Table 1 Participant characteristics

Characteristics	% (N)
Age (Mean, SD)	32.69 (9.2)
Education	
High school or less	20.6 (504)
Some college or 2-year degree	42.2 (1,033)
College graduate	26.3 (644)
Graduate degree	10.9 (266)
Race/ethnicity	
African American/Black	4.5 (110)
Asian/Asian American	4.6 (112)
Caucasian/white	86.2 (2,095)
Multiracial or other	4.7 (113)
Hispanic or Latina	5.0 (122)
Sexual orientation	
Heterosexual	86.9 (2,121)
Bisexual	8.5 (207)
Lesbian	2.2 (54)
Questioning, uncertain or other	2.3 (56)
Asexual	0.1 (3)
Relationship status	
Single	9.8 (237)
Partnered	58.4 (1,411)
Married	28.9 (698)
Separated, widowed or divorced	2.9 (71)
Sexual partners	
Sexually active—monogamous partner	88.5 (2,105)
Sexually active—no monogamous partner	3.6 (86)
Not sexually active with a partner	7.9 (188)

age. In the 18–24-year-old age group, the largest proportion of women engaged in some total removal (38.0%), the second largest proportion engaged in partial removal (29.1%), and about one-fifth were typically hair-free over the previous month (20.6%). It was less common for women in this age group to engage in no removal at all during the previous month.

Among women aged 25–39 years, the largest proportion of women engaged in partial removal followed by some total removal, no removal, and being typically hair-free (which was least common). Women in the 40–49-year-old age group also most commonly engaged in partial removal of their pubic hair, although more than a quarter of them did not engage in any hair removal behaviors over the previous month. Some total removal and being typically hair-free were less common.

The largest proportion of women in the 50+ age group had not engaged in any of the listed hair removal behaviors over the previous month (51.7%). More than a third had engaged in partial removal (37.1%). About one-tenth engaged in some total removal, while being typically hair-free was rare (2.1%).

Characteristics of Women Based on Pubic Hair Removal Behaviors

As can be seen in Table 3, women who were typically hair-free in the previous month were signifi-

cantly younger than women in all other categories ($\chi^2 = 28.74$). Those who engaged in some total removal were significantly younger ($\chi^2 = 29.54$) than those who had engaged in partial ($\chi^2 = 33.67$) or no removal ($\chi^2 = 36.74$). There were no significant age differences between the latter two groups. In addition, a significantly greater proportion of women who identified as bisexual were typically hair-free over the previous month (18.0%) as compared to those who identified as heterosexual (10.8%) or lesbian (9.4%). The greatest proportion of women in each of the sexual orientation groups were partial removers.

Also, a greater proportion of women who were partnered (but not married) were categorized as typically hair-free or as having engaged in some total removal over the previous month. Women who were currently sexually active with someone other than a monogamous partner were the most likely to remove their pubic hair, while those who were not sexually active with a partner more often reported no pubic hair removal.

Pubic Hair Behaviors in Relation to Health Behaviors

Women who were typically hair-free or who had removed all of their pubic hair at least once during the previous month (some total removers) were more likely to have looked closely at their genitals during the previous month but were no more or less likely to have had a gynecological exam than partial or no removers.

Pubic Hair Behaviors in Relation to Sexual Behaviors

Typically hair-free women and those who had removed all of their pubic hair at least once during the previous month (some total removers) were also more likely to have received cunnilingus in the previous 4 weeks. However, because that could be an artifact of a partnered relationship status or of younger age, which is conflated with more frequent sex overall, we controlled for these variables in a multivariate model. When included in this model, pubic hair still emerged as a significant predictor. Despite reported differences in sexual behavior, pubic hair patterns were unrelated to the participant's reported human immunodeficiency virus and sexually transmitted infections diagnoses within the year ($P < 0.05$).

Pubic Hair Behaviors and Female Genital Self-Image

The FGSIS had sufficient reliability in this sample (Cronbach's alpha = 0.87). Women who were typically hair-free or sometimes hair-free during the previous month scored significantly

Table 2 Prevalence and frequency of pubic hair removal in the past month by method

	18–24 N = 459 %(N)	25–29 N = 577 %(N)	30–39 N = 845 %(N)	40–49 N = 395 %(N)	50+ N = 142 %(N)
Shaved some pubic hair					
Not at all	32.9 (151)	32.2 (185)	32.4 (274)	39.8 (157)	55.6 (79)
1 time	12.2 (56)	13.6 (78)	14.2 (120)	11.2 (44)	10.6 (15)
2–5 times	35.7 (164)	36.2 (208)	33.2 (281)	30.2 (119)	18.3 (26)
6–10 times	5.9 (27)	8.9 (51)	8.0 (68)	9.4 (37)	12.0 (17)
11+ times	13.3 (61)	9.1 (52)	12.2 (103)	9.4 (37)	3.5 (5)
Shaved off all pubic hair					
Not at all	43.3 (199)	56.4 (326)	69.6 (590)	78.7 (311)	88.8 (127)
1 time	11.3 (52)	12.6 (73)	8.3 (70)	6.1 (24)	2.1 (3)
2–5 times	22.8 (105)	17.0 (98)	12.6 (107)	6.3 (25)	4.9 (7)
6–10 times	6.1 (28)	5.0 (29)	3.3 (28)	4.1 (16)	2.1 (3)
11+ times	16.5 (76)	9.0 (52)	6.3 (53)	4.8 (19)	2.1 (3)
Waxed some pubic hair					
Not at all	94.3 (434)	95.8 (551)	95.3 (805)	97.5 (385)	97.9 (139)
1 time	3.9 (18)	1.7 (10)	2.7 (23)	1.3 (5)	0.7 (1)
2–5 times	1.3 (6)	1.7 (10)	1.9 (16)	1.0 (4)	1.4 (2)
6–10 times	0.2 (1)	0.3 (2)	0	0.3 (1)	0
11+ times	0.2 (1)	0.3 (2)	0.1 (1)	0	0
Waxed all pubic hair					
Not at all	94.3 (433)	96.0 (552)	97.4 (825)	98.2 (388)	100.0 (142)
1 time	3.5 (16)	2.1 (12)	2.0 (17)	1.0 (4)	0
2–5 times	1.1 (5)	1.2 (7)	0.5 (4)	0.8 (3)	0
6–10 times	0.7 (3)	0.3 (2)	0	0	0
11+ times	0.4 (2)	0.3 (2)	0.1 (1)	0	0
Electrolysis					
Not at all	98.7 (453)	99.0 (570)	99.6 (842)	99.7 (394)	100.0 (142)
1+ times	1.3 (6)	1.0 (6)	0.4 (3)	0.3 (1)	0
Laser hair reduction					
Not at all	99.1 (455)	97.9 (565)	99.3 (838)	99.5 (393)	100.0 (142)
1+ times	0.9 (4)	2.1 (12)	0.7 (6)	0.5 (2)	0
Any total removal, past month	58.7 (270)	44.6 (258)	31.8 (269)	22.5 (89)	11.2 (16)
Hair removal status					
Typically hair-free	20.6 (95)	12.4 (72)	8.6 (73)	6.5 (26)	2.1 (3)
Some total removal	38.0 (175)	32.2 (186)	23.2 (196)	16.0 (63)	9.1 (13)
Some removal, not total	29.1 (134)	39.4 (228)	49.5 (419)	49.7 (196)	37.1 (53)
No hair removal using listed methods	12.4 (57)	16.0 (92)	18.7 (159)	27.8 (110)	52.1 (74)

higher on the FGSIS after controlling for age, sexual orientation, and sexual relationship status, indicating more positive genital self-image, as compared to those who had not removed any or all of their pubic hair in the previous month (see Table 4).

Pubic Hair Behaviors and Female Sexual Function
The reliability for the FSFI in this sample was acceptable ($\alpha = 0.90$). As seen in Table 5, after controlling for age, sexual orientation, and sexual relationship status, all FSFI subscales significantly varied based upon the participant's pubic hair patterns with the exception of the orgasm subscale. Overall, participants in the some total removal and typically hair-free groups tended to report significantly higher scores on the FSFI than their counterparts in the no removal and partial removal groups.

Discussion

Findings from this study of more than 2,400 women suggest that women's pubic hair removal behaviors are more variable than they are sometimes described. The data demonstrate that women who are sexually active (alone or with a partner) engage in varied pubic hair removal behaviors that include a range of frequencies and extents of shaving, waxing, and, less commonly, electrolysis and laser hair reduction. However, women who removed all of their pubic hair were generally younger, more likely to engage in cunnilingus and scored higher on measures of female genital self-image and sexual function, even after controlling for other variables.

These data are particularly relevant for those whose practice is centered on sexual medicine or gynecology, who may be the healthcare providers who are most likely to view women's genitals and

Table 3 Characteristics of women in regard to their pubic hair removal patterns in the previous month

	No removal N = 490	Partial removal N = 1,030	Some total removal N = 634	Typically hair-free N = 269	
Age (Mean, SD)	36.74 (10.6)[a]	33.67 (8.5)[a]	29.54 (7.6)[b]	28.74 (8.00)[c]	$P < 0.001$
18–24	12.4 (57)	29.1 (134)	38.0 (175)	20.6 (95)	
25–29	15.9 (92)	39.4 (228)	32.2 (186)	12.5 (72)	
30–39	18.7 (158)	49.5 (419)	23.2 (196)	8.6 (73)	
40–49	27.7 (109)	49.7 (196)	16.0 (63)	6.6 (26)	
50+	51.7 (74)	37.1 (53)	9.1 (13)	2.1 (3)	
Sexual orientation					
Heterosexual	20.1 (421)	43.3 (908)	25.8 (542)	10.8 (226)	$P < 0.001$
Bisexual	14.1 (29)	36.9 (76)	31.1 (64)	18.0 (37)	
Lesbian	26.4 (14)	43.4 (23)	20.8 (11)	9.4 (5)	
Relationship status					$P < 0.001$
Single	22.8 (53)	39.7 (92)	26.3 (61)	11.2 (26)	
Partnered	15.5 (108)	39.3 (273)	30.6 (213)	14.5 (101)	
Married	22.2 (309)	44.3 (618)	24.3 (339)	9.2 (128)	
Separated, widowed, divorced	20.0 (14)	48.6 (34)	18.6 (13)	12.9 (9)	
Sexual partners					$P < 0.001$
Sexually active—monogamous partner	19.8 (417)	42.9 (901)	26.7 (562)	10.6 (222)	
Sexually active—no monogamous partner	11.6 (10)	34.9 (30)	29.1 (25)	24.4 (21)	
Not sexually active with a partner	26.6 (50)	41.5 (78)	22.3 (42)	9.6 (18)	
Age at menarche (Mean, SD)	12.23 (1.6)	12.38 (1.5)	12.31 (1.5)	12.43 (1.6)	NS
Looked closely at genitals, past month	41.6 (202)	55.1 (567)	65.5 (414)	65.7 (176)	$P < 0.001$
Gyn exam in past year	77.4 (377)	82.0 (844)	83.2 (524)	81.8 (220)	NS
Cunnilingus in past 4 weeks	58.7 (280)	70.8 (717)	76.4 (477)	81.6 (213)	$P < 0.001$

Cells whose subscripts differ indicate significant differences.

to be asked questions, by their patients, about pubic hair removal practices. Women may have questions, based on what they have heard from friends or partners or read in the media, about which removal practices are normal or whether there may be any advantage to pubic hair removal in terms of health or the experience of sex. These data are among the few scientific findings to address such questions.

It has been said that having no pubic hair is normative [1,10,14]; however, findings from this study suggest that there is no one dominant pubic hair style. Given the growth rate of hair and women's often sporadic hair removal, there is likely great diversity in the amount of pubic hair that women have at any given time. After all, pubic hair is in a constant state of growth, which suggests that pubic hair "style" may be a malleable concept.

Although more than half of women in the 18–24 age group had removed all of their pubic hair at least once during the previous month, only one-fifth were considered "typically hair-free" as

Table 4 Scores on the female genital self-image scale and hair removal status controlling for age, sexual orientation, and sexual relationship status

	Pubic hair								
	No removal N = 490		Partial removal N = 1,030		Some total removal N = 634		Typically hair-free N = 269		
Female genital self-image scale	M	SE	M	SE	M	SE	M	SE	F
1. I feel positively about my genitals	3.38[a]	0.09	3.40[a]	0.08	3.47[ab]	0.09	3.53[b]	0.09	4.31**
2. I am satisfied with the appearance of my genitals	3.30[ab]	0.09	3.29[ab]	0.09	3.38[ac]	0.09	3.45[c]	0.09	5.48**
3. I would feel comfortable letting a sexual partner look at my genitals	3.36[a]	0.09	3.40[a]	0.09	3.52[b]	0.09	3.67[b]	0.10	8.40***
4. I think my genitals smell fine	3.31[a]	0.09	3.33[a]	0.09	3.45[b]	0.09	3.50[b]	0.09	8.65***
5. I think my genitals work the way they are supposed to work	3.54[a]	0.09	3.57[ab]	0.09	3.64[ab]	0.09	3.68[b]	0.09	3.99**
6. I feel comfortable letting a healthcare provider examine my genitals	3.28	0.10	3.31	0.10	3.33	0.10	3.42	0.10	2.30
7. I am not embarrassed about my genitals	3.33[a]	0.09	3.34[a]	0.09	3.41[ab]	0.09	3.48[b]	0.10	3.40**
FGSIS summative score	23.56[a]	0.48	23.67[a]	0.47	24.18[b]	0.48	24.64[b]	0.50	7.74***

*$P < 0.05$.
**$P < 0.01$.
***$P < 0.001$.
Cells whose subscripts differ indicate significant differences.

Table 5 Scores on the female sexual function scale and hair removal status controlling for age, sexual orientation, and sexual relationship status

	Pubic Hair								
	No removal N = 490		Partial removal N = 1,030		Some total removal N = 634		Typically hair-free N = 269		
FSFI Scale	M	SE	M	SE	M	SE	M	SE	F
Arousal	4.86[a]	0.15	4.94[a]	0.15	5.10[b]	0.15	5.26[b]	0.16	9.29***
Desire	4.34[a]	0.16	4.46[a]	0.16	4.75[b]	0.16	5.05[c]	0.16	27.22***
Lubricant	4.59[a]	0.17	4.75[a]	0.16	4.75[a]	0.17	4.89[b]	0.17	3.34*
Orgasm	4.72	0.19	4.71	0.19	4.80	0.19	4.80	0.20	0.66
Pain	4.88[a]	0.18	5.07[ab]	0.18	5.22[b]	0.19	5.26[b]	0.19	6.55***
Satisfaction	3.98[a]	0.14	3.98[a]	0.14	4.07[ab]	0.14	4.20[b]	0.15	3.53**
FSFI total score	27.58[a]	0.66	27.97[a]	0.65	28.62[b]	0.66	29.42[b]	0.69	9.57***

*$P < 0.05$.
**$P < 0.01$.
***$P < 0.001$.
Cells whose subscripts differ indicate significant differences.

defined in this study (a proportion that was strikingly similar to the Australian study that found that 22% of undergraduate students removed all of their pubic hair). Being hair-free was less common with each older age group, suggesting either that total hair removal is, indeed, a newer phenomenon or that it may reflect a phase that women grow out of with age, developmental life stage, or the progression of their romantic relationships. As the current study provides only cross-sectional data, a longitudinal design would be better suited to address such a question as might an interview study that asks women about their shifting pubic hair removal behaviors over the course of their lives.

That a greater proportion of bisexual-identified women removed all of their pubic hair as compared to heterosexual women and lesbian women is worth noting. This adds to existing research that has reported other behavioral differences among bisexual identified women including a greater proportion of bisexual women who have masturbated in the previous month or who have used a vibrator [21].

This study had several strengths. Recruitment messages did not include language related to pubic hair or removal techniques; thus, the sample was unlikely to self-select on such variables. In addition, more than 2,400 women were surveyed, making this study—to our knowledge—the largest study of pubic hair removal techniques conducted thus far. Furthermore, women ages 18 to 68 participated in the study, which allowed for comparisons across five age cohorts.

That said, the present study did not assess women's reasons for pubic hair removal, although other researchers have done so [22]. If pubic hair removal sometimes occurs in anticipation of

having sex (which it may be as pubic hair removal was sporadic for most women), then it begs the question of the extent to which women's sexual behavior is planned or considered ahead of time, whether in or outside of a relationship context. If women plan to remove their pubic hair in anticipation of a date or possible sexual encounter, perhaps pubic hair grooming reflects or even influences how women's sexual decision making can occur well before she is in an immediate sexual situation with a potential sexual partner. Future research might consider how often women groom their pubic hair in anticipation of sex and how often women avoid or decline sex if they feel that their pubic hair is not well groomed. Also, although pubic hair removal was associated with FSFI and FGSIS scores, the direction of these relationships is unclear. Thus, future research might consider whether more positive sexual function (or positive genital self-image) influences pubic hair grooming behaviors or whether women who remove their pubic hair have more positive sexual function (or genital self-image). Regarding the former, it may be that women who choose to remove their pubic hair are more easily aroused or have greater desire for sex, or that during periods of time when women exhibit greater interest in sex, they may groom their pubic hair in ways that excite them or that they hope may excite a partner. Too, modulating pubic hair may allow greater sensitivity of vulvar skin. Alternatively, it may be that women's partners are more attracted to or attentive to vulvar or clitoral stimulation, or more interested in performing cunnilingus, when there is less hair, or it may reflect the myriad ways in which women's genitals and their body image relate to sexual function and experience [23,24].

Women in the younger age groups tended to engage in more pubic hair removal behaviors, which likely reflects cohort effects (specifically, that when older women were growing up and/or became sexually active, there were fewer salons that offered pubic hair removal, particularly total removal, and less media discussion of these behaviors). It may reflect that younger women tend to have more frequent sex and also, perhaps, more occasions of unexpected sex. Younger women may groom more regularly in anticipation of sex as they are less likely to have a regular sex partner, and thus may find themselves wanting to be prepared in case that a sexual opportunity presents itself.

A limitation of the study is that the use of depilatory creams was not assessed, and thus, women who use depilatory creams (but no other methods) to remove some or all of their pubic hair may have been miscategorized. Trimming was also not assessed; therefore, the length of hair is not known. In addition, it is not known how much pubic hair was removed by laser or electrolysis; as such, the small number of women who used these methods may also have been miscategorized. Also, women may experience different rates of hair regrowth which may mean that some women who were perceived to be "typically hair-free" were perhaps not, even if they had waxed all of their pubic hair off in the previous month. Alternatively, women who removed their hair only sometimes, but who experience a slow rate of hair regrowth, may have been miscategorized as having some hair. As the error of these possible categorizations could flow in either direction, any error because of this should even out. We also did not assess adverse outcomes of pubic hair grooming nor did we assess removal behaviors among women who did not meet our study's definition of being "sexually active" alone or with a partner. Finally, probability methods of sampling were not used for recruitment, and thus, participants are not representative of, nor can they be generalized to, the greater population of women in the United States.

This study provides important insights into the diversity of pubic hair removal techniques among women in the United States. Although several reports from clinicians have suggested that a large number of women remove much or all of their pubic hair, it may be the case that women groom specifically in advance of gynecological visits, thus altering the perceptions of clinicians about the proportion of women who regularly remove all of their pubic hair.

Conclusions

Although women's total pubic hair removal has been described as a "new norm," findings from this study suggest that pubic hair styles are diverse and that it is more common than not for women to have at least some pubic hair on their genitals. In addition, it was found that total pubic hair removal was associated with younger age, being partnered (rather than single or married), having looked closely at one's own genitals in the previous month, cunnilingus in the past month, more positive sexual functioning scores, and a more positive genital self-image.

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