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Body hair removal: Prevalence, demographics, and body experience among men and women in Germany

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Abstract

Background: Body hair removal is an increasing trend that has an impact on the individual's body image.

Aims: To characterize current body hair removal practices in Germany and the extent to which body hair removal was related to demographic characteristics, body image, and body mass index.

Patients/Methods: A national survey was conducted from September to October 2016 in men and women in Germany. Body experience was measured by a standardized questionnaire. In addition to sociodemographic data, age, gender, education, marital status, monthly income, and body mass index were collected.

Results: A total of n = 2510 participants aged 14 to 94 years (Mage = 48.4 years (SD = 18.2), 53.4% females) were randomly selected from the general population. 69% of the questioned women removed their body hair while only 41% of men do. The gender effect is statistically significant (χ^2 = 203.43; df = 1; P < .001). Income, a higher level of education, and living in an urban region were significantly associated with body hair removal in both, men and women. Furthermore, significant differences with regard to body image were found between hair removers and nonremovers which are associated with a different attitude toward the own body.

Conclusions: Germans were likely to remove body hair if they were of younger age, better educated, and with high income. Hair removal is above all a women's issue. Especially, female hair removers experience their body as an esthetic entity with the need of active reshaping. There is a "shift" from ideal of a naturally hairy body to an increased hairlessness in Germany.

KEYWORDS

axillary hair, body hair removal, body image, national survey, pubic hair

1 | INTRODUCTION

The removal of body hair is one of the most common beauty practices in Western societies.[1,2] Several studies have sought to characterize the prevalence, associated demographics, and motivations for body hair removal. Hitherto, most studies were carried out in the United States,[1,3-7] United Kingdom,[8] New Zealand,[9] and Saudi Arabia.[10]

Although widespread, little is known about prevalence and demographic correlates, body image, and body experience of men and women who are trimming their body hair and live in Germany. The trimming or removal of body hair, especially in the female pubic area,

has a long history and is practised in many cultures. Although normative pubic hair grooming is considered a contemporary trend, the decorating, sculpting, and removal of pubic hair have been practiced for medical, artistic, and cultural reasons for centuries.[11] Moreover, trimming and shaving the pubic hair in females seem to be become more popular.[5] Accordingly, men's hair removal practices have become mainstream as well being considered as a consequence of normative changes in men's attitudes toward their bodies.[12] During the last decades, a straightforward "shift" was observed from the ideal of naturally hairy bodies to increased hairlessness in German speaking countries. So far, only a few studies are available on the body image of people who remove their axillary and pubic hair.[3] In women, Grossman and Annunziato [13] found an association between appearance concerns (measured by thin-ideal, appearance investment, and self-objectification) and grooming of pubic hair.

The purpose of this study was to describe the prevalence of body hair removal and the extent to which removal was related to demographic characteristics, body image, and body experiences in a representative German cohort.

2 | MATERIALS AND METHODS

Our study was part of multi-topic survey. Using a random route procedure, a representative sample of the German population was acquired by a demographic consulting company (USUMA, Berlin, Germany) during September and November 2016. Households of every third residence in a randomly chosen geographical area were invited to participate in the study. In multi-person households, participants were randomly selected using a Kish selection grid. Inclusion criteria were a minimum age of 14 and sufficient knowledge of the German language.

Out of 4902 designated addresses, 2510 households participated in the study. Responses were anonymous. In a first step, sociodemographic information was gathered in an interview format by research staff. All other information was obtained via paper and pencil questionnaire, with research staff being available for questions. The study was conducted in accordance with the Declaration of Helsinki, and fulfilled the ethical guidelines of the International Code of Marketing and Social Research Practice of the International Chamber of Commerce and of the European Society of Opinion and Marketing Research. All participants (and if applicable their caregivers) gave informed written consent. USUMA uses statistical weighting adjustments to correct for known deviations. The study was approved by the Ethics Committee of the Medical Department of the University of Leipzig.

Body hair removal was assessed by the following questions: "Do you normally or occasionally remove hair from your body (without beard by men)?" If the answer was yes the participants were asked: "Which body part do you remove from body hairs?" The following body parts could be select from a list: "Eyebrow, face (without beard in men), head, axilla, upper arm, genital, and leg." In addition to sociodemographic data, questions regarding age, gender, education, marital status, monthly income, body weight, and height were asked. To measure body experience and body image, a short form of a standardized Questionnaire assessing one's individual body experience (Fragebogen zur Beurteilung des eigenen Körpers, FBeK) [14] was used. The FBeK is one of the most frequently used German questionnaires in the field of body experience, and up-to-date standard norm values are available for the FBeK. The FBeK measures attitudes toward different dimensions of body experience and body image (eg, Insecurity/Discomfort n = 19 items, Cronbach $\alpha = 0.75$, Attractiveness/Self-esteem n = 13 items, Cronbach $\alpha=0.85$ and Accentuation/Sensitivity n = 20 items, Cronbach $\alpha = 0.70$).[14,15] With regard to Insecurity/Discomfort, negative feelings about the body are measured. Positive feelings toward the body are measured by the Attractiveness/Self-esteem part of the questionnaire and the importance of the body's outer appearance and the individual's care for the body are assessed by

TABLE 1 Demographic Characteristics of body hair removal in the German population[a]

Characteristic		
Age		
Mean	48.36	
Standard deviation	18.22	
Range	14-94	
Age group, year	N	%
14-24	281	11.20
25-34	390	15.54
35-44	389	15.50
45-54	465	18.53
55-64	436	17.37
65-74	328	13.07
Up to 75 years	221	8.80
Sex		
Male	1171	46.65
Female	1339	53.35
Relation status		
Married living with partner	1093	43.70
Married living separated	53	2.12
Never married	787	31.47
Widowed	347	13.87
Divorced	221	8.84
Educational level		
High school graduate	810	32.37
Some college	1071	42.81
Bachelor's degree or higher	621	24.82
Region		
Urban	1026	40.9
Country side	1484	59.1

[a]Data are presented as number (percentage) of women and men.

the Accentuation/Sensitivity part. The FBeK subscale scores are computed as mean scores.

The statistical evaluation was performed with SPSS, version 18.0.2. software ver. 23.0 (IBM Corp.) through descriptive statistics (means, standard deviations, frequencies, and percentages) and analytical statistics (independent samples *t* tests) to find the differences between groups (ie, men and women who remove axillary and pubic hair and nonremovers). The level of significance was set as $P \leq .05$.

3 | RESULTS

The overall sample consisted of n = 2510 participants (53% females) with a mean age of 48.4 years (SD = 18.2; range: 14-94 years). The following table presents the distribution of body hair removal frequency in relation to gender, age, educational level, and geographic area in the German population (Table 1).

Body hair removal is carried out by both males and females. However, women are more likely to remove hair. In Germany, 918 (69%) of women remove body hair, in contrast to only 545 (41%) men. The gender effect is statistically significant (χ^2 = 203.43; df = 1; $P < .001$). Fifty-eight percent of all women remove axillary hair regularly (n = 815), 53% (n = 718) from the legs, 41% (n = 575) from the genital area, 9% (n = 126) from the upper arms, and 6% (n = 142) from the chest (see Figure 1). Removal of pubic hair is most common in men (25%, n = 307), followed by axillary (24%) (n = 217), chest (12%, n = 142), leg (3%, n = 43), and upper arm hair (2%, n = 30).

Younger women, in general, were more likely to remove body hair, especially those aged between 14 and 34 years. In detail, axillary hair removal is most frequently in women aged between 25 and 34 years (84%, n = 169) followed by women aged 14 to 24 years (81%, n = 108), women aged 35 to 44 years (80%, n = 178), and women aged 45 to 54 years (75%, n = 186). Women older than 55 years practise armpit hair removal significantly less than younger women (55-64 years = 53%, n = 122, 65-74 years = 24%, n = 43, up to 75 years = 7%, n = 9, Figure 2). According to young females, young men between 14 and 34 years remove most frequently body hair. Men aged 25 to 34 years are most active in removal of axillary hair (48%, n = 90), followed by men between 14 and 24 years (38%, n = 56), men between 35 and 44 years (32%, n = 52), and men between 45 and 54 years (26%, n = 55). Men older than 55 years are those that engage the least in armpits hair removal (55-64 years = 16%, n = 32, 65-74 years = 7%, n = 10, up to 75years = 3%, n = 3, Figure 2).

The majority of younger German women remove regularly their pubic hair. In detail, 70% of women aged 14 to 34 years (n = 233) remove their hair from the genital area, followed by women between 35 and 44 years (61%, n = 136), and women between 45 and 55 years (47%, n = 118). Older women practise the least pubic hair removal (women 55-64years = 29%, n = 67, 65-74years = 10%, n = 10, up to 75years = 3%, n = 4; Figure 3). With regard to men, youngsters between 25 to 34 years of age (48%, n = 90) were most actively engaged in pubic hair removal, followed by men between 14 and 24 years (40%, n = 59), between 35 and 44 years (36%, n = 60), and men between 45 and 54 years (25%, n = 54). Only seventeen percent of the 55 to 64 years old men (n = 35), 3% of the 65- to 74-year-old men (n = 5), and 4% of men older than 75 years (n = 4) removed regularly their pubic hair (Figure 3).

Bivariate χ^2 analyses were conducted to assess the association between gender, level of education, and urban-rural differences in people who remove ("Remover") their axillary or pubic hair with nonhair removers ("Nonremover").

Axillary hair removal was significantly associated with gender ($\chi^2(1) = 317.51$, $P < .001$, women (61%, n = 815), men (25%, n = 298)), level of education ($\chi^2(1)=27.58$, $P < .001$, high school (42%, n = 812), college (54%, n = 294)), and urban-rural regions ($\chi^2(1) = 4.85$, $P = .03$, country side (42%, n = 428), urban (46%, n = 685), Table 2). In accordance, pubic hair removal was significantly associated with gender ($\chi^2(1) = 76.67$, $P < .001$, women (43%, n = 575), men (26%, n = 307)), level of education ($\chi^2(1) = 28.74$, $P < .001$, high school (32%, n = 633),

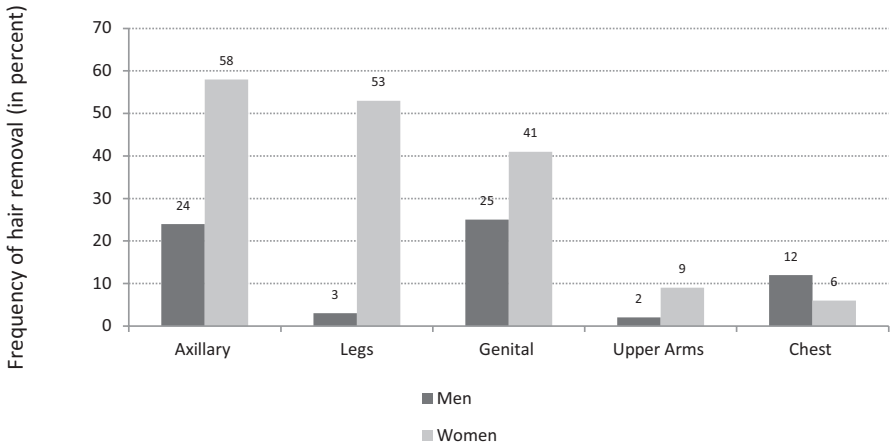

FIGURE 1 Body hair removal: Frequency (in percent) of hair removal assessed for different areas of the body and gender. Black bars: men; gray bars: women. Total cohort: n = 2510

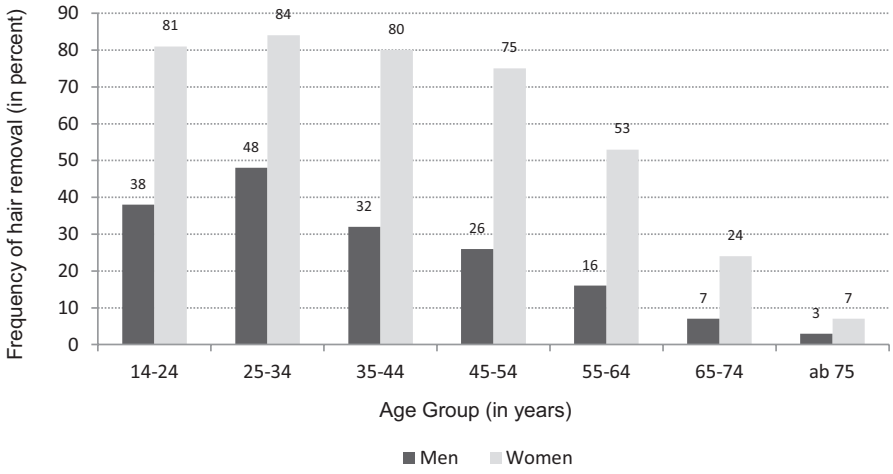

FIGURE 2 Removal of axillary hair: Frequency (in percent) of hair removal assessed for gender and age. Black bars: men; gray bars: women. Total cohort: n = 2510

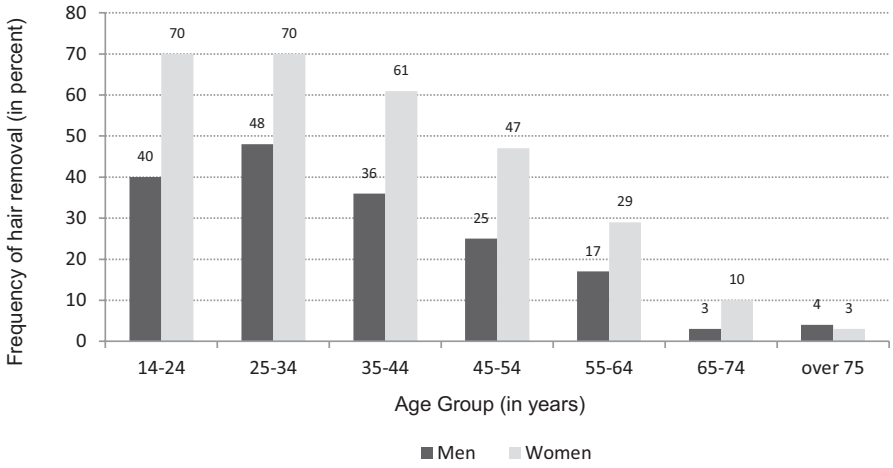

FIGURE 3 Removal of pubic hair: Frequency (in percent) of hair removal assessed for gender and age. Black bars: men; gray bars: women. Total cohort: n = 2510

TABLE 2 Bivariate analyses of gender, level of education, geographic area of people who remove ("Remover") their axillary or pubic hair with nonhair removers ("Nonremover")

	Axillary hair Remover vs Nonremover				Pubic hair Remover vs Nonremover			
	χ^2	*P*	%	N	χ^2	*P*	%	N
Gender	317.51	*P*<.001			76.60	*P*<.001		
Women			61%	n = 815			43%	n = 575
Men			25%	n = 298			26%	n = 307
Level of education	27.58	*P*<.001			28.74	*P*<.001		
High school			42%	n = 812			32%	n = 633
College			54%	n = 294			45%	n = 243
Geographic Area	4.85	*P*= .03			6.30	*P*= .01		
Country			42%	n = 428			32%	n = 331
Urban				n = 685			37%	n = 551

college (45%, n = 243)), and urban-rural regions ($\chi^2(1) = 6.30$, $P = .01$, country side (32%, n = 331), urban (37%, n = 551), Table 2).

Furthermore, several t tests for independent samples were conducted to compare different features of people who remove ("Remover") their axillary or pubic hair with nonhair removers ("Nonremover"). Comparisons were performed for age, body mass index, monthly income, and the subscales of FBeK. Results are presented in Table 3.

Individuals who removed their axillary hair were significant younger (M_{age} = 40.8, SD = 14.7) than nonremovers (M_{age} = 54.3, SD = 18.5), $t(2507.95) = 20.40$, $P < .001$. This was also true for

TABLE 3 t tests results comparing remover of axillary and pubic hair and nonremover

	Axillar hair				Pubic hair			
			Remover	NonRemover			Remover	NonRemover
	t-value	*P*	M (SD)	M (SD)	*t*-value	*P*	M (SD)	M (SD)
Age	20.40	*P*<.001	40.8 (14.7)	54.3 (18.5)	22.90	*P*<.001	38.8 (13.9)	53.5 (18.1)
Income	−3.29	*P*=.001	1887.35 (981.73)	1758.27 (920.95)	−1.82	*P*= .07	1864.82(1016.29)	1788.53 (911.92
BMI	6.40	*P*<.001	25.00 (4.59)	26.3 (4.68)	4.70	*P*<.001	25.15 (4.79)	26.0 (4.58)
FBeK								
Insecurity/discomfort	−3.70	*P*<.001	10.14 (4.35)	9.50 (4.23)	−2.66	*P*= .01	10.09 (4.34)	9.62 (4.26)
Attractiveness/self-esteem	1.98	*P*≤ .05	21.26 (3.77)	21.55 (3.56)	2.15	*P*= .03	21.20 (3.77)	21.54 (3.59)
Accentuation/sensitivity	−13.56	*P*<.001	13.37 (4.76)	10.85 (4.42)	−16.82	*P*<.001	14.09 (4.81)	10.82 (4.29)

the pubic hair removal cohort (M_{age} = 38.8, SD = 13.9) compared with nonremovers (M_{age} = 53.5, SD = 18.1), $t(2218.64) = 22.90$, $P < .001$. People who trimmed their axillary hair (M_{income} = 1887.35, SD = 981.73) earned significantly more money than nontrimmers (M_{income} = 1758.27, SD = 920.95; $t(2204.59) = -3.29$, $P < .001$) whereas pubic hair trimming persons (M_{income} = 1864.82, SD = 1016.29; $t(1566.95) = -1.82$, $P = .07$) did not earn significantly more money than nontrimmers (M_{income} = 1788.53, SD = 911.92).

Interestingly, the body mass index played a significant role for the tendency to remove body hair. People who removed their axillary and pubic hair had a significantly lower body mass index (axillary hair: M_{BMI} = 25.00, SD = 4.59; pubic hair: M_{BMI} = 25.15, SD = 4.79) compared with nonremovers (axillary hair: M_{BMI} = 26.3, SD = 4.68, $t(2363.93) = 6.40$, $P < .001$; pubic Hair M_{BMI} = 26.0, SD = 4.58, $t(1710.25) = 4.70$, $P < .001$).

The individual's body image has a significant influence if someone shapes one's body by hair removal or not. Significant differences on all FBeK subscales were found between people who removed their axillary or pubic hair and nonremovers (Table 3). There were highly significant differences on the Insecurity/Discomfort scale between removers of axillary hair ($M_{Insecurity/Discomfort}$ = 10.14, SD = 4.35) and nonremovers ($M_{Insecurity/Discomfort}$ = 9.50, SD = 4.23, $t(2346.32) = -3.70$, $P < .001$) and removers of pubic hair ($M_{Insecurity/Discomfort}$ = 10.09, SD = 4.34) and nonremovers ($M_{Insecurity/Discomfort}$ = 9.61, SD = 4.26, $t(1775.51) = -2.66$, $P < .01$).

With regard to the Accentuation/Sensitivity scale, highly significant differences were found between removers of armpits hair ($M_{Accentuation/Sensitivity}$ = 13.37, SD = 4.76) and nonremovers ($M_{Accentuation/Sensitivity}$ = 10.85, SD = 4.42), $t(2289.50) = -13.56$, $P < .001$). Similar results were found for removers of pubic hair ($M_{Accentuation/Sensitivity}$ = 14.09, SD = 4.81) who differed significantly from nonremovers ($M_{Accentuation/Sensitivity}$ = 10.81, SD = 4.299), $t(1638.09) = -16.82$, $P < .001$) and for the FBeK subscale Attractiveness/Self-esteem. Remover of axillary hair scored significantly lower on the Attractiveness/Self-esteem scale ($M_{Attractiveness/Self\text{-}esteem}$ = 21.26, SD = 3.77) than nonremovers ($M_{Attractiveness/Self\text{-}esteem}$ = 21.55, SD = 3.56), $t(2311.93) = 1.98$, $P \leq .5$), and removers of pubic hair scored significantly lower on the Attractiveness/Self-esteem scale ($M_{Attractiveness/Self\text{-}esteem}$ = 21.20, SD = 3.77) compared with nonremovers ($M_{Attractiveness/Self\text{-}esteem}$ = 21.54, SD = 3.59), $t(1727.85) = 2.15$, $P = .03$). Obviously, people who experience low self-esteem, insecurity, and low attractiveness are prone to shape their bodies by hair removal.

4 | DISCUSSION

In modern times, body modification is considered as common and socially accepted behavior. Our study evaluated body hair removal practices in a representative sample of men and women in Germany. Overall, the prevalence of axillary and pubic hair removal in men and women residing in Germany is substantial with 37%. Our findings

corroborate previous studies [4-6,16] in terms of the association between axillary and pubic hair removal and gender, age, educational level, income, and urban areas. Body hair removal is above all a women's issue in Germany. Younger age was associated with increased rates of body hair removal. The younger men and women were the more they were likely to shave and model their bodies. Our findings are in line with similar research carried out by Rowen et al [5] and Gaither et al [6] recently. Both groups found that younger age and female gender were a significant predictor for removal of pubic hair. According to previous studies, we found a positive association between body hair removal and income [1] or level of education.[5]

The higher socio-economic status of body hair removers suggests that those who remove regularly body hair refer to a stronger socially desirable behavior and body norms than nonremovers. In line with this, argumentation is the result of inverse association between body mass index and axillary and pubic hair removal habits. People who remove their body hair seem to pay more attention to the desired, lean weight body norms and, as a consequence, are less likely to be overweight in contrast to nonremovers. This is in accordance with the findings of Grossman and Annunziato [13] who found a stronger body ideal with lean measures in women who removed regularly their pubic hair.

Our study is unique in assessing the role of body experience and axillary or pubic hair removal. Indeed, we found a strong association between all dimensions of body experience measured by FBeK and hair removal habits. Removers of axillary and pubic hair showed significantly increased levels of Insecurity/Discomfort and of body Accentuation/Sensitivity and a significant lower level of bodily Attractiveness/Self-esteem compared with nonremovers. The significantly stronger Accentuation/Sensitivity of the body as well as the higher Insecurity/Discomfort level and the lower level of bodily Attractiveness/Self-esteem may be the result of a stronger focus on body norms among removers of body hair. By removing body hair regularly, those individuals try to correspond to the social body norms and to minimize their potential Insecurity or Discomfort concerning their body as a consequence of the strong body norm. Moreover, those individuals who practise removal of axillary and pubic hair seem to have a different attitude toward their bodies and selves. Obviously, the body is regarded as an object that can and should be actively shaped. By removing their body hairs, these individuals seem comply with cultural imperatives to engage in body work. Our results provide further evidence for the hypothesis that there is currently a "shift" from the previous body ideal which was hairy by nature to an increasingly hairless body image in the last two decades. Especially younger women remove their body hair for cosmetic purposes in Germany.

One drawback of this study is the use of the German language-based questionnaire FBeK to measure body experience. FBeK is one of the most frequently used German questionnaires in the field of body experience, and up-to-date standard values are available which facilitated the analyses of the study. Future studies investigating body image and experience among individuals which remove their body hair should include data from an internationally used body image questionnaire in order to guarantee a better global comparability of the findings. Despite of these limitations, the present findings suggest that body experience is important for understanding the motivation of removing body hair.

In summary, men and women in Germany increasingly are removing their axillary and pubic hair for cosmetic purposes, but this trend appears to occur within specific demographic groups of younger, better educated, and wealthy individuals. Removers of body hair seem to comply much more with cultural imperatives to engage in body work than nonremovers.

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CONFLICT OF INTEREST

This article does not contain any studies with human participants or animals performed by any of the authors.

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