

Prevalence and Characteristics of Vibrator Use by Men in the United States

Michael Reece, PhD, MPH,* Debra Herbenick, PhD, MPH,* Stephanie A. Sanders, PhD,^{†‡} Brian Dodge, PhD,* Annahita Ghassemi, PhD,[§] and J. Dennis Fortenberry, MD, MS[¶]

*Indiana University—Center for Sexual Health Promotion, Bloomington, IN, USA; †Indiana University—Kinsey Institute for Research in Sex, Gender, and Reproduction, Bloomington, IN, USA; ‡Indiana University—Department of Gender Studies, Bloomington, IN, USA; §Church & Dwight Co., Inc.—Princeton, NJ, USA; ¶Indiana University—Division of Adolescent Medicine, School of Medicine, Indianapolis, IN, USA

DOI: 10.1111/j.1743-6109.2009.01290.x

ABSTRACT

Introduction. While vibrating products have been recommended by clinicians for the treatment of male sexual dysfunctions, knowledge is lacking with regard to the prevalence of vibrator use among men in the United States, the characteristics of men who use vibrators, and whether there are relations between vibrator use and sexual function among men.

Aims. To establish lifetime and recent prevalence rates for vibrator use by men in the United States, to document the characteristics of men who use vibrators and their reasons for using vibrators, and to explore relations between men's vibrator use and sexual function.

Methods. During April 2008, data were collected from a population-based cross-sectional survey of 1,047 men aged 18–60 years in the United States. Analyses were conducted using poststratification data weights.

Main Outcome Measure. Measures included sociodemographics, health status and health-related behaviors, sexual behaviors, vibrator use, and sexual function.

Results. For both solo and partnered sexual activities, the prevalence of men who had incorporated a vibrator into sexual activities during their lives was 44.8%, with 10.0% having done so in the past month, 14.2% in the past year, and 20.5% over 1 year ago. Men who had used vibrators, particularly those with more recent use, were more likely to report participation in sexual health promoting behaviors, such as testicular self-exam. Men who had used vibrators recently also scored higher on four of the five domains of the International Index of Erectile Function (erectile function, intercourse satisfaction, orgasmic function, and sexual desire).

Conclusions. Among men in the United States, vibrator use during solo and partnered sexual interactions is common and is associated with a wide array of positive sexual health characteristics. Future research should continue to explore ways in which men incorporate vibrators into solo sexual acts, partnered sexual play, and sexual intercourse. **Reece M, Herbenick D, Sanders SA, Dodge B, Ghassemi A, and Fortenberry JD. Prevalence and characteristics of vibrator use by men in the United States. J Sex Med 2009;6:1867–1874.**

Key Words. Vibrator; Sexual Function; Men; Quality of Life

Introduction

Although vibrating devices have been recommended by medical professionals and therapists for the treatment of primary and secondary male sexual dysfunctions [1–5], little is known about the prevalence of vibrator use by men, the characteristics of male vibrator users, and relationships between men's vibrator use and sexual func-

tion. Data from the 1992 National Health and Social Life Survey suggest that about one-fifth of men aged 18–59 found using a vibrator or dildo to be somewhat or very appealing, but only 2% indicated that they had purchased such a product during the past 12 months [6]. Since the time of that study, vibrators and other sexual enhancement products have become increasingly available through a range of retail outlets [7–10]. More

recent data from a nationally representative survey conducted in Australia showed that 12% of men reported having used a sex toy in the previous year [11]. A random-digit dial survey in Seattle found that 20.3% of men reported having used a sexual enhancement product (defined as “vibrators, beads and balls, dildos, pumps, extenders, or rings”) during a typical 4-week period [12].

Some information about the use of vibrators by men has also been available from studies conducted among women. The proportions of female vibrator users who had used a vibrator with their partner have ranged from approximately 40% (in a nationally representative sample) [13] to nearly three-quarters (in a convenience sample) [14]. In the latter study, 39% of the heterosexual women indicated that their partner was orgasmic with partnered vibrator use, and about one-third of the total sample indicated that their partner had used the woman’s vibrators to masturbate themselves.

Aims

The purpose of this study was to document, in a nationally representative sample of adult men in the United States, the prevalence of their lifetime and recent vibrator use, the characteristics of men who use vibrators and the sexual situations in which they have used them, their reasons for vibrator use, and relationships between men’s vibrator use and sexual function.

Methods

During April 2008, data were collected from a population-based cross-sectional survey of 1,047 men aged 18–60 years in the United States via a research panel from Knowledge Networks (Menlo Park, California). Knowledge Networks has established research panels based on random digit dialing methods that provided a nonzero probability selection of U.S. households with a telephone, and that are statistically adjusted monthly based on updates from the U.S. Census Bureau. All data are collected by Knowledge Networks via the Internet; all participants in a given Knowledge Networks panel are provided with access to the Internet and hardware if needed. Researchers have used Knowledge Networks for multiple health-related studies, substantiating the validity of such methods for obtaining data from nationally representative samples of the U.S. population [15–19].

A total of 1,900 male panel members were invited to participate in the study. These individu-

als received an e-mail indicating that this was a study related to sexual health and sexual behavior. Up to three e-mail reminders and one telephone reminder were sent. Of those invited to participate, 64.2% (n = 1,219) responded to the recruitment message, with 85.9% of those (n = 1,047) consenting and completing the study instrument. This resulted in a response rate of 55.1%.

During analyses, poststratification data weights were used to reduce variance and minimize bias due to nonsampling error. Distributions for age, race, gender, Hispanic ethnicity, education, and U.S. census region were used in the poststratification adjustment. All study protocols were approved by the Institutional Review Board of the authors’ academic institution.

Main Outcome Measures

Participants completed items related to socio-demographics, health status and health-related behaviors, sexual behaviors and vibrator use, and sexual function. Sociodemographic measures included those related to age, gender, ethnicity, geographic location, marital and relationship status, household income, parental status, religiosity, and political orientation. Health status measures included those related to physical and mental quality of life using the 4-item Healthy Days Core Module from the Centers for Disease Control and Prevention (CDC) health-related quality of life measure (HRQOL-4) [20], a widely validated set of survey measures used to assess a person’s sense of well-being through four items [21–26]. In addition, we assessed history of participation in self- and provider-administered sexual health-related screenings and exams.

Men were asked to respond to questions about characteristics of their partnered sexual activities and self-masturbation during the 4 weeks prior to the study. Men were asked to describe the extent to which they had used vibrators, and the nature of their use, for partnered and solo sexual activities during the past month, past year, and lifetime. For these time periods, men reported whether they had used vibrators while masturbating alone, during sexual play or foreplay with a partner, and during sexual intercourse with a partner. Men who had used vibrators in their lifetime also responded to questions related to patterns of cleaning vibrators before and after use.

To assess sexual function, men completed the International Index of Erectile Function (IIEF) [27], a 15-item measure with established reliability

and validity that has been widely used to assess five domains of male sexual function, including erectile function, orgasmic function, sexual desire, intercourse satisfaction, and overall satisfaction [28–32].

Results

Participant Description

Demographic characteristics of this sample were highly consistent with the 2007 population estimates of the U.S. Census Bureau. Table 1 provides an overview of participant characteristics before and after the application of the post-stratification data weights.

Sexual Behaviors

Of the 1,047 participants, 1,042 (99.5%) completed items related to solo masturbation and partnered sexual activities during the previous 4 weeks. Most participants (66.6%, $n = 693$) had been sexually active with at least one other person during this time. Of these, men reported the gender of their sexual partners ($n = 670$); the vast majority (92.5%, $n = 641$) had been sexually active only with women, 3.1% ($n = 21$) only with other men, and approximately 1% ($n = 8$) with both men and women.

Most men reported having masturbated alone during the 4 weeks prior to the study (69.2%, $n = 720$). The largest proportion reported masturbating on average 1–3 days per week (31.9%, $n = 330$), followed by those doing so less than once per week (21.6%, $n = 224$), most days of the week (10.6%, $n = 109$), and daily (5.1%, $n = 53$).

Vibrator Use

For the 1,022 men who responded to all vibrator behavior questions, a composite variable was created to assess their total vibrator use during solo and partnered sexual activities, indicating that close to half of men (44.8%, $n = 457$) had used a vibrator during sexual activity at some point in their lives, with 10.0% ($n = 103$) having done so in the past month, 14.2% ($n = 145$) in the past year, and 20.5% ($n = 209$) over 1 year ago.

When vibrator use was examined within the context of specific sexual behaviors, the most frequent vibrator use by men occurred during sexual play or foreplay with a partner, with 40.5% ($n = 415$) reporting this behavior. Over one-third (36.0%, $n = 369$) reported using a vibrator during sexual intercourse, and 16.6% ($n = 170$) during

solo masturbation. Table 2 provides an overview of the recency of vibrator use during specific sexual behaviors.

Participant Characteristics and Vibrator Use

Men who had used vibrators were more likely to be married or living with their sexual partner ($P < 0.001$) and to be employed full time ($P < 0.01$). They were also more likely to be in the 30–44 year age ($P < 0.001$), yet the mean ages of men within each of the four vibrator use categories (past month, past year, >1 year ago, and never) were not significantly different. Vibrator users were less likely to report attending religious services on a weekly basis ($P < 0.01$), or to identify their political orientation as conservative ($P < 0.01$).

Slightly elevated rates of past vibrator use were observed among men who identified as bisexual (66.7%) or gay (50.0%) compared with heterosexually identified men (44.5%), yet these proportions were not significantly different. History of vibrator use was not significantly associated with any other sociodemographic characteristics, including ethnicity, education, income level, geographic area of residence, or whether participants lived in a metropolitan statistical area.

Reasons for Vibrator Use

Men who had used vibrators were asked to describe reasons that they started to do so. Most frequently reported was that they started using a vibrator “for fun,” which was reported by 66.7% ($n = 280$), with 51.9% ($n = 218$) indicating “to spice up my sex life,” 47.7% ($n = 200$) reporting “curiosity,” 39.6% ($n = 166$) to help their partner have an orgasm, and 31.4% ($n = 132$) upon a sexual partner’s request. A small proportion of men started using a vibrator to help themselves have an orgasm (6.8%, $n = 29$).

Vibrator Hygiene

More men reported cleaning vibrators after using them (73.2%, $n = 334$) than before (59.9%, $n = 274$); however, more than half of male vibrator users (53.4%, $n = 244$) cleaned them both before and after use. Of those who only cleaned before or after use, more cleaned only after use (19.8%, $n = 91$) than only before use (6.6%, $n = 30$). Men who had cleaned are more likely to do so with soap and water (55.2%, $n = 252$) than a commercial cleaner (9.7%, $n = 44$).

Table 1 Participant characteristics (N = 1,047)

Participant characteristics	Unweighted (N = 1,047)		Weighted (N = 1,047)	
	%	N	%	n
Age				
18–24	9.5	93	14.7	154
25–34	17.5	171	21.5	225
35–44	29.7	290	26.4	276
45–54	26.9	263	23.0	241
55–60	16.5	161	14.4	151
Ethnicity				
White, non-Hispanic	76.2	798	67.5	707
Black, non-Hispanic	8	84	11.0	115
Hispanic	6.9	72	14.6	152
Other, non-Hispanic	8.9	93	6.9	73
Education				
Bachelors degree or higher	34.8	361	27.8	291
Some college	30.1	315	27.7	290
High school graduate	27.1	284	31.8	333
Less than high school	8	84	12.8	134
Sexual orientation (n = 1,043; 1,039)				
Heterosexual	95.1	992	94.9	985
Bisexual	1.5	16	1.6	16
Homosexual	2.8	29	2.8	29
Other	0.6	6	0.8	8
Marital status				
Married	53.1	556	44.0	461
Never married	23.3	244	29.4	308
Divorced	12	126	13.3	140
Living together—not married	8.8	92	9.5	99
Separated	2.2	23	2.4	25
Widowed	0.6	6	1.3	14
Geographic region of United States				
Northeast	18.1	190	18.4	193
Midwest	24.5	256	21.9	230
South	34.9	365	35.9	375
West	22.5	236	23.8	249
MSA status				
Metropolitan area	83.4	873	84.1	880
Nonmetropolitan area	16.6	174	15.9	167
Annual household income				
Less than \$25,000	18.2	191	23.4	245
\$25,000–\$49,999	22.2	232	25.1	263
\$50,000–\$74,999	20.7	217	19.5	204
Over \$75,000	38.9	407	32.0	335
Children under 18 in household				
No	67.7	709	68.9	721
Yes	32.3	338	31.1	326
Social ideology (n = 1,044; 1,040)				
Liberal	25.6	267	25.9	270
Moderate	36.6	382	36.8	383
Conservative	37.8	395	37.2	387
Religious service attendance (n = 882)				
Never	14.2	125	16.0	141
Once per year or less	22.6	199	23.4	207
Few times per year	19.7	174	19.2	169
Once or twice per month	7.9	70	8.6	76
Weekly	24	212	22.0	194
More than once per week	11.6	102	10.8	95

MSA = metropolitan statistical area.

One-fifth of vibrator users (20.2%, n = 92) reported never cleaning the vibrator before or after using.

Vibrator Use and Sexual Health Care

The majority of men (59.3%, n = 621) reported having had a physical exam by a health care pro-

vider within the past year; however, less than half (40.9%, n = 427) had performed a testicular self-exam during the past month or a more general genital self-exam (41.7%, n = 435). Men who reported performing testicular self-exams within the past month were more likely to have used a vibrator (50.7%, n = 213) than those men who

Table 2 History of vibrator use by men (weighted)

Context of vibrator use	History of vibrator use							
	Past month		Past year		More than year ago		Never	
	%	n	%	n	%	n	%	n
Used vibrator masturbating alone (n = 1,026)	2.0	20	4.3	44	10.3	106	83.4	856
Used vibrator sexual play with a partner (n = 1,022)	7.6	78	12.3	126	16.1	165	64.0	654
Used vibrator sexual intercourse with a partner (n = 1,026)	8.6	88	12.6	129	19.3	198	59.5	609

had not performed such exams (49.3%, n = 207) ($\chi^2 = 9.54$, $P = 0.002$).

Vibrator Use and Health-Related Quality of Life

HRQOL (CDC HRQOL-4) was compared between men according to history and recency of vibrator use. There were no statistically significant differences between the four groups in the proportions of men in each group that reported good or excellent health (range 89.0–91.4% across groups). Additionally, men across the four categories of vibrator use reported similar, and not significantly different, numbers of physically and mentally “unhealthy” days and activity limited days in the previous month. Table 3 provides an overview of the health-related quality of life indicators by vibrator use history.

Vibrator Use and Sexual Function

While adjusting for age, men’s scores on the IIEF were compared by domain across the four groups

of vibrator use history. Generally, men who had used vibrators reported fewer problems with sexual function than men who had never used vibrators, and this difference was more profound among men who had used vibrators more recently. Table 4 provides an overview of these sexual function scores.

Erectile Function

A score of less than 25 on the erectile function domain (IIEF-EF) was used as a cut-off for the presence of erectile dysfunction (ED), and established cut-off scores were used to calculate ED severity. Overall, slightly over one-third (35.4%) of the men were classified as having some level of dysfunction, including 6.7% (n = 61) with severe ED (IIEF-EF score <10), 20.7% (n = 189) moderate ED (IIEF-EF score 11–16), 3.6% (n = 33) mild/moderate ED (IIEF-EF score 17–21), and 7.1% (n = 64) mild ED (IIEF-EF score 22–25). ED level varied by age, with the largest propor-

Table 3 Health-related quality of life (HRQOL) by vibrator use history (weighted)

Healthy days measures (HRQOL)	History of vibrator use					P
	Total sample	Past month	Past year	>1 year ago	Never	
Proportion reporting good to excellent health (%) (n = 1,047)	89.7	91.2	91.4	90.4	89	0.81
Number of physically unhealthy days past month (mean) (n = 1,013)	3.11 (6.87)	3.15 (5.98)	4.16 (7.64)	3.16 (7.20)	2.81 (6.69)	0.26
Number of mentally unhealthy days past month (mean) (n = 1,010)	3.38 (7.23)	4.49 (8.77)	4.10 (8.34)	3.64 (7.35)	2.89 (6.50)	0.27
Number of activity limiting days past month (mean) (n = 1,014)	2.04 (5.96)	2.43 (7.98)	2.37 (6.05)	2.19 (6.18)	1.64 (5.37)	0.21

Table 4 Mean age-adjusted IIEF dimension scores (weighted) by vibrator use history

Sexual function domains	Mean scores by vibrator use history				F	P
	Past month (n = 110)	Past year (n = 154)	>1 year ago (n = 196)	Never used (n = 557)		
Erectile function (range 1–30) (n = 873)	21.82 _a	21.92 _a	19.90 _b	19.54 _b	10.80	<0.001
Intercourse satisfaction (range 0–15) (n = 873)	11.12	10.58 _a	8.23 _b	8.20 _b	14.10	<0.001
Orgasmic function (range 0–10) (n = 755)	9.22 _a	9.13 _a	8.55 _a	7.50 _b	15.46	<0.001
Sexual desire (range 2–10) (n = 983)	8.30 _a	7.69 _a	7.56 _b	7.22 _b	9.70	<0.001
Overall satisfaction (range 2–10) (n = 755)	7.86 _a	7.11 _a	7.26 _b	7.87 _a	5.25	0.001

Means in same row within IIEF dimension categories that do not share subscripts differ at $P < 0.05$ in the Tukey honestly significant difference comparison. IIEF = International Index of Erectile Function.

tions of those meeting criteria for severe and moderate dysfunction being those over the age of 45 years ($\chi^2 = 54.65$, $P < 0.001$).

IIEF-EF scores between past month and past year vibrator users were not significantly different, but past month users had significantly higher scores on this domain (indicating fewer problems with erectile function) than those who had used more than 1 year ago, and both past month users and past year users scored higher than never users ($F [3, 873] = 10.80$, $P < 0.001$).

Intercourse Satisfaction

On the intercourse satisfaction domain, past month and past year users scored similarly, yet past month users and past year users both scored significantly higher (indicating greater satisfaction) than men who had used a vibrator more than one year ago and men who had never used a vibrator ($F [3, 873] = 14.10$, $P < 0.001$).

Orgasmic Function

With regard to the orgasmic function domain, there were no differences between the three groups of men who had a history of vibrator use, but men in each of these groups (past month, past year, more than one year ago) each had scores that were significantly higher than those of men who had never used a vibrator ($F [3, 755] = 15.46$, $P < 0.001$).

Sexual Desire

In terms of sexual desire, past month users scored significantly higher than did those who had used a vibrator more than one year ago, and both past month and past year vibrator users had scores that were significantly higher than those of men who had never used a vibrator ($F [3, 983] = 9.70$, $P < 0.001$).

Overall Satisfaction

Patterns observed on this domain were somewhat different than those on other domains of the IIEF. Men with the lowest scores on this domain were those who had used a vibrator more than year ago; these men had scores that were significantly lower than men who had used a vibrator within the past month and men who had never used a vibrator. The scores on this domain for men who had used a vibrator within the past year but not within the past month were not significantly different from the scores of men in any other vibrator history group ($F [3, 755] = 5.25$, $P = 0.001$).

Discussion

The purpose of this study was to establish prevalence rates for the use of vibrators by men in the United States and to describe the characteristics of men who have used vibrators and sexual situations in which men have used them, and to assess relations between vibrator use and health-promoting behaviors, physical and mental well-being, and male sexual function.

Vibrator use by men during solo and partnered sexual interactions is prevalent, with 44.8% of men in the United States reporting use during their lifetime, and 24.2% reporting use during the last year. Vibrator use was more prevalent during interactions with female partners than during masturbation alone, and during partnered sexual play than during intercourse.

Although not statistically significant, slightly higher proportions of gay and bisexual men reported past vibrator use than heterosexual men. However, men who recently used vibrators during masturbation were more likely to identify as heterosexual and to report having only female sexual partners during the same time period. When asked why they started to use a vibrator, approximately 30% reported doing so at the request of their sexual partner, 40% to help their partner have an orgasm, and over 50% did so simply to "spice up their sex life." These findings, combined with the finding that vibrator use more frequently occurred during partnered interactions than masturbation, may suggest that women play an important role in driving the vibrator use of men, which helps to account for some of these differences observed across sexual orientation groups. Recent data indicate that 52.5% of women in the United States have used a vibrator, and approximately 40% have done so with a sexual partner [13]. It is not surprising that vibrator use appears to be more prevalent among women than men, particularly given the extent to which they are more frequently marketed to women through diverse and often women-focused venues (e.g., in-home sex toy parties) and often recommended as an adjunct to treatment for female sexual dysfunction [3,7–10,33–38].

Men who had used vibrators, particularly more recently, were more likely to have reported participation in sexual health care-seeking behaviors, such as testicular self-exams, and they were generally as healthy in terms of quality of life, both physically and mentally, as men who have not used vibrators. Additionally, men who had used vibrators more recently scored higher on four of five domains of

the IIEF. Perhaps more insightful given the month-specific nature of both measures, this was particularly the case for men who had used a vibrator within the past 4 weeks. Given the cross-sectional nature of this data, it is impossible to determine the full nature of the relationship between sexual function and vibrator use. Causal relationships between these factors cannot be examined in this study, yet these data provide the impetus for the further exploration of these issues using more experimentally oriented and/or event-specific designs.

That vibrator use is rather common leads us to consider the need to answer additional questions about men and vibrator use. Future research should explore how men are actually using vibrators, both on their own and partners' bodies, in terms of the nature of the contact between the vibrator and the genitals or anus and the duration and intensity of use. It would also be helpful to understand whether a sexual experience is enhanced for men only by direct vibrator stimulation or if stimulation of a partner can lead to sexual enhancement for both partners. Of particular clinical relevance would be relations between these factors and erectile function, ejaculatory control, pleasure, and orgasm. Additionally, a better understanding of how couples incorporate vibrators into their sexual activities could be helpful to providers who may want to recommend vibrators to couples in which one or both partners is vibrator naïve.

Conclusions

This is the first study of prevalence rates of vibrator use by men in a U.S. population based study. Vibrator use is common among men and is related to sexual health and functioning. Clinicians, therapists, and educators should be mindful that many men are incorporating vibrators into their solo and partnered sexual activities, and consider how this might affect sexual history taking, interventions, and education.

Acknowledgement

This study was funded by Church & Dwight Co., Inc., the maker of Trojan brand condoms.

Corresponding Author: Michael Reece, PhD, MPH, Indiana University—Center for Sexual Health Promotion, 1025 East Seventh Street, HPER 116, Bloomington, IN 47405, USA. Tel: 812-855-0068; Fax: 812-855-3936; E-mail: mireece@indiana.edu

Conflict of Interest: One of the authors (AG) works for Church & Dwight Co., Inc., the entity that funded this research study.

Statement of Authorship

Category 1

(a) Conception and Design

Michael Reece; Debra Herbenick; Stephanie A. Sanders; J. Dennis Fortenberry; Annahita Ghassemi; Brian Dodge

(b) Acquisition of Data

Michael Reece; Debra Herbenick

(c) Analysis and Interpretation of Data

Michael Reece; Debra Herbenick; Stephanie A. Sanders

Category 2

(a) Drafting the Article

Michael Reece; Debra Herbenick

(b) Revising It for Intellectual Content

Michael Reece; Debra Herbenick; Stephanie A. Sanders; J. Dennis Fortenberry; Annahita Ghassemi; Brian Dodge

Category 3

(a) Final Approval of the Completed Article

Michael Reece; Debra Herbenick; Stephanie A. Sanders; J. Dennis Fortenberry; Annahita Ghassemi; Brian Dodge

References

- 1 Cameron A, Rosen RC, Swindle RW. Sexual and relationship characteristics among an Internet-based sample of U.S. men with and without erectile dysfunction. *J Sex Marital Ther* 2005;31:229–42.
- 2 Nelson CJ, Ahmed A, Valenzuela R, Parker M, Mulhall J. Assessment of penile vibratory stimulation as a management strategy in men with secondary retarded orgasm. *Urology* 2007;69:552–55.
- 3 Rowland DL, den Ouden AH, Slob AK. The use of vibrotactile stimulation for determining sexual potency in the laboratory in men with erectile problems: Methodological considerations. *Int J Impot Res* 1994;6:153–61.
- 4 Sonksen J, Ohl DA. Penile vibratory stimulation and electroejaculation in the treatment of ejaculatory dysfunction. *Int J Androl* 2002;25:324–32.
- 5 Courtois F, Charvier K, Leriche A, Vézina JG, Côté I, Raymond D, Jacquemin G, Fournier C, Bélanger M. Perceived physiological and orgasmic sensations at ejaculation in spinal cord injured men. *J Sex Med* 2008;5:2419–30.
- 6 Michael RT, Gagnon J, Laumann E, Kolata G. *Sex in America: A definitive survey*. Boston: Little, Brown; 1994.
- 7 Leiblum S. Women, sex and the Internet. *Sex Relat Ther* 2001;16:389–404.
- 8 Loe M. Feminism for sale: Case study of a pro-sex feminist business. *Gend Soc* 1999;13:705–32.
- 9 Curtis D. Commodities and sexual subjectivities: A look at capitalism and its desires. *Cult Anthropol* 2004;19:95–121.

- 10 Reece M, Herbenick D, Sherwood-Puzzello C. Sexual health promotion and adult retail stores. *J Sex Res* 2004;41:173–80.
- 11 Richters J, Grulich AE, deVisser RO, Smith AMA, Rissel CE. Autoerotic, esoteric and other sexual practices engaged in by a representative sample of adults. *Aust N Z J Public Health* 2003;27:180–90.
- 12 Foxman B, Aral SO, Holmes KK. Common use in the general population of sexual enrichment aids and drugs to enhance sexual experience. *Sex Transm Dis* 2006;33:156–62.
- 13 Herbenick D, Reece M, Sanders SA, Dodge B, Ghassemi A, Fortenberry JD. Vibrator use by women in the United States: results from a nationally representative study. *J Sex Med*. In press.
- 14 Davis CM, Blank J, Lin HY, Bonillas C. Characteristics of vibrator use among women. *J Sex Res* 1996; 33:313–20.
- 15 Validity of the survey of health and Internet and Knowledge Network's panel and sampling. May Stanford, CA: Stanford University; 2003.
- 16 Baker L, Wagner TH, Singer S, Bundorf MK. Use of the Internet and e-mail for health care information: Results from a national survey. *JAMA* 2003; 289:2400–6.
- 17 Heiss F, McFadden D, Winter J. Who failed to enroll in Medicare Part D, and why? Early results. *Health Aff (Millwood)* 2006;25:344–54.
- 18 Holman EA, Silver RC, Poulin M, Andersen J, Gil-Rivas V, McIntosh DN. Terrorism, acute stress, and cardiovascular health: A 3-year national study following the September 11th attacks. *Arch Gen Psychiatry* 2008;65:73–80.
- 19 Silver RC, Holman EA, McIntosh DN, Poulin M, Gil-Rivas V. Nationwide longitudinal study of psychological responses to September 11. *JAMA* 2002;288:1235.
- 20 Centers for Disease Control and Prevention. Measuring healthy days. Atlanta, GA: Centers for Disease Control and Prevention; 2000.
- 21 Centers for Disease and Control Prevention. Health-related quality of life among persons with epilepsy—Texas 1998. *MMWR* 2001;50:24–6.
- 22 Centers for Disease Control and Prevention. State differences in reported Healthy Days among adults—United States, 1993–1996. *MMWR* 1998; 47:239–44.
- 23 Centers for Disease Control and Prevention. Community indicators of health-related quality of—United States, 1993–1997. *MMWR* 2000;49: 281–5.
- 24 Ahluwalia IB, Holtzman D, Mack KA, Mokdad A. Health-related quality of life among women of reproductive age: Behavioral Risk Factor Surveillance System (BRFSS), 1998–2001. *J Womens Health* 2003;12:5–10.
- 25 Andresen EM, Catlin TK, Wyrwich KW, Jackson-Thompson J. Retest reliability of surveillance questions on health related quality of life. *J Epidemiol Community Health* 2003;57:339–43.
- 26 Moriarty D, Zack M, Kobau R. The Centers for Disease Control and Prevention's Healthy Days Measures—Population tracking of perceived physical and mental health over time. *Health Qual Life Outcomes* 2003;1:37.
- 27 Rosen RC, Riley A, Wagner G, Osterloh IH, Kirkpatrick J, Mishra A. The international index of erectile function (IIEF): A multidimensional scale for assessment of erectile dysfunction. *Urology* 1997; 49:822–30.
- 28 Cameron A, Rosen RC, Swindle RW. Sexual and relationship characteristics among an Internet-based sample of U.S. men with and without erectile dysfunction. *J Sex Marital Ther* 2005;31:229–42.
- 29 Ferguson GG, Nelson CJ, Brandes SB, Shindel AW. The sexual lives of residents and fellows in graduate medical education programs: A single institution survey. *J Sex Med* 2008;5:2756–65.
- 30 Rosen RC, Cappelleri JC, Gendrano N 3rd. The International Index of Erectile Function (IIEF): A state-of-the-science review. *Int J Impot Res* 2002; 14:226–44.
- 31 Nelson CJ, Shindel AW, Naughton CK, Ohebshalom M, Mulhall JP. Prevalence and predictors of sexual problems, relationship stress, and depression in female partners of infertile couples. *J Sex Med* 2008;5:1907–14.
- 32 Shindel AW, Ferguson GG, Nelson CJ, Brandes SB. The sexual lives of medical students: A single institution survey. *J Sex Med* 2008;5:796–803.
- 33 Herbenick D, Reece M, Sanders SA, Fortenberry JD, Dodge B, Ghassemi A. Women's sexual function and vibrator use are positively related: Data from a nationally representative sample of women in the United States. Meeting of the International Society for the Study of Women's Sexual Health Florence, Italy; 2009.
- 34 LoPiccolo J, Lobitz C. The role of masturbation in the treatment of orgasmic dysfunction. *Arch Sex Behav* 1972;2:163–71.
- 35 Phillips NA. Female sexual dysfunction: Evaluation and treatment. *Am Fam Physician* 2000;62:127–36.
- 36 Leiblum S, Nathan S. Persistent sexual arousal syndrome in women: A not uncommon but little recognized complaint. *Sexual and Relationship Ther* 2002;17:191–8.
- 37 Brotto LA, Heiman JR, Goff B, Greer B, Lentz GM, Swisher E, Tamimi H, Van Blaricom A. A psychoeducational intervention for sexual dysfunction in women with gynecologic cancer. *Arch Sexual Behav* 2008;37:317–29.
- 38 Struck P, Ventegodt S. Clinical holistic medicine: teaching orgasm for females with chronic anorgasmia using the Betty Dodson method. *Scientific-WorldJournal* 2008;8:883–9.