Nipple/Breast Stimulation and Sexual Arousal in Young Men and Women

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ABSTRACT

Introduction. The role of nipple/breast stimulation in influencing sexual arousal in men and women during lovemaking has only been the subject of opinion-based comment rather than evidence-based study. No attempt to question people about such sexual behavior has ever been undertaken.

Aim. The study was designed to ascertain the effects of nipple/breast manipulation in young men and women on their sexual arousal.

Methods. A short questionnaire about nipple/breast stimulation during sexual activity was administered to 301 (148 men; 153 women) sexually experienced undergraduates (age range 17–29 years, 95% between 18 and 22).

Main Outcome Measures. Replies to questions in questionnaire.

Results. The major findings in regard to the women were that 81.5% reported that stimulation of their nipples/breasts caused or enhanced their sexual arousal, 78.2% agreed that when sexually aroused such manipulation increased their arousal, 59.1% had asked to have their nipples stimulated during lovemaking, and only 7.2% found that the manipulation decreased their arousal. In regard to the men, 51.7% reported that nipple stimulation caused or enhanced their sexual arousal, 39% agreed that when sexually aroused such manipulation increased their arousal, only 17.1% had asked to have their nipples stimulated, and only 7.5% found that such stimulation decreased their arousal.

Conclusion. Manipulation of the nipples/breasts causes or enhances sexual arousal in approximately 82% of young women and 52% of young men with only 7–8% reporting that it decreased their arousal. **Levin R, and Meston C. Nipple/breast stimulation and sexual arousal in young men and women. J Sex Med 2006;3:450–454.**

Key Words. Neurophysiological Studies of Sexual Function; Central Nervous System Control; Sexual Physiology; Sexual Biochemistry

A brief report of the study (Levin RJ, Meston C. Nipple stimulation and sexual arousal in young men and women [abstract]. J Sex Med 2006;3(suppl 3):247.) was presented at the European Society of Sexual Medicine meeting at Copenhagen, December 2005.

Introduction

Nipple and breast stimulation is a frequent characteristic of human sexual activity especially employed by men [1] during the early stages of lovemaking (so-called foreplay) to induce in women sexual arousal. Kinsey et al. [2] claimed, however, that "while this stimulates the male erotically . . . the significance for the female has probably been overestimated." It was also claimed that "relatively few females even try to stimulate the breasts of their partners." These opinions were voiced over 50 years ago and appear to be authority-based rather than evidence-based. There is little or nothing in the literature on the possible enhancement of sexual arousal in women and especially in men created by breast or nipple manipulation. It was thus thought useful to establish by a brief questionnaire the present status of breast/nipple stimulation among young men and women in relation to the induction/enhancement of sexual arousal.

Methods

Participants

A total of 371 undergraduate students (180 men, 191 women) at the University of Texas at Austin participated in this study in exchange for course credit. Participants were enrolled in either the 2003–2004 Fall sessions (September–December) or the 2004 Spring session (January–May). Data from participants who reported being sexually inexperienced (defined as not having ever experienced sexual intercourse) were excluded from further analyses (N = 70). The final sample size was 148 men and 153 women. Participants varied in age from 17 to 29 years (95% between 18 and 22), and mean age was 19.23 years (SD = 1.5) and 18.78 years (SD = 1.2) for men and women, respectively. The sample consisted of 56% Caucasian, 7% African American, 22% Hispanic, 14% Asian American, <1% Native American, and 1% "other ethnicity" participants. Ethnicity was determined with the question, "What ethnicity do you most identify with?"

Procedures

Participants were administered a brief questionnaire consisting of questions inquiring about their sexual arousal response to breast/nipple stimulation and a demographics questionnaire. Female participants were also asked whether they had ever received breast surgery. Participants responded using a "Yes/No" response format.

The questionnaires were administered in small groups of 5–10 same-sex individuals. To preserve privacy, participants were given either partitions or several feet of space from other participants. Participants were informed of the sexual nature of the study before they applied to participate. Same-sex researchers informed participants of the sexual material, obtained consent, administered questionnaire packets, and answered participant questions that arose during testing. Confidentiality was protected by assigning each participant with a randomized code number connected to all of his or her data, and consent forms were kept in a separate file. To help assure anonymity, upon completion, questionnaire packets were inserted into a large "drop box" as participants exited the testing room. This study was approved by the Human Subjects Ethics committee at the University of Texas at Austin.

Statistical assessments of any significant differences ($P > 0.05$) among the data were undertaken using Likelihood ratios, a test used to analyze categorical data [3].

Results

One woman reported having had breast augmentation surgery. Data from her questionnaire were excluded from further analyses as it is unclear to what degree breast augmentation surgery may affect nipple/breast sensitivity.

Regarding women, 81.5% reported that nipple/breast stimulation caused or enhanced their sexual arousal, and that when they were sexually aroused nipple/breast stimulation increased their arousal. Only 7.2% reported that such stimulation caused a decrease in their arousal. Some 59.1% of the women have actively asked for the stimulation from their partners, and some 37.7% desired to have them stimulated but were not able to ask for it to be undertaken (presumably from shyness, or not wanting to appear too demanding).

In the case of men, like women, nipple stimulation was excitatory for their sexual arousal but the percentage was less than in women (51.7% compared with 81.5%). Results from Likelihood ratios indicated that this gender difference was significant, $L^2 = 30.67$, $P < 0.001$. Thirty-nine percent of men (compared with 78.2% of women) reported that nipple stimulation increased their arousal when they were sexually aroused. This gender difference was also significant ($L^2 = 46.27$, $P < 0.001$). Virtually, the same percentage of men (7.5%) as women (7.2%) found that nipple stimulation decreased their arousal when sexually aroused ($L^2 = 1.43$, $P = 0.49$). A significantly smaller percentage of men than women asked for their nipples to be stimulated (17.1% vs. 59.1%, $L^2 = 61.2$, $P < 0.001$), and a significantly smaller percentage would like to have the stimulation but did not want to ask for it (19.8% vs. 37.7%, $L^2 = 6.03$, $P < 0.05$) (Table 1).

Discussion

The majority of women surveyed (81.5%) reported that stimulation of their nipples/breasts caused or enhanced sexual arousal and increased their arousal once they were already sexually aroused. Although a comparatively lower proportion compared with women, the majority of men (51.7%) also reported enhanced sexual arousal with nipple stimulation and only a small proportion reported the activity decreased arousal. A significantly smaller percentage of men would like to have had the stimulation during lovemaking but did not want to ask for it. This gender difference could feasibly be due to a number of factors

Table 1 Response frequencies by gender (% Yes)

Item	Women	Men
1. Does stimulation of your nipples or breasts cause or enhance sexual arousal?	81.5	51.7
2. When you are sexually aroused, does stimulation of your nipples or breasts increase your arousal?	78.2	39.0
3. When you are sexually aroused, does stimulation of your nipples or breasts decrease your arousal?	7.2	7.5
4. Have you ever asked to have your nipples or breasts stimulated during lovemaking?	59.1	17.1
5. Would you like to have your nipples or breasts stimulated during lovemaking but do not want to ask for it to be done?*	37.7	19.8

N = 153 for women; N = 148 for men.
*Frequencies are calculated on those women (N = 61) and men (N = 24) who answered "No" to question 4.

including gender differences in reporting biases or social desirability, or gender roles ascribed to this behavior. These results clearly do not support the comments on nipple/breast stimulation by Kinsey et al. [2] quoted in the Introduction section.

Exactly how nipple/breast stimulation influences sexual arousal is poorly understood. The female nipple/areola is well innervated [4–6] and when stimulated the nipple becomes erect and the areola engorged [7]. The innervation of the male nipple/areola, although similar to that of the female nipple/areola [8], has been less well studied. It has been estimated that 50–60% of men also show nipple erection on arousal [7]. The tactile sensibility of the areola is regarded as protopathic (primitive) as compared with epicritic (discriminatory) sensitivity of the skin [4]. In relation to tactile stimuli, Robinson and Short [9] reported that after puberty the sensitivity of all areas of the female breast becomes significantly greater than that of the male breast. While there have been a number of brain imaging studies during sexual arousal in men and women by visual sex stimulation indicating what areas become activated or inhibited [10–14], as far as we know, there have been no similar studies where just stimulating the breast or nipple is the mode of arousal. We are thus ignorant of how such stimulation activates sexual arousal in the brain.

It has been proposed that prolactin specifically released at orgasm by either coitus or masturbation inhibits sexual arousal in men and women [15], although Levin [16] has pointed out that women are known to be able to have multiple serial orgasms. Although studies in men employing pharmacological methods of raising and lowering prolactin levels have shown that raised prolactin inhibited subjective sexual arousal [17], only some aspects of the arousal, such as the ejaculatory latency, were influenced by the induced hyperprolactinemia with only small reductions in sexual drive and functions. The new conclusion was that although prolactin was important in the postorgasmic regulation of sexual behavior, the results did not "demonstrate a role for prolactin as a simple and direct negative feedback mechanism." It is likely to be but "one signal within a network of psycho-endocrine regulation of the sexual experience." Sexual arousal in the brain occurs through a complex interaction of multiple neurotransmitters (norepinephrine, acetylcholine, dopamine, oxytocin, vasopressin, vasoactive intestinal peptide, and opioids) and sex steroids and is poorly understood. Bancroft [18], reviewing the endocrinology of human sexual arousal, also commented on its complexity and on the as yet uncertain role(s) of the peptides prolactin and oxytocin. He argued that the prolactin release at orgasm is an "epiphenomenon of post-orgasmic inhibition of dopamine activity, and not a hormonal mechanism of functional importance."

Experiments on the release of prolactin during nipple/breast stimulation in nonlactating women have given conflicting results. Kolodney et al. [19] reported that it was increased in nine nonlactating women either by self-stimulation or by manipulation from their husbands. Plasma prolactin levels were not increased when men self-stimulated themselves but when the stimulation was undertaken by their wives there was an immediate fourfold increase in the plasma prolactin levels of men. Interestingly, no sexual arousal was reported by any of the men during either self-stimulation or stimulation by their wives. This difference suggested to Kolodney et al. [19] that psychological concepts play a role in the release of prolactin in men. A later study [20] in 11 nonpostpartum women, however, did not show any increase in prolactin during either solitary or multiple episodes of nipple stimulation over 24 hours.

Even in the case of breast-feeding when prolactin is definitely known to be released, there are conflicting views on the effect on women's sexuality. Newton [21] claimed that breast-feeding women (who would be releasing prolactin at each feed) were often interested in a quick return to sexual intercourse but other authors suggest that breast-feeding by new nursing women is a possible cause of their low or absent libido [22]. Because of these conflicting reports, it is not possible to come

to any conclusion about the action of prolactin release during breast stimulation on human sexual response. It is unfortunate but at our present level of understanding little can be usefully said about the nipple and central brain mechanisms of arousal. There is a clear need for functional magnetic resonance imaging or positron-emission tomography study on brain activity during nipple/breast stimulation in both men and women.

Finally, a possible minor limitation of using a "Yes/No" response format to the asked questions (namely 1 and 2) is that some of the "No" responses could reflect respondents indicating "No" because they had never experienced the behavior, rather than "No" because it was not arousing. However, even if this postulate were so, it should be stressed that this would necessarily increase the proportion of our "Yes" responses, rendering the data we report here a conservative estimate of the enhancing effects of nipple stimulation on sexual arousal.

Conclusions

Manipulation of the nipple/breast during lovemaking causes or enhances sexual arousal for a majority of both young women (81.5%) and men (51.7%) and when experienced during sexual arousal such manipulation further increased their arousal. Only a very small minority of either sex (approximately 7%) found that such manipulation decreased their arousal.

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Conflict of Interest: None.

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