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ORGASM

Female Orgasm and Overall Sexual Function and Habits: A Descriptive Study of a Cohort of U.S. Women

Osama Shaeer, MD,[1] Ditte Skakke, MA, MPH, RN,[2] Annamaria Giraldi, MD, PhD,[2,3] Eman Shaeer, MD,[4] and Kamal Shaeer, MD[1]

ABSTRACT

Introduction: Few studies have investigated women's experiences with orgasm and the factors that they cite as important for their orgasmic function and sexual behavior related to foreplay and sexual stimulation.

Aim: To investigate and describe overall sexual function in a cohort of North American women, with a special focus on orgasmic function, satisfaction, triggers, risk factors, and sexual behavior.

Methods: A total of 303 women aged 18–75 years completed a 100-questionnaire survey, which included the Female Sexual Function Index (FSFI) questionnaire and questions on orgasmic function, duration of sexual activity, sexual behaviors and relationship, and the partner's sexual function. Statistical analysis was performed using SPSS to illuminate factors affecting sexual function.

Outcomes: The main outcome measures are FSFI score, satisfaction with sexual life, ability to reach orgasm, orgasm frequency, preferred sexual stimulation, and sexual habits.

Results: FSFI scores, which were calculated for the 230 women who reported having had a steady male sex partner in the preceding 6 months, showed that 41% of the 230 women were at risk for female sexual dysfunction (a cutoff less than 26.55) and 21% were dissatisfied with their overall sexual life. Almost 90% of the overall cohort reported good emotional contact with their partner, that their partner was willing to have sex, satisfaction with the partner's penis size (wherever applicable), and good erectile function and ejaculatory control of their partner (wherever applicable). 81% of the overall cohort claimed to be sexually active. Around 70% (70–72) did reach orgasm frequently, but around 10% never did so. Vaginal intercourse was reported by 62% of the overall cohort as the best trigger of orgasm, followed by external stimulation from the partner (48%) or themselves (37%). External stimulation was reported to be the fastest trigger to orgasm.

Clinical Implications: The knowledge on how women reach orgasm and how it is related to the partners' willingness to have sex and other factors can be incorporated in the clinical work.

Strengths & Limitations: The use of a validated questionnaire and the relative large number of participants are strengths of the study. Limitations are the cross-sectional design, the lack of a sexual distress measure, and a possible selection bias.

Conclusion: Most women in the overall cohort were satisfied overall with their sexual life and partner-related factors, even though 41% (of those who cited a steady sex male partner) were at risk for female sexual dysfunction. Most women did reach orgasm through different kinds of stimulation. Correlation was good between preferred and performed sexual activities and positions. **Shaeer O, Skakke D, Giraldi A, et al. Female Orgasm and Overall Sexual Function and Habits: A Descriptive Study of a Cohort of U.S. Women. J Sex Med 2020;17:1133–1143.**

Key Words: Female Sexual Function; Female Sexual Dysfunction; Female Orgasm; Female Sexual Function Index (FSFI); Orgasm Risk Factor; Sexual Stimulation

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[1]Department of Andrology, Kasr El Aini Faculty of Medicine, Cairo University, Giza Governorate, Egypt;

[2]Sexological Clinic, Psychiatric Center Copenhagen, Copenhagen, Denmark;

[3]Institute of Clinical Medicine, University of Copenhagen, Copenhagen, Denmark;

[4]Department of Obstetrics and Gynecology, Kasr El Aini Faculty of Medicine, Cairo University, Giza Governorate, Egypt

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INTRODUCTION

Female sexual dysfunction (FSD) is highly prevalent and is a distressful condition that affects the lives of many women.[1] This includes female sexual interest/arousal disorder, hypoactive sexual desire disorder, genito-pelvic pain/penetration disorder, and female orgasmic disorder (FOD). Definitions vary among different diagnostic systems.[2–4]

Another entity is a "sexual problem," which can be within the spectrum of normal female sexual function and is not a formal sexual dysfunction. A sexual dysfunction (disorder) is defined as a distressing sexual problem.[3,5,6] Several studies have shown that women with a "sexual problem" do not necessarily feel sexual distress and that women can be distressed about their sexual life without having what can be classified as a sexual dysfunction.[7–9] A large U.S.-based study including 31,581 women showed that 43% of the women reported sexual problems, 22% reported sexual distress primarily, and 12% reported any distressing sexual problem.[10] Other investigations have also shown that low sexual desire is the most prevalent sexual problem among women.[1]

Female orgasmic function has been studied to a lesser extent and primarily with a focus on FOD.[11,12] Explorative and descriptive research on non-dysfunctional orgasmic function is not widely represented. To be "sexually normal" implies for many women that she must achieve orgasm almost every time she has sexual interaction with another person,[13,14] and research has shown that women frequently fake orgasm to adapt the sexual behavior to a "code of normality."[13] However, other studies have elucidated that "normal orgasmic function" does not necessarily imply reaching orgasm every time one has sex.[15–17]

According to Levin,[18] orgasmic response can occur from different stimuli, classified into 2 broad categories. The first is a variety of physical stimuli of different regions of the body such as the genital area including the clitoris and vagina, the mons, or the breasts and nipples. The second is mental imagery and fantasy. The orgasmic response can be described through objective physiological indicators and psychological responses. Physiological indicators include vaginal, anal sphincter, and uterine contractions and release of prolactin.[18] Meston et al[19] have described the mental orgasmic response as a "variable, transient peak sensation of intense pleasure, creating an altered state of consciousness, inducing physical and mental well-being and contentment". Orgasm most likely leads to sexual satiation and a feedback mechanism that regulates sexual arousal and behavior.[20,21]

Sexual dysfunctions including FOD may arise from many different biopsychosocial causes.[5,22] Biological factors can include conditions such as cardiovascular disease, diabetes, neurological disorders, an unhealthy lifestyle, and the effect of pharmacological agents as well as alcohol and drug abuse. Psychological factors include stress, depression, personal problems, body image issues, and relationship problems, whereas sociological factors might include civil status (being single), financial problems, and unemployment.[5]

The presence of other sexual dysfunctions such as lack of desire or arousal is also a risk for difficulty in reaching orgasm.[23] Furthermore, Garcia et al[24] have suggested that women with female partners (lesbians) achieve orgasm more easily than women with male partners (heterosexual). They showed that bisexual women had lower rates of orgasm (58%) than both lesbian (75%) and heterosexual women (61%). This could be explained by many factors, as the greater comfort and familiarity women partners have with the female body, making them better able to induce orgasm in another woman, different gender roles, duration of sexual activity, or biological factors as pointed out by the authors. However, another study by Frederick et al[17] found that bisexual women and heterosexual women had almost similar orgasm rates (66% and 65%, respectively), whereas lesbian women had a higher orgasm rate (86%).

To obtain greater knowledge on how women reach orgasm, which stimulation they prefer, what they actually practice, how the orgasmic experience varies, as well as how sexual function and satisfaction interact, the current study aimed to

1. measure overall sexual function using the Female Sexual Function Index (FSFI) and compare this with women's reported sexual satisfaction levels and
2. describe women's experiences with ability to reach orgasm, how often they reach orgasm, what triggers orgasm, possible factors inhibiting orgasm including partner-related factors, among other parameters studied.

METHODS

Design

Data in this article are nested from a larger epidemiologic study, the Global Online Sexuality Survey (GOSS). This ongoing online epidemiologic study of both male and female sexuality is launched across the globe in different languages with the aim of providing knowledge about sexual issues in the general population in different countries. The first launch was in the Middle East in 2010[25] followed by the launch in the United States in 2011.[26] Other data on sexual function and dysfunctions in men and women have been reported from the GOSS.[25–30]

Study Population

The present sexuality survey was offered to English-speaking female and male web users in the United States in 2016 by an international online survey service provider based in the United States and fully funded by some of the investigators. Advertisement was conducted as a banner that invited Web users to participate in a survey investigating sexual health. The banner was directed to persons older than 18 years of age, regardless of ethnicity, sexual orientation, marital status, or surfing preferences to avoid possible bias from special sexual inclinations and interests. Participants were informed of the nature of the survey, ensuring anonymity, and non-collection of personal information including email and IP

address. Participants were informed that they would be able to see the survey results after completion and to follow the data prospectively as information from other participants pools up. It was stressed that the accuracy of the information they provided would reflect on the accuracy of the information they would eventually be able to access. To ensure reliability of responses, quality control measures were applied by the service provider including estimation of the optimal duration for completion of the survey and excluding fast raters. A total of 303 women (aged 18–75 years, mean age: 39.8 years) and 610 men (mean age: 44.4 years) completed the survey on a scheduled cutoff date in 2016. Only the data from the female participants are included in this article.

Data Sampling

The GOSS survey for female participants included 100 questions. Questions encompassed a consent question, demographic data, systemic medical diseases, medications, habits of medical importance, obstetric and maternity history. Regarding sexuality and relationship, the questions included information on sexual orientation, coital frequency, preferred vs practiced coital frequency, preferred vs practiced sexual positions and masturbation, frequency of orgasm, techniques for attaining orgasm, and the description of the orgasmic experience. Furthermore, the questions asked about present sexual and romantic relationship status, the partner's willingness to have sex and perform foreplay and afterplay, the partner's erectile function, ejaculation control and satisfaction with the penile size (wherever applicable). Sexual function was evaluated by FSFI, a validated questionnaire that is considered the gold standard for measuring women's sexual function.[31] This brief, 19-item, multidimensional self-report questionnaire measures dimensions of sexual function in women, including desire, arousal, lubrication, orgasm, satisfaction, and pain. It is developed for heterosexual women with a partner. The maximum score is 36. A cutoff of $\leq$26.5 indicates a risk for sexual dysfunction.[32] FSFI questions were addressed to and answered by the overall cohort (n = 303), but the FSFI score was calculated only for the women who reported having had a steady male sex partner in the preceding 6 months (n = 230).

Statistical Analysis

Statistical analysis was carried out using SPSS (SPSS Inc, Chicago, IL) for Microsoft Windows, version 19. Descriptive data are presented as means ± standard deviation (SD), frequencies, and percentages. In cases of non-normally distributed data, a median is reported. Groups were compared using the independent student *t*-test or the Chi-square test, as appropriate. *P* value $\leq$ .05 was considered as significant. Correlation between numerical variables was determined using the Pearson correlation test. Multivariate analysis was used to investigate the impact of various factors on the orgasmic function and satisfaction. Orgasm and frequency of orgasm were measured by the orgasm domain in FSFI: question 11 and 13. Possible confounders were identified in previous research on female sexual function, satisfaction, distress and orgasm. They were age, education, length of relationship, stress, emotional relationship with partner, number of sex partners, perceived erectile function and ejaculation control of partner, foreplay, and the partner's willingness to have sex, masturbation, liking sex, the partner performing foreplay, length of intercourse, and numbers of sex partners.

Table 1. Women demographic

	Total n (%)
Age (years)	Total 303 (100)
18–39	169 (56)
40–49	61(20)
50–59	42 (14)
>60	31 (10)
Sexual orientation	Total 303 (100)
Exclusively or predominantly heterosexual	276 (91)
Homosexual, bisexual, or others	27 (9)
Ethnicities	Total 273 (100)
Caucasian	213 (78)
African American	25 (9)
Hispanic	17 (6)
Asian	13 (5)
Others	5 (2)
Relationship length	Total 303 (100)
Less than 1 year (incl. singles)	49 (16)
1–5 years	79 (26)
5–10 years	59 (20)
More than 10 years	116 (38)
Children	Total 303 (100)
No	84 (28)
1–2	144 (48)
3<	75 (24)
Education	Total 303 (100)
Primary school	112 (37)
University	143 (47)
Postgraduate	35 (12)
Other	13 (4)
Smoking	Total 303 (100)
Yes	85 (28)
Menses status	Total 303
Premenopausal	206 (68)
Do not menstruate	97 (32)
Irregular menses (of those who menstruate)	51 (25)
Physical or mental conditions	Total 303
Overweight	61 (20)
Diabetes	21 (7)
Hypertension	37 (12)
Depression	71 (23)
Stress*	174 (57)
Income	Total 265 (100)
Other	3 (1)
Low (very low)	88 (33)
Average	150 (57)
High (very high)	24 (9)

*Interpersonal (13%), financial/career (21%), otherwise (23%).

Ethic and Informed Consent

Ethical approval was obtained from the ethical committee of the Research Ethical Committee at the Andrology Department, Cairo University Hospital, Cairo, Egypt. All participants actively gave consent to participate in the study. They were informed at the webpage about the nature of the study, that it was anonymous and had to actively choose the "I am happy to participate" before they could proceed with the study.

RESULTS

Demographic Findings

A total of 303 women living in the United States responded to the survey. Demographic data are shown in Table 1. A majority of the women (n = 220) were between 18 and 49 years, with a mean age of 39.8 ± 13.3 years. The majority of women were heterosexuals (91%), and 38% had been in a relationship for more than 38 years.

Sexual Function and Experiences

Among the 303 women, the mean age for the first sexual intercourse was 17.6 years (SD ± 4.4). Of those, 230 women (76%) had been engaged in a sexual relationship (including coitus) with a male partner during the last 6 months. FSFI score was calculated only for this group. Mean FSFI score was 26.3 (SD ± 7.3). As shown in Table 2, 41% of the 230 women had a score less than 26.55 indicating a risk for FSD.

Multivariate analysis showed that the total FSFI score was significantly negatively associated with having irregular menses, depression, stress, not liking sex, the partner's unwillingness to have sex, too little foreplay or afterplay, low frequency of sex, irregular frequency of sex, poor emotional relationship with the partner, and dissatisfaction with the partner's erectile function, ejaculatory control, or penis size. No association was found with income, diabetes, cardiovascular disease, overweight, smoking, children, and previous births.

Satisfaction with Sexual Life and Partner

Using the FSFI question on satisfaction in the overall cohort (n = 303), 54% reported being overall satisfied (very or moderately) with their sexual life over the past 4 weeks. 21% reported dissatisfaction (very or moderately dissatisfied), and 25% were indifferent.

When asked, "*How do you evaluate your emotional relationship with your sexual partner?*" 89% reported having a good emotional relationship (good, very good, or excellent) with their sexual partner. In addition, 88% of the women reported that their partner was willing to have sex (willing, very willing, or totally willing) when asked, "*How willing is your partner to have sex?*"

Most women (89%) responded "yes" when asked, "*Do you find the size of your partner's penis satisfactory?*" 43% agreed when asked, "*Do you think that size of the penis is important for your sexual satisfaction?*" Furthermore, 29% reported that the bigger the penis, the better the sexual satisfaction, whereas 51% reported that a bigger penis did not matter for sexual satisfaction ("*Do you think that the bigger the penis is, the higher is your sexual pleasure/satisfaction?*").

When asked, "*Do you think that your partner suffers weak erection?*" *and* "*Do you think your partner ejaculates too early?*" 11% reported weak erection and 14% reported early ejaculation. 89% and 86%, respectively, answered "never," "rarely," or "sometimes."

Sexual Preferences and Habits

79% of the overall cohort of women answered "yes" when asked, "*Do you like sex?*" The women reported that they had intercourse 8 ± 9.9 (SD) times per month on average. They reported 12 ± 10.7 (SD) times per month when asked, "*In your opinion, how many times should one have intercourse every month (on average)?*" When asked, "*Are you comfortable with that frequency (number of times you have intercourse every month)?*" 57% answered "yes". However, 36% would prefer more and 7% would prefer less frequent intercourse. The reported mean for intercourse duration ("*How long (in minutes) does intercourse take?*") was 18.5 ± 17.9 (SD) minutes, and the mean for preferred duration (*In your opinion, how long do you think intercourse should take?*) was 24.2 ± 20 (SD) minutes.

76% of the women practiced masturbation in different frequencies. Of those, 51% performed external stimulation only, 5% performed internal stimulation only, and 44% performed both external and internal stimulation ("*If you do masturbate, how do you perform masturbation?*").

As shown in Figure 1, the women were asked to rate their preferred sexual positions and activities on a scale from 0 to 10. Then, they rated how often they did the same positions and activities. As the figure shows, vaginal intercourse and oral sex were rated the highest, and a good agreement between the most preferred and performed activities was found. However, it was also shown that the women wanted to have certain activities ("using a special apparatus," cunnilingus, fellatio, 69 position, and vaginal penetration in standing position) more often than they actually practiced.

83% reported that their partner performed foreplay ("*Does your partner perform foreplay* (*stimulation/teasing by hand or mouth before intercourse*")). Of those, 48% found the amount of foreplay to be adequate, 30% would prefer more, and 5% would prefer less. In contrast, only 44% of the women answered "yes" when asked, "*Does your partner perform afterplay (stimulation/teasing by hand or mouth after intercourse)?*" Of those, 29% found the amount to be adequate, 11% would prefer more, and 4% would prefer less. The women apparently valued foreplay more than afterplay, with 88% reporting that foreplay was important or very important for sexual satisfaction, whereas only 48% reported afterplay as important for sexual satisfaction.

Table 2. Risk of female sexual dysfunction

	FSFI-score ≤26,55	FSFI-score >26,55	
Age (years)	n (%)	n (%)	Total n (%)
18–39	53 (23)	92 (40)	145 (63)
40–49	24 (10)	26 (11)	50 (21)
50–59	11 (5)	14 (7)	25 (12)
60+	7 (3)	3 (1)	10 (4)
Total	95 (41)	135 (59)	230 (100)

A FSFI score ≤26.55 is considered to be a risk for female sexual dysfunction (FSD).

Orgasm

72% of the sexually active women reached orgasm frequently (most of the time, always, and sometimes) during any kind of sexual stimulation and during vaginal intercourse, whereas 13–14% never had reached an orgasm or were not sure. 15–16% reported they rarely reached orgasm. Figure 2A and Figure 2B.

Multivariate analysis showed that reaching orgasm frequently (reported as most of the times, almost always, or always) was positively correlated to the domains of "women liking sex" and the partner performing foreplay. It was negatively correlated to "being stressed," poor emotional relationship with the partner, the partner's willingness to have sex, and perceived erectile dysfunction and premature ejaculation of the partner. No association was found with age, educational level, length of intercourse, masturbation, or numbers of partners.

81% of the overall cohort reported having been sexually active within the last 4 weeks. Of those, 60% were moderately satisfied or very satisfied with their ability to reach orgasm during sexual activity or intercourse, measured by FSFI question ("*over the past 4 weeks, how satisfied were you with your ability to reach orgasm (climax) during sexual activity or intercourse?*"). 16% were indifferent, and 24% were moderately or very dissatisfied. Multivariate analysis showed that a high satisfaction with ability to reach orgasm (very or moderately satisfied with ability to reach orgasm) was positively correlated to women liking sex and the partner performing foreplay. It was negatively correlated to the partner's willingness to have sex and the partner's erectile dysfunction. No association was found with age, educational level, length of relationship, stress, emotional relationship with the partner, the partner's perceived premature ejaculation, and the woman masturbating.

When reporting what kind of stimulation the women needed or preferred to be able to reach orgasm, 62% reported that intercourse was the best trigger for orgasm, second best triggers were external stimulation by a partner's hand (48%) or by mouth (48%), then external stimulation by their own hand (masturbation) (37%) or a vibrator (29%), and finally by anal intercourse (7%).

Stimulation time to reach orgasm was reported to be 10.2 ± 10 (SD) minutes (median: 8 minutes) by external stimulation and 15.2 ± 14 (SD) minutes (median: 10 minutes) by intercourse.

When given different possibilities, the women described orgasm as one or more simultaneous bodily experiences, as displayed in Figure 3. 42% of the women experienced strong body contractions, 26% moderate body contractions, and 14% subtle contractions when having an orgasm. Abdominal contraction to a different degree was experienced by 12–15% of the women.

DISCUSSION

The aim of this study was to describe the overall sexual function in a sample of 303 U.S. women, with a special focus on orgasmic function and sexual habits. Several factors have been investigated. Overall, we found that two-fifths of women in steady heterosexual relationships were at risk for FSD. However, at the same time, only one-fifth reported being dissatisfied with their overall sex life. However, close to half of the overall cohort reported being dissatisfied with their orgasmic function.

These findings show that women are not necessarily dissatisfied with their sex life, despite impairment in some sexual functions. Rosen et al[33] had similar results in a sample of 329 randomly chosen women, aged 18–73 years. They showed that despite sexual risk factors such as anxiety or inhibition during sexual activity, lack of sexual pleasure, difficulty in achieving orgasm, lack of lubrication, and painful intercourse, most women (69%) rated their overall sexual life as satisfactory. A study among 429 randomly chosen Danish women found that one-third scored less than 26.55 on the FSFI, but only a fifth were unsatisfied with their sexual life.[8] Furthermore, Shifren et al[10] and colleagues found in their sample of 31,581 U.S. women that the prevalence of sexual problem sans distress was considerably higher (43%) than the prevalence of distressing sexual problems (22%).

Accordingly, while a proportion of women may be at risk for sexual dysfunction according to the FSFI, they do not necessarily have a sexual dysfunction/disorder because they are not distressed by the condition.[8,10,33] In the present study, female sexual distress was not measured, which could have added insights about what proportion of the women had FSD, defined as a low sexual function combined with sexual distress. Nevertheless, satisfaction with both overall sexual life and orgasmic function was measured and has given an insight on how the women feel

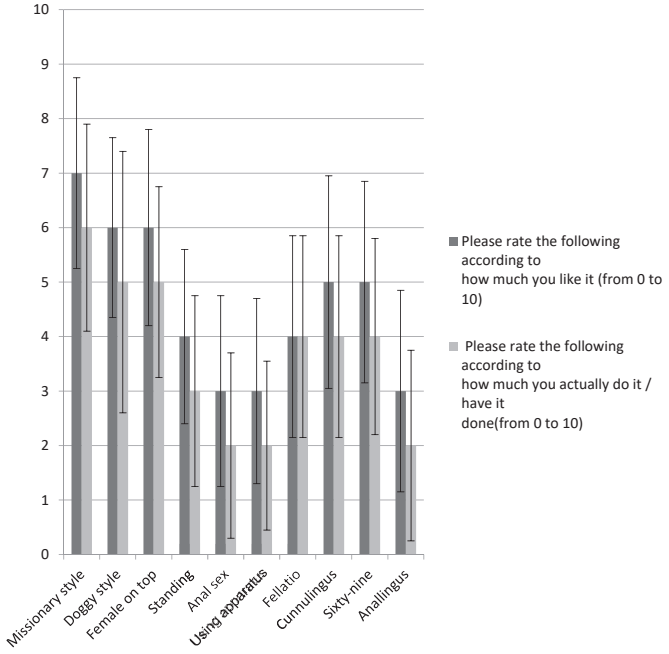

Figure 1. Preferred vs performed sexual positions and activities (Mean values + SD).

about their sexual life, but the satisfaction domain is not a substitute for sexual distress.[31] The method used to measure sexual function and distress has a pivotal impact on the outcome, as described by Hayes et al.[9] They concluded that some methods to measure FSD produce significantly higher estimates than others. If the recall periods increase, FSD prevalence increases too. In contrast, if sexual distress is measured as a prerequisite for FSD, the prevalence decreases. Overall, the prevalence of FSD in newer research has fallen since 1994 when the Diagnostic and Statistical Manual of Mental Disorders-IV stipulated that both low sexual function and sexual distress are prerequisites for a diagnosis of FSD.[9,34]

Life circumstances naturally affect humans in social, mental, and physiological ways and thus also affect sexual function.[10] In that sense, it can be considered normal that a proportion of women always will be at risk for sexual dysfunction at certain times of their lives. But only a proportion of those will experience sexual distress.[9] In the present study, it was found that psychosocial factors and dissatisfaction with partner-related sexual and emotional domains affected the FSFI score negatively.

In a 2012 study by Shaeer et al,[30] 344 women in the Middle East answered the same questions as in the present study. The results indicated that cultural differences might affect the prevalence of risk for FSD as measured by a low FSFI score, as the study showed that 59% scored less than 26.55 in the sample of women from the Middle East. However, Shaeer et al[30] discuss that risk for FSD is exceptionally difficult to measure in the Middle East because of its sensitive content and the conservative nature of the population, which may also influence the responses.

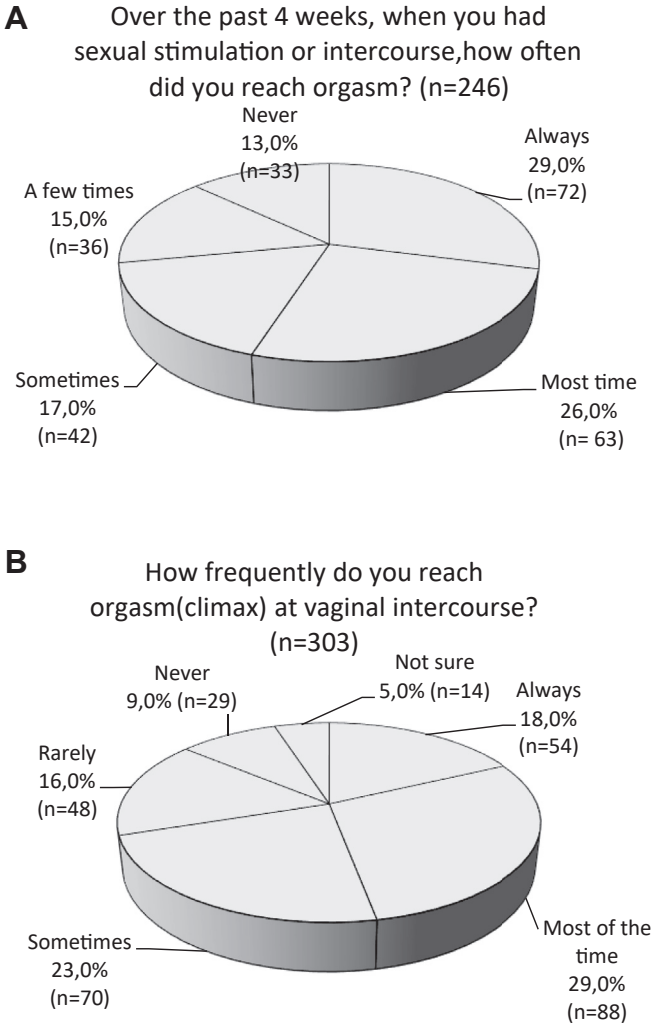

Figure 2. A, Orgasm frequency at any kind of stimulation. B, Orgasm frequency during vaginal intercourse only.

Orgasm

For many years, it has been debated how frequently women can reach different kinds of orgasms, for example, clitoral or vaginal orgasm, and whether some orgasms are "better" than others.[35,36] Masters and Johnson[37] stated that from an anatomic point of view, there are no separate anatomic entities between clitoral and vaginal orgasm. However, Levin[35,38] and Pfaus et al[39] suggested that at least 2 types of orgasmic responses could be reached by different genital stimuli, for example, clitoral vs anterior vaginal wall erogenous complex ("g-spot") stimulation. Bronselaer et al[40] furthermore found that deep vaginal and cervical stimulation can trigger orgasm. Costa and Brody[41] claimed that vaginal orgasm is associated with more mature psychological defense mechanisms. Other studies have concluded that the type of orgasm could be linked to a woman's mental vulnerability, for example anxiety and depression.[36,42,43] The present study was not addressing different kinds of orgasm or their relative merits. We referred only to the frequency of women reaching what they themselves experience as orgasm. However, the present study shows that most of the included women reached orgasm from both vaginal stimulation

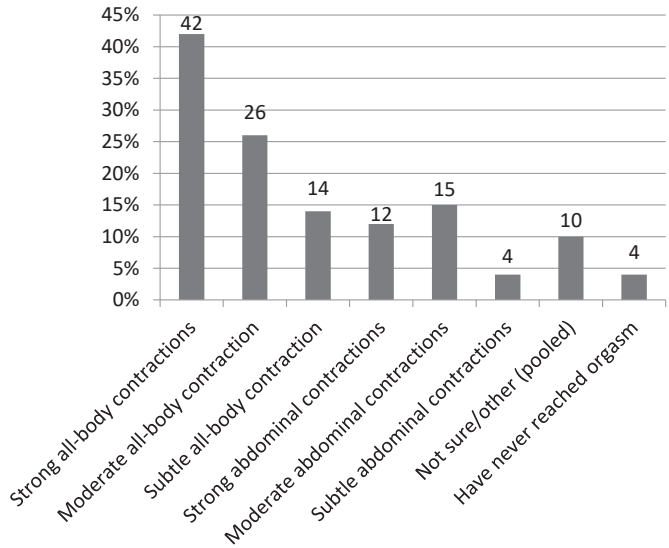

Figure 3. Bodily orgasm description.

(intercourse and other internal stimulation) and external clitoral stimulation performed by the partner or the woman herself.

When focusing on how to reach orgasm, the present study showed that the women reached orgasm in different ways, including intercourse, external stimulation, and least likely by anal intercourse. Most women preferred intercourse as the best trigger for orgasm. Other groups have investigated what stimulates orgasmic function. Fugl-Meyer et al[44] found that good orgasmic function is associated with a relatively large repertoire of sexual techniques, including masturbation and the ability to receive touch through oral stimulation or a partner's hand. Herbenick et al[45] found that for some women, intercourse alone is sufficient for reaching orgasm, whereas others need clitoral stimulation before, during, or after intercourse, which is in good accordance with the present study, where both intercourse and external stimulation were found to be good triggers for orgasm. However, the women reported that the stimulation time needed to obtain orgasm was longer with intercourse than with external stimulation. Rowland et al[46] had similar findings in their study, showing that time to orgasm during partnered sex was 14 minutes, compared with 8 minutes during masturbation. Other studies have shown that orgasm occurs faster in women by masturbation than by intercourse or other stimulation by a partner.[12,47] Thus, the present study supports previous findings that external stimulation or masturbation is the fastest way to reach orgasm. However, it was also shown that intercourse is the most common stimulation when trying to reach orgasm, despite the longer stimulation time required than masturbation/external stimulation. Previous research has suggested that women who frequently do masturbate have higher orgasm frequency in general.[46,48] Though, the present study did not find any association between masturbation habits and orgasm frequency or orgasm satisfaction.

When describing the bodily orgasmic responses, most of the women in the present study experienced some degree of full body contractions and/or abdominal contractions during orgasm. Other studies have reported similar results,[18,24,49] showing that orgasm is not a genital or pelvic response alone but includes several physiological components involving pelvic, uterine, rectal, abdominal, and limb muscle contractions. Orgasm is thus considered a total body response in which muscles in many different areas of the body contract to different degrees. This distribution varies with the individual woman, and about a third of the women in the present study experienced abdominal contractions only. Because the response choices in this study did not include pelvic or genital contractions, these abdominal descriptions may cover genital/pelvic contractions, as described by Levin[18] and Garcia et al.[24] There might be an underestimation of the bodily reactions, as some women might not be fully mentally present or aware of all bodily reactions during orgasm, as described by Kingsberg et al.[50]

The reported mean time of intercourse among the women in the present study was longer than the reported mean time of intercourse required to reach orgasm. Thus, on average, the women seemed to have long enough stimulation time to reach orgasm. The length of intercourse duration could then be considered as a contributing factor (or trigger) for good orgasmic function. The mean time (18.5 minutes) for intercourse duration in the present study was relatively long than that in other studies. Weiss and Brody[51] reported a mean time for intercourse of 16.2 minutes, and Miller and Byers[52] reported a mean time of 7.03 minutes. The reason for these differences cannot be explained but could be reflecting different study populations, recall bias, different ways of asking the questions, or different confounding factors such as physical and mental health, socioeconomic factors, culture, or having children or not. However, when looking at the median time for orgasm in the present study, it was 8 minutes for external stimulation and 10 minutes for intercourse, which are more in line with what other studies have shown.

Relationship and Partner-Related Factors

The women in the present study were predominantly engaged in long-term relationships, though not all women in steady relationships were sexually active. Long-term relationship has earlier been considered a risk factor for sexual dysfunction because of decreasing desire[15] and decreasing frequency of intercourse[53] and, yet in contradiction, considered a predictor of good sexual function because of the secure and close relationship compared with singles having one-night stands.[33] Higher orgasmic function in previous studies has been found to be associated with low relationship stress, high marital and relationship satisfaction, overall high quality of the relationship with the sexual partner, and the ability to adapt the sexual act to the woman's need.[12,54–56] The present study supports the latter by finding a positive association between the partners performing an adequate foreplay and orgasmic function.

Several factors in the present study suggest long length of relationship as a predictor of good orgasmic function. The women evaluated their emotional relationship with their partner as predominantly good and find that their respective partners were overall very willing to have sex with them, which indicates easy access to dyadic sexual activity and stimulation with a partner. Regression analyses, though, showed no association between length of relationship and orgasm satisfaction or between FSFI scores (risk of FSD) and relationship duration. A study by Wahlin-Jacobsen et al[7] found that longer relationship is associated with low sexual desire, sexual distress, and FSD. They did not investigate effects on orgasm specifically.

Half of the women in the present study did not experience any or would prefer to experience more foreplay and afterplay, and about half of the women were satisfied with the amount of afterplay. The question arises of whether half of the women being satisfied are *enough* or if one-third being directly unsatisfied and requiring more is *too many*? Leeners et al[12] reported that the likelihood of female orgasm is influenced by the couple's ability to meet the woman's need, and others have shown that women may be distressed by a partner's lack of sexual performance and then not feel sexually satisfied.[56] In that sense, adequate foreplay and afterplay could be considered as triggers for good orgasmic function and too little or too much relative to what is desired could be considered as a risk factor. This is supported by the present study where a positive correlation was found between the partner performing foreplay and high orgasm frequency and satisfaction with orgasmic function.

A relatively large proportion of the women in the present study experienced agreement between preferred and actually practiced sexual activities and positions. Vaginal intercourse was the most preferred activity, and nearly all were satisfied with how much they experienced it. Almost all of the women reported that their partners were overall willing to have sex with them, but still most women reported wanting to have intercourse more frequently than they actually did.

Although the women in the present study reported a mean time for intercourse duration that was longer than the mean time for reaching orgasm during intercourse, they still also indicated wanting longer intercourse duration. In a sister study (GOSS) among Middle Eastern women (n = 344), Shaeer et al[30] found that the women also wished for longer intercourse duration than they experienced. These results could indicate that orgasm is not the only benefit or goal with sexual stimulation or activity. Other studies, for example, Meston and Buss,[57] have shown that pleasure, physical desirability, love, commitment, stress reduction, self-esteem boost, and self-expression also are positive elements to gain from sex. Further research is needed to estimate how important orgasms and other goals are for women when they participate in sexual activity.

A smaller subset of the women in the present study reported that their partners had a weak erection or too early ejaculation. Weak male erection reduces the possibility of vaginal penetration, and too early ejaculation interrupt and shortens the intercourse. The study showed a negative correlation between women's orgasm frequency and the partner having weak erection or too early ejaculation. This is in line with previous research, which showed that male partner's ejaculatory or erectile dysfunction negatively affects women's sexual satisfaction, sexual function, and orgasmic function.[58,59]

Previous studies have focused on the importance of penis size for women's sexual satisfaction. Masters and Johnson[37] claimed in the 1970s that penis size does not matter. However, not all empirical evidence supports this argument. Later studies, such as that of Dixon et al[60] found that women believe that penis size matters and consider it to be important for their sexual satisfaction. A large U.S. study showed that women's preferred penis size is 16.3 cm in length and 12.7 cm in circumference.[61] The present study offers no support one way or the other. A little less than half of the women reported that penis size is important for sexual satisfaction, whereas more than a third reported that it is not. If the question is whether a bigger penis is more satisfactory than a smaller penis, about half of the women said no but one-third said yes. Most of the women found their partner's penis size was satisfactory, indicating that the size does not seem to be of great importance for their sexual satisfaction in the present study. However, we cannot conclude that the absence of this issue means that penis size does not matter for the women, and we do not have data on actual penis sizes of the partners.

Strengths and Limitations

The strengths of this study are anonymity, lack of confrontation stress, the use of a validated questionnaire, and the inclusion of particularly curious questions such as description of orgasm, method of stimulation, and satisfaction with the partner's performance and penis size.

A limitation is that we did not measure female sexual distress. The cross-sectional design is also a limitation because no causality can be ascribed. Furthermore, the design carries a risk of selection bias because participants were recruited through the internet, limiting the population to internet users and leaving the possibility of having attracted some women with a special interest in sexual matters or with sexual problems. From the present design, we cannot clarify these potential biases further.

Possible Clinical Implications and Further Research

The current results show that women can reach and experience orgasm in different ways. Orgasmic ability in women is also associated with the male partner's willingness to have sex in the way that the woman prefers. This factor applies for foreplay, afterplay, sexual positions, and activities. It also shows that the duration time for intercourse varies widely among participants. In the clinical practice, it is therefore important to include questions on the women and couples sexual habits and explore if she receives the "right" stimulation if she has orgasmic problems.

Another question is how important orgasm is for a good sexual life and what other goals or benefits women obtain or expect from sex. In this study, duration time was relatively high. More research could reveal what distinguishes women who prefer and engage in longer or shorter intercourse durations.

CONCLUSION

We found that most women in the present study were satisfied with their overall sexual life, orgasm ability, and frequency. This is in line with previous findings. Based on the FSFI score, a little more than a third of respondents were at risk for FSD, but only half of them reported being dissatisfied with their sexual life. Furthermore, the majority of the women were satisfied with emotional closeness to their partner, their partner's willingness to have sex, and partner's sexual function, performance, and penis size. The novelty of this study is that dissatisfaction with the partner's erectile function, ejaculatory control, penis size, unwillingness to have sex, and inadequate foreplay negatively affected the FSFI score. The results do not suggest that penis size is important for sexual satisfaction.

Most women did reach orgasm frequently during intercourse and/or other sexual stimulation. A small subset of women reported that they never reach orgasm during intercourse or any other kind of sexual stimulation.

Corresponding Author: Osama Shaeer, MD, Department of Andrology, Kasr El Aini Faculty of Medicine, Cairo University, 1 University Street, Giza Governorate 12613, Egypt. Tel: +20233359047; Fax: +20237605181; E-mail: osamashaeer@gmail.com

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STATEMENT OF AUTHORSHIP

Category 1

(a) Conception and Design
Osama Shaeer
(b) Acquisition of Data
Osama Shaeer; Eman Shaeer; Kamal Shaeer
(c) Analysis and Interpretation of Data
Osama Shaeer; Ditte Skakke; Annamaria Giraldi

Category 2

(a) Drafting the Article
Ditte Skakke; Annamaria Giraldi
(b) Revising It for Intellectual Content
Osama Shaeer; Ditte Skakke; Annamaria Giraldi

Category 3

(a) Final Approval of the Completed Article
Osama Shaeer; Ditte Skakke; Annamaria Giraldi; Eman Shaeer; Kamal Shaeer

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