

## ORIGINAL RESEARCH—EPIDEMIOLOGY

## The Global Online Sexuality Survey (GOSS): Female Sexual Dysfunction among Internet Users in the Reproductive Age Group in the Middle East

Osama Shaeer, MD,\* Kamal Shaeer, MD,\* and Eman Shaeer, MD†

\*Department of Andrology, Kasr El Aini Faculty of Medicine, Cairo University, Cairo, Egypt; †Department of Gynecology and Obstetrics, Kasr El Aini Faculty of Medicine, Cairo University, Cairo, Egypt

DOI: 10.1111/j.1743-6109.2011.02552.x

### ABSTRACT

**Introduction.** The exact prevalence of female sexual dysfunction (FSD) in the Middle East is exceptionally difficult to measure in light of its sensitive nature and the conservative tinge of the population.

**Aim.** The Global Online Sexuality Survey-Arabic-Females (GOSS-AR-F) is a community-based study of female sexuality in the Middle East through an online survey.

**Main Outcome Measures.** Prevalence of risk for female sexual dysfunction (rFSD) in the reproductive age group and its vulnerability to various risk factors.

**Methods.** GOSS-AR-F was offered via online advertising. The survey is comprised of the Female Sexual Function Index (FSFI) questionnaire among other questions.

**Results.** Out of 2,920 participants, 344 participants completed all survey questions. Average total FSFI score was  $23 \pm 6.5$ , with 59.1% of participants suffering rFSD. Age adjusted prevalence of rFSD was 59.5%, standardized to World Health Organization World Standard Population. There was a statistically significant higher prevalence of rFSD among cases with subjectively reported depression and male partner-related shortcomings such as erectile dysfunction and premature ejaculation as reported by the female participant, in addition to dissatisfaction with partner's penile size, insufficient foreplay, and practice of masturbation. This was not the case with advancing age, diabetes mellitus, hypertension, smoking, ongoing pregnancy, mode of previous child delivery, infertility, menstrual irregularities, dysmenorrhea, interpersonal distress, subjectively reported hirsutism, and female genital cutting. Participants were found to require longer duration of coitus and better ejaculatory control but not necessarily a higher coital frequency.

**Conclusion.** Female sexual function in the reproductive age appears to be adversely affected by psychological factors and shortcomings in male sexual function more than anything. These findings point to the possibility that many cases of FSD can be managed with the focus on male partner's ailments and attitudes that are relatively easier to manage.

**Shaeer O, Shaeer K, and Shaeer E. The Global Online Sexuality Survey (GOSS): Female sexual dysfunction among Internet users in the reproductive age group in the Middle East. J Sex Med 2012;9:411–424.**

**Key Words.** Prevalence; Epidemiology; Female Sexual Dysfunction; Online Survey; Female Sexual Function Index

### Introduction

Sexual health is a key factor to physical health, psychological well-being, and social adaptation. While male sexual health has been thoroughly investigated in every aspect, be it epidemiologic studies, basic science research, or clinical studies, female sexual problems are in broad terms under-

investigated and poorly understood. Female sexual problems span a spectrum ranging from dissatisfaction, emotional/affective frustration to full-blown female sexual dysfunction (FSD) (with or without pathological modifications) and to severe pathological disruption of gynecologic and mental health [1]. FSD contains four major categories of desire, arousal, orgasm, and pain [2].

Several studies have tried to address the prevalence of FSD and its domains. Yet, the true prevalence of FSDs in the general population remains unsettled. There is great deal of variation in published prevalence estimates of female sexual difficulties/dysfunctions by population [2] that can be attributed to real differences between populations, or to variation and inconsistency in the way FSD is measured [3].

The exact prevalence of FSD and its different domains in the Middle East is exceptionally difficult to measure. In this region, investigation of female sexuality is a very sensitive issue where many would be reluctant to participate, particularly if it involves direct contact with the investigator. This translates into low participation rates or inaccurate biased responses. On the other hand, lack of sex education and openness in publicly discussing sexuality issues may result in malcomprehension and contradictory interpretation of terms used in the investigation.

In addition to the general difficulty in investigation, many of the available studies are hospital-based rather than community based. Hospital-based studies have the virtue of being conducted in an atmosphere where interrogation about sexual health issues is relatively expected and accepted. Medical professionals explaining terminology is also a much-needed advantage. However, hospital-based samples are relatively biased toward ailment rather than health and do not represent the real epidemiology of FSD only obtainable from community-based studies.

This work is a community-based study of female sexuality in the Middle East, where an online survey is used to investigate the prevalence of various forms of FSD, to be examined against possible risk factors.

## Methods

The Global Online Sexuality Survey (GOSS) is an Internet-based survey investigating various aspects of male and female sexual function. The survey is formulated from validated scored questionnaires, in addition to further questions investigating aspects not covered by the questionnaires. GOSS-Arabic (GOSS-AR) is the Arabic language version of GOSS, targeting Arabic language-speaking web surfers in the Middle East. Global Online Sexuality Survey-Arabic-Males (GOSS-AR-M) investigated male sexual function, including erectile function, ejaculatory function, penile anatomy, and contraceptive trends [4,5]. This report (Global Online Sexuality Survey-Arabic-Females [GOSS-

AR-F]) is the version of GOSS directed toward Arabic-speaking female web surfers in the Middle East. It is offered via paid advertising on a popular social hub—Facebook and other social hubs. The survey was pilot tested before launch by collecting and evaluating responses of visitors of a patient information web site and was modified accordingly to enhance comprehension and broaden the scope. Results of the pilot study were excluded.

The only inclusion criterion is for the participant to be over 18 years of age. GOSS-AR-F starts with an introduction that explains the nature and purpose of the survey, followed by a consent question. Consenting subjects are allowed to proceed with the survey. Total anonymity is assured and granted, where no personal information is collected, not even e-mails or IP addresses. “Demographics” section inquires about the country of origin, birth place (rural or urban), age, educational level, sex, marital status, and the referring web page. Participants are then distributed to the relevant sections according to gender and engagement or nonengagement in regular coital relationships. Females with regular coital sexual activity fill out the Female Sexual Function Index [6] and report on the age of menarche, the need for medication to induce puberty, exposure to female genital cutting (FGC) and related information, general medical and gynecologic disease, smoking, ongoing pregnancy, mode of delivery, number of children, menstrual disorders, psychological stress, frequency of coitus, suitability of this frequency for the participant and her view of the acceptable frequency, dyspareunia and its cause from the participant’s view point, practice of masturbation and its method, the participant’s view of its possible drawbacks, orgasmic function and its trigger (external or internal stimulation), participant’s view of the male partner’s erectile function, ejaculatory control and latency time, penile size, and the participant’s view of the accepted average for those parameters, as well as her view of the importance of penile size for sexual fulfillment, contraceptive practices, among other items (Appendix 1). Questions are mostly in multiple-choice format and less commonly in a data entry format. Explanatory notes are offered beside terms and nomenclatures that may bear conflicts in understanding such as orgasm, lubrication, and circumcision.

## Results

### Demographics

The survey in its current form was offered in the year 2010 to the public through Facebook and

other social hubs. Out of 2,920 female participants, 1,907 reported regular coital sexual activity and were the focus of this work, with 344 completing all survey questions. Most participants came from Egypt (58%), followed by Saudi Arabia (23.5%), followed by the rest of the Arabic-speaking countries in the Middle East (Libya, Tunisia, Algeria, Morocco, Sudan, Yemen, Palestine, Lebanon, Jordan, Syria, Iraq, Kuwait, Qatar, United Arab Emirates, and Bahrain), mostly from urban areas with only 9.3% coming from rural regions. Average age was 28.9 years  $\pm$  5.9, range 18–53, with those 18–39 years of age comprising 93.9% (N = 324), 40–49 years being 5.5% (N = 19), and 50–59 years counting up to 0.6% (N = 2). Concerning educational background, 19.7% received school education, 71.3% received university education, and 9% received postgraduate education.

### General Health

Diabetes mellitus was reported in 1.4%, hypertension under unspecified treatment in 4.1%, and hirsutism in 16.2%. Depression was subjectively reported in 10.4%, and interpersonal distress was reported in 40.6%. Smokers comprised 20%, with 12.5% rarely smoking, 2.9% moderately, and 4.6% excessively (evaluated in terms of subjective opinion rather than number of cigarettes per day).

### Gynecologic and Obstetric Health

Mean age for menarche was 13.1 years  $\pm$  1.6, which was spontaneous in 99.7% and 0.3% drug induced. Menstrual irregularity was reported in 18.8%. Average cycle duration was 24.7 days  $\pm$  12.5. Average duration of menstrual bleeding was 5.9 days  $\pm$  3. Dysmenorrhea was reported in 90.8%, mild was reported in 65.9%, and severe was reported in 24.9%. FGC was reported in 36.8%.

Current pregnancy was reported in 9.6%. A percentage of 27.7 were nulliparous, and 72.3% conceived previously and delivered. Mode of delivery was vaginal in 46.6%, cesarean in 40.6%, and both in 12.8%. Median number of siblings was 1, range 0–8. Infertility was reported in 1.7%.

Contraceptive methods were utilized by 54.1% of participants, intrauterine device (IUD) in 38.1%, contraceptive pills in 24.7%, coitus interruptus in 18.4%, condoms in 13.5%, safe period in 5%, and other methods including vaginal suppositories or rings and skin patch in 0.3%. Dissatisfaction with the contraceptive method used was 30.5%, being highest with coitus interruptus

**Table 1** FSFI subdomain scores

	N	Mean	Standard deviation
FSFI desire	344	4.0884	1.23027
FSFI arousal	344	3.7422	1.58578
FSFI lubrication	344	4.6413	1.52848
FSFI orgasm	344	3.9093	1.73354
FSFI satisfaction	344	4.1465	1.78099
FSFI pain	344	2.4837	1.37600
FSFI total	344	23.0113	6.53984

FSFI = Female Sexual Function Index

(39.6%), followed by condoms (32.1%), contraceptive pills (29.4%), IUD (28.9%), and safe period (8.3%).

### Sexual Function

Average total Female Sexual Function Index (FSFI) score was 23  $\pm$  6.5. The individual FSFI scores are listed in Table 1. According to the cutoff value of 26.55 suggested by Wiegel et al. [7], 59.1% of participants were classified as being at risk for female sexual dysfunction (rFSD), while 40.9% had normal sexual function. Age adjusted prevalence of rFSD was 59.5%, standardized to World Health Organization (WHO) World Standard Population [8]. In response to the general question “do you like sex,” 85.8% reported “yes,” 2.6% reported “no” and 11.6% were indifferent.

Those who subjectively felt that they had low sexual desire (as reported by a separate question independent of FSFI) attributed this to indifference (39%), pain (19.1%), disgust for sex (13.2%), fear (2.9%), and all of the aforementioned in 25.8%. Participants who reported dyspareunia attributed it to insufficient foreplay (33.4%), infections (26.4%), psychological distress (24.3%), and poor lubrication (20.7%). Foreplay was reported as insufficient in 60% of cases.

Average monthly coital frequency was 12.1  $\pm$  9.8, median 10. When asked about what they thought a normal frequency should be, participants reported a median of 12. Those satisfied with the reported frequency comprised 53.2%. The ones dissatisfied with the frequency of coitus comprised 46.8%, requiring a higher frequency (37.4%) or a lower frequency (9.4%).

When asked about their perception of partner's erectile function, 27.3% reported that their partners experienced some degree of erectile dysfunction, occasionally in 11.9%, mostly in 9%, and always in 6.4%, while 72.7% reported that the male partner never or rarely experienced erectile difficulties (50.9% and 21.8%, respectively).

When asked whether they felt that their partners ejaculated before they wished them to, 54.9% of participants reported some degree of premature ejaculation: “always” in 14.2%, “frequently” in 10.8%, and “sometimes” in 29.9%, while 45.1% reported that the male partner never or rarely experiences premature ejaculation (33.5% and 11.6%, respectively). The subjectively reported intravaginal ejaculatory latency time (IELT) was 9.6 minutes, 95% confidence interval (CI) = 8.5–10.6 and expected normal for latency was 16.1 minutes, 95% CI = 13.6–17.4, a 40.4% difference between actual and desired IELT ( $P < 0.001$ ).

The majority reported satisfaction with partner’s penile size (84.5%). Dissatisfaction was not related to the mode of delivery,—if any (odds ratio 1.031, 95% CI 0.545–1.951). Nevertheless, most participants perceived penile size as important for sexual satisfaction (67.2%). Of the latter, 40% believed girth was most important, 40% valued both length and girth, while 20% favored length alone.

Masturbation was reported by 48% of participants, rarely in 22.1%, occasionally in 18.9%, frequently in 4.7%, and always in 2.3%. Masturbation was performed by external stimulation in 64.2%, internal stimulation in 2.3%, and both internal and external stimulation in 33.5%. A percentage of 55.8 of participants reported their belief that masturbation results in decreased desire for coitus.

#### *Effect of Potential Risk Factors on Female Sexual Function*

There was a statistically significant higher prevalence of rFSD among cases with subjectively reported depression (odds ratio 2.2, 95% CI = 1–4.9), insufficient foreplay (odds ratio 1.9, 95% CI = 1.2–2.9), practice of masturbation (odds ratio 2.7, 95% CI = 1.7–4.2), male partner’s erectile difficulties as reported by the female participant (odds ratio 3.4, 95% CI = 2–6), premature ejaculation as reported by the female participant (odds ratio 3, 95% CI = 2–4.7), and dissatisfaction with partner’s penile size (odds ratio 3.5, 95% CI = 1.7–7.2). Total FSFI score correlated negatively with cycle duration ( $r = -0.17$ ,  $P < 0.005$ ). As to educational level, rFSD was lower among postgraduates (38.7%), in comparison with school (58.8%) and university (61.8%) students ( $P = 0.048$ ) (Table 2).

There was no statistically significant correlation between age and total FSFI score or its subdomains, nor was there a statistically significant dif-

ference in the prevalence of rFSD between the three age groups studied. No statistically significant relationship was detected between the prevalence of rFSD and diabetes mellitus, hypertension, smoking, ongoing pregnancy, mode of previous child delivery, infertility, menstrual irregularities, dysmenorrhea, interpersonal distress, and subjectively reported hirsutism. It also appears that FGC had no influence on the prevalence of rFSD (Table 2).

In addition to their effect on the total FSFI score, the aforementioned risk factors for rFSD were examined for their effect on the individual domains of FSFI: desire, arousal, lubrication, orgasm, satisfaction, and pain (Table 3). Insufficient foreplay had a negative effect on the domains of desire and pain. Erectile dysfunction decreased lubrication. Premature ejaculation compromised orgasm and satisfaction. Dissatisfaction with coital frequency decreased satisfaction scores, while dissatisfaction with penile size decreased lubrication. Finally, habituation to reaching orgasm by external stimulation had a negative effect on the domains of orgasm and lubrication, while practice of masturbation decreased lubrication and satisfaction scores.

The response to the general question “do you like sex” was evaluated against FSFI for reliability as a screening tool for rFSD. The responses for that question were one of the following: Yes, Indifferent, and No. For the purpose of statistical analysis, we combined the “indifferent” group (11.6% of cases) with the “no” group (2.6%) such that the answers are either “yes or “no.” Sensitivity and specificity of the question “do you like sex?” were found to be 22.5% and 97.2%, respectively,  $P < 0.005$ .

#### **Discussion**

Online surveys have the virtue of being nonconfrontational, which may possibly decrease the stress associated with one-on-one interviewing whether face to face or phone based, increasing participation and decrease malreporting. Upon offering the survey to potential participant, we completely avoided offering the invitation to participate according to browsing preferences and keywords searches in order to avoid selection bias to the largest extent possible [4].

While online surveys have their advantages, they may not necessarily represent the general population, especially with participants being of a generally higher educational standard and from a

**Table 2** Possible risk factors and their effect on rFSD

		rFSD %	Normal %	P value	Odds ratio	95% CI	
Depression	Yes	75.0	25.0	<0.05	2.2	1.018	4.917
	No	57.3	42.7				
Insufficient foreplay	Yes	65.2	34.8	<0.005	1.875	1.208	2.910
	No	50.0	50.0				
Masturbation	Yes	71.1	28.9	<0.005	2.658	1.703	4.151
	No	48.0	52.0				
Partner's erectile difficulties	Yes	78.7	21.3	<0.005	3.444	1.982	5.984
	No	51.8	48.2				
Partner's premature ejaculation	Yes	70.9	29.1	<0.005	2.993	1.918	4.671
	No	44.9	55.1				
Dissatisfaction with partner's penile size	Yes	81.1	18.9	<0.005	3.472	1.680	7.175
	No	55.3	44.7				
Hypertension	Yes	64.3	35.7	0.787	1.255	0.412	3.828
	No	58.9	41.1				
Diabetes	Yes	80.0	20.0	0.652	2.800	0.310	25.319
	No	58.8	41.2				
Smoking	Yes	60.9	39.1	0.426	1.095	0.638	1.878
	No	58.7	41.3				
Ongoing pregnancy	Yes	69.7	30.3	0.264	1.665	0.766	3.616
	No	58.0	42.0				
Mode of delivery	Normal	53.8	46.2	0.253			
	Cesarian	64.7	35.3				
	Both	56.3	43.8				
Infertility	Yes	33.3	66.7	0.231	0.339	0.061	1.877
	No	59.6	40.4				
Menstrual irregularity	Yes	58.5	41.5	1	0.967	0.559	1.672
	No	59.3	40.7				
Dysmenorrhea	No	64.5	35.5	0.76			
	Mild	58.1	41.9				
	Severe	60.7	39.3				
Interpersonal distress	Yes	58.6	41.4	0.911	0.962	0.621	1.489
	No	59.5	40.5				
Hirsutism	Yes	53.6	46.4	0.375	0.763	0.429	1.356
	No	60.2	39.8				
Female genital cutting	Yes	60.6	39.4	0.734	1.103	0.706	1.724
	No	58.3	41.7				

rFSD = risk for female sexual dysfunction; CI = confidence interval

younger age group, as was the case with GOSS. This survey had some limitations that are being addressed in subsequent launches in the same and in different languages. Measure of depression was

a single binary nonvalidated item, and therefore likely to underestimate depression effects. In addition, some data were not inquired upon such as characterization of diabetes mellitus, interpersonal

**Table 3** Possible risk factors and their effect on FSFI individual domains

	Desire	Arousal	Lubrication	Orgasm	Satisfaction	Pain
Insufficient foreplay	$t = -0.304$ , $P \leq 0.05$		$t = -2.303$ , $P \leq 0.005$		$t = -3.789$ , $P \leq 0.005$	$t = 0.092$ , $P \leq 0.05$
Orgasm by external stimulation			$t = 0.683$ , $P \leq 0.05$	$t = 2.444$ , $P \leq 0.05$		
Masturbation			$t = -2.08$ , $P \leq 0.05$		$t = -5.027$ , $P \leq 0.05$	
Erectile dysfunction			$t = -3.531$ , $P \leq 0.05$			
Premature ejaculation				$t = -5.699$ , $P \leq 0.05$	$t = -5.343$ , $P \leq 0.005$	
Dissatisfaction with size			$t = -1.615$ , $P \leq 0.05$			
Dissatisfaction with coital frequency					$t = -2.736$ , $P \leq 0.05$	

FSFI = Female Sexual Function Index

distress, gestational age, educational level of partners, women' employment, medication taken, antipsychotic drugs, and religion.

In this study, the general prevalence of rFSD was 59.1%. Most participants came from the 18–39 age group, average age being 28.9 years  $\pm$  5.9. While this represents females in the reproductive age group, it does not evaluate sexuality in the older age groups that are, theoretically speaking, more prone to risk factors and FSD. The herein reported general prevalence of rFSD therefore reflects prevalence of FSD among females in the reproductive age, rather than postmenopausal.

Other studies addressed different age ranges from diverse geographic and ethnic origins. A study conducted in India utilizing the FSFI questionnaire, investigating 149 females in the age range of 17–75 years recruited from outpatient clinics rather than the general population, showed a general prevalence of 73.2% for rFSD [9]. A Malaysian study addressing the prevalence of sexual dysfunction among 230 females aged 18–70 years in a primary healthcare setting utilizing FSFI reported a prevalence of 39.6%. Another study on 1,000 woman from Egypt, attending medical care centers and aged 16–49 years, showed a prevalence of 68.9% [10]. However, those studies cannot represent the general population being clinic based. Focusing on population-based studies, a report from Korea showed a prevalence of 43.8% for FSD among the wider age range of 20–67 years [11]. The prevalence of FSD among 518 Turkish women in the age range of 18–55 years was 48% as detected by FSFI [12]. In contrast, a study from the USA on 2,109 women from the older age group of 40–69 years showed a prevalence of FSD of 45% [13]. Evaluating an age range similar to that reported upon in GOSS-AR-F, an online questionnaire reported a 32.4% prevalence of FSD among 1,086 German medical students [14]. Another study conducted among Korean women showed a prevalence of 43.1% in 504 participants younger than 40 years [15].

In GOSS-AR-F, age adjusted prevalence was 59.5%, standardized to WHO World Standard Population [8]. To our knowledge, only one study on the prevalence of FSD was age adjusted. That study was community based, evaluating 179 Ghanaian males and females [16]. The Golombok-Rust Inventory of Sexual Satisfaction questionnaire was used. Average age of female participants was 32.5  $\pm$  7.9. Prevalence of FSD was 65.5%, of orgasmic problems was 74.9%, and of vaginismus was 69.3%.

Some studies show an increase in the prevalence of FSD with age. In a review article by Lewis et al., desire, arousal, and lubrication disorders increased in women above 50 years of age, and to a negligible extent, dyspareunia [17]. Another study showed similar inhibition with age particularly in the domains of desire, arousal, and lubrication more than other aspects of female sexual function among women aged 18–70 years [18]. However, other studies reported no influence for age on female sexual function, including a study by Oberg et al. on a sample of 1,056 sexually active Swedish women aged 18–65 years [19]. Present results from GOSS-AR-F report that age apparently has no influence on the prevalence of rFSD within the reproductive age groups but not necessarily within the postmenopausal age group.

Diabetes is proposed as a risk factor for FSD. In a population-based study utilizing FSFI through self-response questionnaire on 930 females aged 20–67 years, diabetes was found to be associated with lower sexual desire (31.1%) [11]. Another population-based study from Brazil on 315 women aged 40–65 years reported that diabetes adversely affected female sexual function [20]. A study in Jordan found that the prevalence of FSD was higher among people with diabetes (59.6% compared with 45.6% in people without diabetes) [21]. In a study on 595 women with diabetes aged 59  $\pm$  6.9 years, diabetes adversely affected female sexual function [22]. The prevalence of FSD was found to be twice as high among people with diabetes compared with the general population [23]. On the other hand, the effect of hypertension was controversial, reported to increase the prevalence of FSD in some studies [20], while denied this effect in others [12,21].

As to the results at hand from GOSS-AR-F, no significant effect for systemic ailments and risk factors such as diabetes, hypertension, and smoking could be detected. In the case of diabetes and hypertension, this can be attributed to a true lack of effect or to the relatively younger age groups studied, considering that contribution of those ailments and risk factors can be more overt in older age groups and can be proportionate to the duration of exposure. It can also be attributed to the paucity of cases positive for either disease in the group studied, which in turn can be because of true rarity of the case or to the possibility of the presence of undiagnosed underlying risk factors that went unnoticed and unreported by the participants.

Male partner-related factors such as erectile difficulties, premature ejaculation, perception of a smaller phallus by the female partner, and unsatisfactory foreplay seem to contribute significantly to rFSD. In fact, as far as the results of GOSS-AR-F are concerned, they can be considered as the main contributing factors to rFSD alongside depression. This is supported by other literature reports proving that male erectile dysfunction may induce FSD, which in turn may improve after treatment of male sexual dysfunction [24,25].

GOSS-AR-F reports a prevalence of 27.3% for ED and 54.9% for premature ejaculation, from the perspective of the female partner, while GOSS-AR-M [4,5] reports a prevalence of 45.1% for ED and 82.6% for premature ejaculation as reported by the male subjects concerned. Despite this discrepancy, the IELT reported by both males [4,5] (9.06 minutes) and females (9.6 minutes) coincided and so did the expected normal for latency (16.5 minutes and 16.1 minutes, respectively). Both males and females reported a difference more than 50% between the actual and the desired. This shows that both males and females desire a longer coital duration and better ejaculatory control, despite the actual figures reported for latency being acceptable. This calls for either acceptance of this desire, modifying our perception for normal latency and prescribing treatment for such cases, or considering this requirement as overestimated and educating the couple as to alternative complementary methods for sexual gratification during and after coitus including foreplay and afterplay. Premature ejaculation is therefore an important risk factor for rFSD, especially considering that premature ejaculation is the most prevalent male sexual dysfunction [4,5], and that coital duration is associated with greater satisfaction and higher likelihood for the female partner to reach orgasm [26].

Foreplay is an important part of sexual activity for both partners. In the present study, inadequate foreplay was reported by 60% of participants and contributed to higher prevalence of rFSD as well as statistically significant decline in the domains of desire, satisfaction, lubrication, and pain (higher prevalence of dyspareunia). Insufficient foreplay was reported as the cause for dyspareunia in 33.4%. This supports the findings of "The Global Better Sex Survey," which investigated 12,563 male and female participants and demonstrated that foreplay was important to both males and females [27]. Another study reported that the main complaint of females with FSD was inadequate

foreplay [28]. Similarly, in an investigation of 2,095 females in the age range of 30–69 years, satisfaction with sexual life was largely dependent on foreplay and orgasm [29].

Eighty-five percent were satisfied with their partners' size. However, those dissatisfied with partner's penile size manifested higher rates of rFSD. Those "concerns over penile size" have also caused higher rates of ED among males, despite penile size being normal, as reported in GOSS-AR-M [5]. The resultant ED is in turn a major risk factor for rFSD as stated formerly. Concerns over penile size can thus be a source of sexual dysfunction for both male and females should be addressed in counseling the couple and possibly be alleviated by sex education as to the dimensions of the vagina relative to the penis and as to sexual positions that achieve more sexual gratification.

Contrary to general belief, 67.2% reported that penile size is important for sexual fulfillment. Forty percent believed girth is most important, 40% valued both length and girth, while 20% favored length alone, in contrast to males who believed that penile length ranks first [5]. This is in contrast to other populations such as the Czech, in which vaginal orgasm consistency was associated with a preference for a longer than average penis [30]. Another common belief is that vaginal delivery may lead to a patulous vagina and therefore less sexual satisfaction. This could not be reproduced in the results at hand, where vaginal delivery was associated with neither more rFSD nor dissatisfaction with partner's penile size.

The mensal median for coital frequency as reported by females was 10, with the expected for normal being 12, in contrast to that reported by males in GOSS-AR-M [4,5] where median for coital frequency was 10 and the expected for normal was 15, a wider discrepancy. It appears that males overestimate the value of coital frequency "quantity" for satisfaction of the female partner, whereas females do not share the same opinion. The results of this survey relate satisfaction of the female partner to other elements more toward "quality" of the relationship (in terms of foreplay, penile rigidity, and ejaculatory control), rather than "quantity." This is in contrast to other studies where in Portugal, a higher frequency of penile vaginal intercourse (PVI) correlated positively with satisfaction, intimacy, trust, passion, love, and global relationship quality [31], and in Sweden, higher frequency of PVI was directly associated with higher satisfaction with sex life, partnership, mental health, and life in general [32]. In China,

higher frequency of PVI was associated with sexual satisfaction of both males and females [33], although not necessarily eliciting sexual dysfunction that was not evaluated by a validated questionnaire in those studies.

Whatever the cause of sexual dissatisfaction is, females may find a resort in masturbation that can aggravate the problem further, being a risk factor for FSD on its own. In GOSS-AR-F, masturbation was associated with lower total FSFI, lubrication, and satisfaction scores. This can be explained by the possibly better ability of an individual at self-stimulation compared with contralateral stimulation by the partner where orgasm is more prone to be reached. This may yield preference of and habituation to masturbation and clitoral orgasm, possibly leading to a progressive decline in the preference of and sensitivity to partner's attempts at sexual stimulation, and lower proneness to vaginal orgasm, theoretically speaking. Upon counseling the couple, the female partner should be made aware that solitary masturbation may compound her sexual dysfunction. The sex therapist and the female partner should jointly teach the male partner the female's favored ways for achieving sexual satisfaction such that they are incorporated into the sexual act, in foreplay, coitus, and afterplay. This is in accordance with another report where a wide range of better psychological and physiological health indices were associated specifically with PVI, while other sexual activities had weaker, no, or (in the cases of masturbation and anal intercourse) inverse associations with health indices [26]. Similarly, a study on Czech women showed that having ever masturbated was associated with higher risk of female sexual arousal disorder (FSAD) with distress, reflecting a psychosexual pathway away from adequate focus on PVI rather than an attempt to ameliorate FSAD. Inadequate focusing of mental attention on vaginal sensations during PVI could be part of a mechanism for developing and/or maintaining FSAD because mental focus on vaginal sensations during PVI might activate or otherwise support sexual arousal, including lubrication and swelling of the vagina [34].

In a population-based study using FSFI on 508 females 18–52 years old, depression negatively affected female sexual function [15]. Similar findings were demonstrated in a hospital-based study using FSFI on 1,457 females [35]. This is in accordance with our results that showed a statistically significant higher prevalence of rFSD among females subjectively reporting depression.

Some studies denied an effect for the level of education on FSD [12,36]. However, other studies showed a positive correlation with FSD [13], or a negative one [9,37]. GOSS-AR-F demonstrated higher prevalence of rFSD among school and university students and lower prevalence among postgraduates.

FGC is a ritual performed in some communities in the region surveyed, involving cutting of part or all of the external genitalia. Surprisingly, FGC was reported by an overwhelming 36.8% of females participating in GOSS-AR-F. Comprehensive data about FGC have been collected including who performed it, at what age, whether or not anesthesia was used, resultant complications, motivation behind it, and general opinion about it, among other information, which is the scope of another paper. However, there was no statistically significant decline in sexual function among FGC victims, neither in the total FSFI score nor in any of its subdomains. This is no justification for FGC but a fact we have witnessed and are reporting upon, despite not currently having an explanation for. The effect of FGC on female sexual function is controversial. Few other studies addressed this issue. In one study on 137 female from general population using FSFI, females who experienced genital cutting were able to reach orgasm [38]. On the contrary, other studies reported adverse effect for FGC on female sexual function [36,39]. The extent of cutting may possibly determine its effect on sexual function, which is very difficult to investigate in population-based surveys. In this domain, a report that actually examined participants for the extent of FGC pointed out that minor circumcision did not affect sexual function, contrary to extensive cutting that markedly affected sexual function [40].

In the present study, there was no influence for ongoing pregnancy on rFSD, although gestational age and other factors that may affect pregnancy were not determined. In contrast, other studies point to higher rates of FSD with pregnancy, increasing with gestational age [41,42]. The present study also reported no effect for previous childbirth, mode of child delivery (vaginal, cesarean section, both) and number of deliveries on rFSD, in accordance with other studies [43].

Infertility had no impact on sexual function in the present survey. However, other studies suggested an association between infertility and FSD that may be attributed to psychological factors or to the influence of medical therapy [44,45]. In GOSS-AR-F, neither the utility of contraception

nor its various methods had an impact on sexual function. However, both females (GOSS-AR-F) and males (GOSS-AR-M [4,5]) report higher rates of dissatisfaction with condoms and coitus interruptus than with other contraceptive methods. IUDs are associated with higher satisfaction rates. This conforms with another report that showed that condom use impaired some benefits of PVI [26].

The simple question “do you like sex” appears to be inaccurate in the diagnosis of FSD and cannot be relied upon as a screening tool. However, a considerable sector of females with rFSD still “liked sex,” hence the low statistical sensitivity. This could mean that the condition is reversible since there is motivation to get over it. However, this is only a speculation.

FSD has been regarded as vague and relatively difficult to treat. However, in light of the findings that females with rFSD still liked sex and that rFSD was mostly related to male partner sexual deficiencies and considering that the latter male sexual deficiencies are more easily reversible, we should be more optimistic that females with rFSD can probably find cure with adequate motivation and, in many cases, with enhancing male partner’s sexual performance.

## Conclusion

Female sexual function in the reproductive age appears to be adversely affected by psychological factors (depression and perception of partner’s genital size) and shortcomings in male sexual function more than anything. And in the latter domain, penile rigidity and ejaculatory control play pivotal roles in female sexual fulfillment, in addition to foreplay, factors formulating the quality of the sexual relationship. In contrast, quantity—in the form of frequency of intercourse—had no effect on female sexual function, along with diabetes, hypertension, smoking, infertility, contraception, and other organic factors. Female sexual fulfillment depends largely on the contribution from the male partner. Many cases of FSD can therefore be managed with the focus on male partner’s ailments and attitudes that are relatively easier to manage.

## Acknowledgment

None.

**Corresponding Author:** Osama Kamal Zaki Shaeer, MD, Department of Andrology, Kasr El Aini Faculty of

Medicine, Cairo University, 21 Gaber Ibn Hayan St., Dokki, Cairo Egypt, 12311 ARE; PO Box: 47 Bab El-Louk, 11513, Cairo, Egypt. Tel: (202) 33359047, (202) 33374360, (202) 01006600606; Fax: (202) 37605181; E-mail: dr.osama@alrijal.com

*Conflict of Interest:* None.

## Statement of Authorship

### Category 1

#### (a) Conception and Design

Osama Shaeer

#### (b) Acquisition of Data

Osama Shaeer; Kamal Shaeer; Eman Shaeer

#### (c) Analysis and Interpretation of Data

Osama Shaeer; Kamal Shaeer

### Category 2

#### (a) Drafting the Article

Osama Shaeer; Kamal Shaeer; Eman Shaeer

#### (b) Revising It for Intellectual Content

Osama Shaeer; Kamal Shaeerh

### Category 3

#### (a) Final Approval of the Completed Article

Osama Shaeer; Kamal Shaeer; Eman Shaeer

## References

- 1 Basson R. Recent advances in women’s sexual function and dysfunction. *Menopause* 2004;11:714–25.
- 2 Hayes R, Dennerstein L. The impact of aging on sexual function and sexual dysfunction in women: A review of population-based studies. *J Sex Med* 2005;2:317–30.
- 3 Hayes RD, Dennerstein L, Bennett CM, Fairley CK. What is the “true” prevalence of female sexual dysfunctions and does the way we assess these conditions have an impact? *J Sex Med* 2008;5:777–87.
- 4 Shaeer O, Shaeer K. The global online sexuality survey (GOSS): Erectile dysfunction among Arabic-speaking internet users in the Middle East. *J Sex Med* 2011;8:2152–60.
- 5 Shaeer O, Shaeer K. The global online sexuality survey (GOSS): Ejaculatory function among Arabic-speaking internet users in the Middle East. *J Sex Med* 2011 Jun 15. [Epub ahead of print] doi: 10.1111/j.1743-6109.2011.02338.x.
- 6 Rosen R, Brown C, Heiman J, Leiblum S, Meston C, Shabsigh R, Ferguson D, D’Agostino R Jr. The Female Sexual Function Index (FSFI): A multidimensional self-report instrument for the assessment of female sexual function. *J Sex Marital Ther* 2000;26:191–208.
- 7 Wiegel M, Meston C, Rosen R. The female sexual function index (FSFI): Cross-validation and development of clinical cutoff scores. *J Sex Marital Ther* 2005;31:1–20.
- 8 WHO. Physical status: The use and interpretation of anthropometry. Report of a WHO Expert Committee. *WHO Technical Report Series 854*. Geneva: World Health Organization; 1995.
- 9 Singh JC, Tharyan P, Kekre NS, Singh G, Gopalakrishnan G. Prevalence and risk factors for female sexual dysfunction in women attending a medical clinic in South India. *J Postgrad Med* 2009;55:113–20.

- 10 Elnashar A, Abdelhady R. The impact of female genital cutting on health of newly married women. *Int J Gynaecol Obstet* 2007;97:238–44.
- 11 Jiann BP, Su CC, Yu CC, Wu TT, Huang JK. Risk factors for individual domains of female sexual function. *J Sex Med* 2009;6:3364–75.
- 12 Oksuz E, Malhan S. Prevalence and risk factors for female sexual dysfunction in Turkish women. *J Urol* 2006;175:654–8; discussion 58.
- 13 Addis IB, Van Den Eeden SK, Wassel-Fyr CL, Vittinghoff E, Brown JS, Thom DH. Sexual activity and function in middle-aged and older women. *Obstet Gynecol* 2006;107:755–64.
- 14 Wallwiener CW, Wallwiener LM, Seeger H, Muck AO, Bitzer J, Wallwiener M. Prevalence of sexual dysfunction and impact of contraception in female German medical students. *J Sex Med* 2010;7:2139–48.
- 15 Song SH, Jeon H, Kim SW, Paick JS, Son H. The prevalence and risk factors of female sexual dysfunction in young Korean women: An internet-based survey. *J Sex Med* 2008;5:1694–701.
- 16 Amidu N, Owiredo WK, Gyasi-Sarpong CK, Woode E, Quaye L. Sexual dysfunction among married couples living in Kumasi Metropolis, Ghana. *BMC Urol* 2011;11:3.
- 17 Lewis RW, Fugl-Meyer KS, Corona G, Hayes RD, Laumann EO, Moreira ED Jr, Rellini AH, Seigraves T. Definitions/epidemiology/risk factors for sexual dysfunction. *J Sex Med* 2010;7:1598–607.
- 18 Sidi H, Puteh SE, Abdullah N, Midin M. The prevalence of sexual dysfunction and potential risk factors that may impair sexual function in Malaysian women. *J Sex Med* 2007;4:311–21.
- 19 Oberg K, Fugl-Meyer AR, Fugl-Meyer KS. On categorization and quantification of women's sexual dysfunctions: An epidemiological approach. *Int J Impot Res* 2004;16:261–9.
- 20 Valadares AL, Pinto-Neto AM, Osis MJ, Sousa MH, Costa-Paiva L, Conde DM. Prevalence of sexual dysfunction and its associated factors in women aged 40–65 years with 11 years or more of formal education: A population-based household survey. *Clinics (Sao Paulo)* 2008;63:775–82.
- 21 Abu Ali RM, Al Hajeri RM, Khader YS, Shegem NS, Ajlouni KM. Sexual dysfunction in Jordanian diabetic women. *Diabetes Care* 2008;31:1580–1.
- 22 Esposito K, Maiorino MI, Bellastella G, Giugliano F, Romano M, Giugliano D. Determinants of female sexual dysfunction in type 2 diabetes. *Int J Impot Res* 2010;22:179–84.
- 23 Dumas M, Douma S. Sexual dysfunction in essential hypertension: Myth or reality? *J Clin Hypertens (Greenwich)* 2006;8:269–74.
- 24 Cayan S, Bozlu M, Canpolat B, Akbay E. The assessment of sexual functions in women with male partners complaining of erectile dysfunction: Does treatment of male sexual dysfunction improve female partner's sexual functions? *J Sex Marital Ther* 2004;30:333–41.
- 25 Chevret-Measson M, Lavallee E, Troy S, Arnould B, Oudin S, Cuzin B. Improvement in quality of sexual life in female partners of men with erectile dysfunction treated with sildenafil citrate: Findings of the Index of Sexual Life (ISL) in a couple study. *J Sex Med* 2009;6:761–9.
- 26 Brody S. The relative health benefits of different sexual activities. *J Sex Med* 2010;7:1336–61.
- 27 Mulhall J, King R, Glina S, Hvidsten K. Importance of and satisfaction with sex among men and women worldwide: Results of the global better sex survey. *J Sex Med* 2008;5:788–95.
- 28 Witting K, Santtila P, Varjonen M, Jern P, Johansson A, von der Pahlen B, Sandnabba K. Female sexual dysfunction, sexual distress, and compatibility with partner. *J Sex Med* 2008;5:2587–99.
- 29 Hisasue S, Kumamoto Y, Sato Y, Masumori N, Horita H, Kato R, Kobayashi K, Hashimoto K, Yamashita N, Itoh N. Prevalence of female sexual dysfunction symptoms and its relationship to quality of life: A Japanese female cohort study. *Urology* 2005;65:143–8.
- 30 Brody S, Weiss P. Vaginal orgasm is associated with vaginal (not clitoral) sex education, focusing mental attention on vaginal sensations, intercourse duration, and a preference for a longer penis. *J Sex Med* 2010;7:2774–81.
- 31 Costa RM, Brody S. Women's relationship quality is associated with specifically penile-vaginal intercourse orgasm and frequency. *J Sex Marital Ther* 2007;33:319–27.
- 32 Brody S, Costa RM. Satisfaction (sexual, life, relationship, and mental health) is associated directly with penile-vaginal intercourse, but inversely with other sexual behavior frequencies. *J Sex Med* 2009;6:1947–54.
- 33 Tao P, Brody S. Sexual behavior predictors of satisfaction in a Chinese sample. *J Sex Med* 2011;8:455–60.
- 34 Weiss P, Brody S. Female sexual arousal disorder with and without a distress criterion: Prevalence and correlates in a representative Czech sample. *J Sex Med* 2009;6:3385–94.
- 35 Lianjun P, Aixia Z, Zhong W, Feng P, Li B, Xiaona Y. Risk factors for low sexual function among urban Chinese women: A hospital-based investigation. *J Sex Med* 2011;8:2299–304.
- 36 Hassanin IM, Helmy YA, Fathalla MM, Shahin AY. Prevalence and characteristics of female sexual dysfunction in a sample of women from Upper Egypt. *Int J Gynaecol Obstet* 2010;108:219–23.
- 37 Worly B, Gopal M, Arya L. Sexual dysfunction among women of low-income status in an urban setting. *Int J Gynaecol Obstet* 2010;111:241–4.
- 38 Catania L, Abdulcadir O, Puppo V, Verde JB, Abdulcadir J, Abdulcadir D. Pleasure and orgasm in women with Female Genital Mutilation/Cutting (FGM/C). *J Sex Med* 2007;4:1666–78.
- 39 Alsibiani SA, Rouzi AA. Sexual function in women with female genital mutilation. *Fertil Steril* 2010;93:722–4.
- 40 Thabet SM, Thabet AS. Defective sexuality and female circumcision: The cause and the possible management. *J Obstet Gynaecol Res* 2003;29:12–9.
- 41 Naldoni LM, Pazmino MA, Pezzan PA, Pereira SB, Duarte G, Ferreira CH. Evaluation of sexual function in Brazilian pregnant women. *J Sex Marital Ther* 2011;37:116–29.
- 42 Xu XY, Yao ZW, Wang HY, Zhou Q, Zhang LW. Women's postpartum sexuality and delivery types. *Zhonghua Fu Chan Ke Za Zhi* 2003;38:219–22.
- 43 Klein K, Worda C, Leipold H, Gruber C, Husslein P, Wenzl R. Does the mode of delivery influence sexual function after childbirth? *J Womens Health (Larchmt)* 2009;18:1227–31.
- 44 Wischmann TH. Sexual disorders in infertile couples. *J Sex Med* 2010;7:1868–76.
- 45 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.

**Appendix 1****An English Translation of “The Global Online Sexuality Survey-Females-Arabic (GOSS-AR-F)”**

1. **Where are you from? (Country)**
2. **How do you classify the area where you were raised?**
  - a. Rural (outside cities, e.g., countryside)
  - b. Urban (cities)
3. **How old are you?**
4. **What kind of education have you received?**
  - a. No formal education
  - b. School
  - c. University
  - d. Post-Graduate
5. **Do you smoke?**
  - No
  - Yes, rarely
  - Yes, moderately
  - Yes, excessively
6. **Do you suffer any medical disease?**
  - No
  - Diabetes
  - Hypertension
  - Increased body hair
  - Irregular menses
  - Depression
  - Coronary heart disease
  - Overweight
  - Hormonal disease
  - Liver disease
  - Kidney Disease
  - Bone/joint disease
7. **Do you experience menstruation?**
  - Yes
  - No
8. **(Optional question) At what age did you have your first menstrual cycle?**
9. **(Optional question) Did your first menses happen on its own or was medical assistance required?**
  - On its own
  - With medical treatment
10. **In the last three months, have you been engaged in a regular sexual relationship with a male partner involving coitus (introduction of the penis into the vagina)?**
  - No
  - Yes
11. **How regular is your sexual relationship?**
  - Always Irregular
  - Mostly Irregular
  - Sometimes regular and sometimes irregular
  - Mostly regular
  - Always regular
12. **Do you have children? How many?**
  - No
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
- 7
- 8
- More than 8
13. **(Optional question) How was your child delivery (if any)?**
  - Normal delivery
  - Cesarian section
  - Both
14. **Are you currently pregnant?**
  - Yes
  - No
15. **How regular is your menses?**
  - I do not menstruate
  - Always irregular
  - Mostly irregular
  - Mostly regular
  - Always regular
16. **(Optional question) How long is your menses?**
  - Bleeding days:
  - No bleeding days:
17. **(Optional question) Do you experience pain before or during menstrual bleeding?**
  - No
  - Rarely
  - Sometimes
  - Mostly
  - Always
18. **(Optional question) If you experience pain before or during menstrual bleeding, how severe is it?**
  - Mild
  - Moderate
  - Severe
19. **Over the past 4 weeks, how often did you feel sexual desire or interest?**
  - Almost never or never
  - A few times (less than half the time)
  - Sometimes (about half the time)
  - Most times (more than half the time)
  - Almost always or always
20. **Over the past 4 weeks, how would you rate your level (degree) of sexual desire or interest?**
  - Very low or none at all
  - Low
  - Moderate
  - High
  - Very high
21. **If low, why do you think this is?**
  - Disgust
  - Indifference
  - Fear
  - Pain
  - Hostility
  - Otherwise
22. **Over the past 4 weeks, how often did you feel sexually aroused (“turned on”) during sexual activity or intercourse?**
  - No sexual activity
  - Almost never or never
  - A few times (less than half the time)
  - Sometimes (about half the time)
  - Most times (more than half the time)
  - Almost always or always

23. **Over the past 4 weeks, how would you rate your level of sexual arousal (“turn on”) during sexual activity or intercourse?**  
 No sexual activity  
 Very low or none at all  
 Low  
 Moderate  
 High  
 Very high
24. **Over the past 4 weeks, how confident were you about becoming sexually aroused during sexual activity or intercourse?**  
 No sexual activity  
 Very low or no confidence  
 Low confidence  
 Moderate confidence  
 High confidence  
 Very high confidence
25. **Over the past 4 weeks, how often have you been satisfied with your arousal (excitement) during sexual activity or intercourse?**  
 No sexual activity  
 Almost never or never  
 A few times (less than half the time)  
 Sometimes (about half the time)  
 Most times (more than half the time)  
 Almost always or always
26. **Over the past 4 weeks, how often did you become lubricated (“wet”) during sexual activity or intercourse?**  
 No sexual activity  
 Almost never or never  
 A few times (less than half the time)  
 Sometimes (about half the time)  
 Most times (more than half the time)  
 Almost always or always
27. **Over the past 4 weeks, how difficult was it to become lubricated (“wet”) during sexual activity or intercourse?**  
 No sexual activity  
 Not difficult  
 Slightly difficult  
 Difficult  
 Very difficult  
 Extremely difficult or impossible
28. **Over the past 4 weeks, how often did you maintain your lubrication (“wetness”) until completion of sexual activity or intercourse?**  
 No sexual activity  
 Almost never or never  
 A few times (less than half the time)  
 Sometimes (about half the time)  
 Most times (more than half the time)  
 Almost always or always
29. **Over the past 4 weeks, how difficult was it to maintain your lubrication (“wetness”) until completion of sexual activity or intercourse?**  
 No sexual activity  
 Not difficult  
 Slightly difficult  
 Difficult  
 Very difficult  
 Extremely difficult or impossible
30. **Over the past 4 weeks, when you had sexual stimulation or intercourse, how often did you reach orgasm (climax)?**  
 No sexual activity  
 Almost never or never  
 A few times (less than half the time)  
 Sometimes (about half the time)  
 Most times (more than half the time)  
 Almost always or always
31. **Over the past 4 weeks, when you had sexual stimulation or intercourse, how difficult was it for you to reach orgasm (climax)?**  
 No sexual activity  
 Not difficult  
 Slightly difficult  
 Difficult  
 Very difficult  
 Extremely difficult or impossible
32. **Over the past 4 weeks, how satisfied were you with your ability to reach orgasm (climax) during sexual activity or intercourse?**  
 No sexual activity  
 Very dissatisfied  
 Moderately dissatisfied  
 About equally satisfied and dissatisfied  
 Moderately satisfied  
 Very satisfied
33. **Over the past 4 weeks, how satisfied have you been with the amount of emotional closeness during sexual activity between you and your partner?**  
 No sexual activity  
 Very dissatisfied  
 Moderately dissatisfied  
 About equally satisfied and dissatisfied  
 Moderately satisfied  
 Very satisfied
34. **Over the past 4 weeks, how satisfied have you been with your sexual relationship with your partner?**  
 Very dissatisfied  
 Moderately dissatisfied  
 About equally satisfied and dissatisfied  
 Moderately satisfied  
 Very satisfied
35. **Over the past 4 weeks, how satisfied have you been with your overall sexual life?**  
 Very dissatisfied  
 Moderately dissatisfied  
 About equally satisfied and dissatisfied  
 Moderately satisfied  
 Very satisfied
36. **Over the past 4 weeks, how often did you experience discomfort or pain during vaginal penetration?**  
 Did not attempt intercourse  
 Almost never or never  
 A few times (less than half the time)  
 Sometimes (about half the time)  
 Most times (more than half the time)  
 Almost always or always
37. **Over the past 4 weeks, how often did you experience discomfort or pain following vaginal penetration?**  
 Did not attempt intercourse  
 Almost never or never

- A few times (less than half the time)  
 Sometimes (about half the time)  
 Most times (more than half the time)  
 Almost always or always
38. **Over the past 4 weeks, how would you rate your level (degree) of discomfort or pain during or following vaginal penetration?**  
 Did not attempt intercourse  
 Very low or none at all  
 Low  
 Moderate  
 High  
 Very high
39. **In your opinion, what could be the reason for pain?**  
 Infections  
 Psychological/emotional stress  
 Poor lubrication (dryness)  
 Little foreplay  
 Other
40. **Do you like sex?**  
 No  
 Indifferent  
 Yes
41. **Do you think that you are under psychological/emotional stress?**  
 a. No  
 b. Yes, career/financial  
 c. Yes, personal with partner  
 d. Yes, otherwise
42. **What do you think is the source of stress:**  
 a. Partner  
 b. Family/children  
 c. Work  
 d. Financial  
 e. Other
43. **Do you think that your partner suffers weak erection?**  
 Never  
 Rarely  
 Sometimes  
 Mostly  
 Always
44. **Do you think your partner ejaculates too early/before you wish him to?**  
 Never  
 Rarely  
 Sometimes  
 Mostly  
 Always
45. **How long (in minutes) does intercourse take?**
46. **In your opinion, how long do you think intercourse should take?**
47. **Do you find the size of your partner's penis satisfactory?**  
 No  
 Yes
48. **Do you think that size of the penis is important for your sexual satisfaction?**  
 No  
 Yes  
 I don't know
49. **Do you think that the bigger the penis is the higher is your sexual pleasure/satisfaction?**  
 No  
 Yes  
 I don't know
50. **(Optional question) If you answered "yes" to the previous question, then which do you think is more important for sexual fulfillment, penile length or penile width?**  
 Length  
 Width  
 Both
51. **How many times per month do you perform sexual intercourse?**
52. **Are you comfortable with that frequency (number of times you have intercourse every month)?**  
 No, prefer more  
 No, prefer less  
 Yes
53. **In your opinion, how many times should one have intercourse every month (on average)?**  
 Please enter a number
54. **Does your partner perform foreplay (stimulation/teasing by hand or mouth before intercourse)?**  
 No  
 Yes, but would prefer more  
 Yes, but would prefer less  
 Yes, adequately
55. **How do you reach orgasm (climax)?**  
 (Pick one or more answers)  
 I never climax  
 By internal vaginal stimulation  
 By external stimulation  
 Both
56. **Do you masturbate?**  
 No  
 Rarely  
 Sometimes  
 Frequently  
 Always
57. **(Optional question) If you do masturbate, how do you perform masturbation?**  
 Internal stimulation  
 External Stimulation  
 Both  
 Other
58. **In your opinion, what are the harms of masturbation?**  
 I don't know  
 None  
 Decreased sexual desire  
 Decreased sexual pleasure/enjoyment at intercourse  
 Decreased probability of orgasm at intercourse  
 Infertility  
 Generalized weakness  
 Eye disease  
 Joint disease  
 Other

59. **Were you circumcised?**  
 (Circumcision is a ritual of certain cultures where part of the genitals is cut)  
 Yes  
 No  
 I am not sure
60. **If you were circumcised, how old were you then?**
61. **(Optional question) If you were circumcised, who performed circumcision?**  
 Doctor  
 Nurse  
 Midwife  
 Barber  
 Other  
 I don't know
62. **(Optional question) If you were circumcised, was anesthesia used?**  
 No  
 I don't know  
 Yes
63. **If you were circumcised, did you suffer complications?**  
 No  
 Pain  
 Bleeding  
 Infection  
 Urinary problems
- Sexual problems  
 Problems with child delivery  
 Other
64. **(Optional question) If you were circumcised, if it was up to you, would you have had it done in the first place?**  
 No  
 Indifferent  
 Yes
65. **Do you use contraception?**  
 No  
 Yes
66. **(Optional question) If you do, what contraceptive method(s) do you use?**  
 Safe period  
 Coitus Interruptus (ejaculation outside the vagina)  
 Condoms  
 IUD (loop)  
 Contraceptive pills  
 Tampons  
 Vaginal cap  
 Tubal ligation  
 Other
67. **(Optional question) Are you satisfied with the contraceptive method you use?**  
 Dissatisfied  
 Indifferent  
 Satisfied