Sexual satisfaction of Intra Uterine Device users versus non-users: A cross sectional comparative study in Egypt

Original Article

Sabha Mahmoude Mohammed[1], Alaa Wageh Osman[1], Abdel -Hady El-Gilany[2] and Ahmed Mousa El Mennayyer[1]

[1]Department of Obstetric and Gynecology, [2]Department of Community, Faculty of Medicine, Mansoura University, Egypt

ABSTRACT

Objective: To assess and compare the sexual satisfaction between intra uterine contraceptive device users and non-users.

Methods: This cross-sectional comparative study was conducted in Primary Health Care Unit Affiliated to Dekernis Health Administration, Mansoura, Egypt. The target populations were the Intra uterine devise users and non-users (as comparison group) with 180 subjects in each group. The Sexual Satisfaction Scale for Women (SSS-W) was utilized to assess female sexual satisfaction. SSS-W consists of 30-item grouped into 5 domains: communication, compatibility, contentment, relational concern, and personal concern. Each domain consists of six items which were formatted in a conventional questionnaire of a 5- point Likert scale and a total score ranged from 30- 150.

Results: The IUD adversely affects SSS-W as the overall score among IUD users was significantly lower than non-users (total score = 76.44±11.04 in IUD users vs. 95.44±8.62 in IUD non-users, p-value < 0.01) this pattern persist in different domains of SSS-W. By linear regression analysis the IUD use is an independent predictor of all over satisfaction scale and its different domains.

Conclusion: sexual satisfaction concerns should be included as an additional and important item in women's choice of suitable contraceptive method beside routine items like efficacy and safety of method.

INTRODUCTION

According to the World Health Organization, sexual function includes the physical, emotional, and social health of the woman. A good sexual health correlates with good health[1]. Sexual function is needed throughout the life stages. It is necessary for sexual orientation, sexual identity, sexual pleasure, intimacy, eroticism, and reproductive function. Adequate sexual function is the ability to start sexual stimulation, experience lubrication, orgasm, and sexual pleasure without pain or discomfort. Human sexuality also includes social functioning, culture, gender identity, and spirituality. The sexual function differs among males and females due to the nature of the reproductive organs, which are important for both enjoying sexual pleasure and reproduction[2].

Females face several challenges in their sexual life, especially in relation to the contraceptive method they choose. Almost all contraceptive methods can affect the sexual function[2]. In general, Intra Uterine Device (IUD) is one of the commonest contraceptive method used by women[3]. IUD offers a long-acting contraception that has a high effectiveness in preventing gestation, does not require strict instructions, and is highly accepted by women[4]. It is often preferred by women as it is long-acting contraceptive method, with a rapid return to fertility after its removal, and it also not expensive[2].

Worldwide, 14.3% of women are using IUDs, however the rate of its use higher in developing countries than developed countries (14.5% versus 7.6%)[2,5]. Studies stated that sexual functioning determines a female's contraceptive preference, practice, and period of use. The IUD might have an effect on the sexual function[6].

The IUD offered a long-acting contraception leading to reduced anxiety and better sexual satisfaction, however it not without adverse effects which include bleeding, abdominal cramp, mood changes, and weight gain. These adverse effects can negatively affect sexuality[7]. Some females do not prefer the use of IUDS because of concerns

on its effects on sexuality. Other females state that having a device with attached inside the body appears strange and foreign[2]. Each contraceptive method can have its own effects on sexual functioning, however the effect of IUD on sexuality has not been completely determined[3]. To the best authors' knowledge there is no published studies on the effect of IUD use on female sexual satisfaction in Egypt using female sexual satisfaction scale of women SSS-W[8]. This study aims to compare sexual satisfaction between IUD users and non-users.

POPULATION AND METHODS

Study locality and duration:
This Cross-sectional comparative study was carried out in a Primary Health Care Unit Affiliated to Dekernis Health Administration, Mansoura, Egypt, in the period between August 2021 to August 2022.

Target population:
Intra uterine devise users and Non-intra uterine devise users (comparison group).

Inclusion criteria:
Married female from 18 to 45 years (reproductive age), Continuous marital relationship, User of IUD (IUD must be inserted more than one year, not lactating and not pregnant), Non user of IUD (no contraception used). All women are free from gynecological disorders and their husbands are free from male organic disorder.

Sample size:
The Medcalc 15.8 software (https://www.medcalc.org/) was used to calculate sample size. The primary outcome was the mean sexual Satisfaction Scale for Women (SSS-W).

A pilot study on 30 IUD users and 30 non-IUD users found that that the means of SSS-W were 74.9 and SD= 9.4 in IUD users vs. 82.6 and SD=7.6 in the non-users.

With alpha error of 1% and study power of 99%, then sample size was calculated as 60 in each group. This number underwent multiplication by a design effect of 3 to allow for stratified analysis, so our final sample was 180 in each group.

Study questionnaire:
An Arabic questionnaire was used to collect Socio-demographics (e.g. age, residence, income and educational level) and Obstetrical data (e.g. gravidity and parity).

Clinical data evaluation:
Assessed by history taking and appropriate clinical examination based on obstetric and medical comorbidities.

Tools to evaluate sexual satisfaction:
A certified Arabic version of female sexual satisfaction scale of women (SSS-W) was used to assess sexual satisfaction. The scale was translated by 2 bilingual professors affiliated to Delta Agency for Translation, Publishing and Training, Cairo.

SSS-W consists of 30-item grouped into 5 domains: communication, compatibility, contentment, relational concern, and personal concern. Each domains consists of six items, the format of these items was a conventional questionnaire with items presented as brief statements to which the female rates her level of agreement/disagreement on a 5- point Likert scale where 1 indicates Strongly Disagree, 2 indicates Disagree, 3 indicates Neutral, 4 indicates Agree and 5 indicates Strongly Agree. The total score ranged from 30-150.The Scoring System contains five domains each domain score ranges from 6-30 with higher score means more sexual satisfaction.

The total score was calculated using the following equation: total score= (Contentment+Communication+Compatibility+(Relational Concern+Personal Concern/2))[8].

A jury was done by eight experts in sexual and reproductive health and the Arabic version showed good validity and reliability indices with I-CVI ranges from 0.652 to 1.0 for relevance and 0.875 to 1.0 for clarity. The E-CVI ranges from 0.7 to 1.0 for relevance and 0.8 to 1.0 for clarity. The pilot study revealed that the Cronbach's alpha of internal consistency was 0.79.

Statistical analysis:
Data were analyzed by SPSS Version 23. The normality of data was tested using one sample Kolmogorov-Smirnov test. Qualitative data were represented as numbers and per cents and Chi-squared test was used for comparison between the two groups. Continuous variables were represented as means (standard deviations) for parametric data. Independent *t*-test were utilized to compare means among 2 groups. Multiple linear regression was performed to detect the independent predictors of outcome variables. A result was considered significant if *P*-value≤0.05

RESULTS

The Sociodemographic data showed that IUD users and nonusers matched in age, residence and education however, nonusers more likely to meet routine expenses than IUD users ($\chi2$=44.1, *P*<0.001) moreover there are significant relationships between IUD use and the numbers of gravidity, the numbers of parity and the history of Cesarean section (≤0.05). In addition, the presence of current medical condition as hypertension, diabetes mellitus and Varicose veins in the IUD users and non-

users the statistical analysis showed no significance among studied groups (*p*>0.05) (Table 1).

Table (2) and Figure (1) show that overall Sexual satisfaction scale and its five domains are significantly lower in IUD-users vs non-users. Table (3) shows the correlation coefficients between SSS-W and different parameters. The IUD-use is among the independent predictors of SSS-W total score and its five domains as revealed by multivariate linear regression analysis (Table 4).
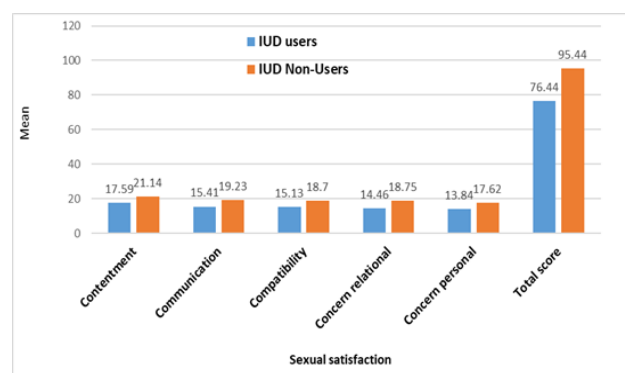

Fig. 1: Sexual satisfaction domains among studied females.

Table 1: Socio-demographics and Obstetrical history of studied females:

	IUD Users(180) *N*(%)	IUD Non- Users(180) N(%)	Test of significance
Age/years Mean±SD	30.47±6.73	30.88±7.13	*t*=0.562 *p*=0.574
Residence Urban Rural	18(10) 162(90)	28(156) 152(84.4)	χ²=2.49 *p*=0.114
Education Below secondary Secondary Above secondary	14(7.8) 124(68.9) 42(23.3)	23(12.8) 117(65) 40(22.2)	χ²=2.44 *p*=0.295
Income Meet routine expenses Meet routine expenses and emergencies Able of saving / investing money	128(71.1) 35(19.4) 17(9.4)	173(96.1) 1(0.6) 6(3.3)	χ²=44.1 *p*<0.001
Gravidity <3 ≥3	100(55.6) 80(44.4)	141(78.3) 39(21.7)	χ²=21.1 *p*=0.001
parity (N=358) <3 ≥3	103(57.2) 77(42.8)	146(81.1) 34(18.9)	χ²=24.08 *p*<0.001
Cesarean section No yes	41(22.8) 139(77.2)	102(56.7) 78(43.3)	χ²=43.17 *p*<0.001
Hypertension	16(8.9)	23(12.8)	χ²=1.41 *p*=0.235
DM	16(8.9)	17 (9.4)	χ²=0.03 *p*=0.855
Varicose veins	9(5.0)	7(3.9)	χ²=0.262 *p*=0.609

Table 2: Sexual satisfaction domains among studied females:

	IUD Users *N*=180	IUD Non-Users *N*=180	Test of significance	
Contentment	17.59±3.73	21.14±1.95	*t*=11.29	*p*<0.001
Communication	15.41±3.31	19.23±2.51	*t*=12.36	*p*<0.001
Compatibility	15.13±3.66	18.70±2.73	*t*=10.49	*p*<0.001
Relational Concern	14.46±4.29	18.75±3.22	*t*=10.73	*p*<0.001
Personal Concern	13.84±3.15	17.62±3.11	*t*=11.43	*p*<0.001
Total score	76.44±11.04	95.44±8.62	*t*=18.19	*p*<0.001

t: Student t test; χ²: Chi-Square test.

Table 3: correlation between sexual satisfaction domains and demographic and obstetric history of the studied cases:

		Contentment	Communication	Compatibility	Relational Concern	Personal Concern	Total Score
Age/years	r	-0.002	0.002	0.005	-0.007	0.047	0.014
	p	0.972	0.967	0.92	0.89	0.373	0.789
Residence	r	-0.097	-.121*	-.139**	-.123*	-.166**	-.173**
	p	0.067	0.022	0.008	0.02	0.002	0.001
Education	r	0.035	-0.054	-0.026	0.025	0.05	0.002
	p	0.507	0.308	0.624	0.642	0.34	0.968
IUD Using	r	.507**	.544**	.485**	.534**	.536**	.734**
	p	<.001	<.001	<.001	<.001	<.001	<.001
Gravidity	r	-.200**	-.245**	-.214**	-.277**	-.298**	-.350**
	p	<.001	<.001	<.001	<.001	<.001	<.001
Income	r	-.173**	-0.084	-.129*	-.173**	-0.078	-.182**
	p	0.001	0.11	0.014	0.001	0.139	0.001
Parity	r	-.246**	-.261**	-.263**	-.286**	-.324**	-.386**
	p	<.001	<.001	<.001	<.001	<.001	<.001

r: Spearman correlation coefficient and nominal variables by point biserial correlation.

DISCUSSION

Sexual acceptability is an important issue that can affect and prolong happiness with IUD use. Bleeding, cramp, pain are common side effects of IUDs that can lead the woman to discontinue it within the first year of use[9].

Also, the male can affect the acceptability of IUDs when experiencing bad sex because of the perception of the IUD string during coitus[10].

The overall satisfaction score is significantly lower in IUD-users vs than non-Users In the same context of our results, Hassanin and his colleagues studied the effect of the commonly utilized contraceptive methods among Egyptian females on their sexual functioning using female sexual function index (FSFI) score which was significantly lower in females using contraceptive methods (25.9±5.2) than in those not using contraceptive methods (27.6±5.4). Also, the mean scores in the questionnaire domains were significantly lower in contraceptive group than non-contraceptive group[11].

Similarly, a recent study conducted in Ghana assessed the effect of IUD on the various domains of the FSFI score. Low scores were obtained in the domains signifying poor functioning in these domains. They concluded that women using IUDs might have sexual dysfunction, particularly in desire and pain domains[2].

In Iran, a study evaluated sexual functioning in women using contraceptive methods including IUD, and using FSFI score. Sexual function in control group was better compared to contraceptive group ($26^5 \pm 4^5$ versus $18^1 \pm 4$-2)[12].

In the same line, another study conducted in Brazil among the Cu-IUD and the cases had a FSFI score of less than 26.55, indicating decreased sexual function[4].

In addition, Kahramanoglu and his colleague compared the sexual function in 92 females using TCu380A IUDs and 83 females who were not on contraceptives. The mean FSFI score among TCu380A IUD users was lower than control females; however, no significant difference was found between both groups[13].

On the other hand, there is a study that assessed 2612 questionnaires submitted by respondents aged less than thirty years. For all respondents, the median FSFI score was 28.2, which was significantly lower in non-users than users of contraceptive methods (24.4 vs. 28.7; *p*<0.001)[14].

In the same line, authors revealed that the quality of life and sexual functioning improved after the use of IUDs. Also, dysmenorrhea was decreased[9].

Such difference may be explained by the fear about an undesired pregnancy that can negatively affect the sexual arousal, especially if the partner did not share the same concern[15].

In addition, the absence of systemic effects of hormones makes IUDs neutral on sexual desire than other hormonal methods[9].

Table 4: Multiple linear regression for prediction of sexual satisfaction in five domains and total score:

	β	*t*	*P* value
Prediction of sexual satisfaction total score			
(Constant)	68.227	15.889	<.001
Residence	-.111	-2.931	.004
IUD Using	.652	15.031	<.001

R^2 =0.503, F=71.59, P<0.001
Total sexual satisfaction =68.22+0.652 * IUD Using

Containment			
(Constant)	14.60	17.255	<.001
IUD Using	3.33	9.262	<.001

R^2 =0.271, F=32.98, P<0.001
Containment domain of sexual satisfaction =14.60+0.242 * IUD Using

Communication			
	β	*t*	*P* value
(Constant)	13.77	12.04	<0.001
IUD Using	0.515	10.48	<0.001

R^2 =0.308, F=39.53, P<0.001
Communication domain of sexual satisfaction =13.77+0.515 * IUD Using

Compatibility		
β	*t*	*P* value

	β	*t*	*P* value
(Constant)	14.01	9.923	<.001
Residence	-.095	-2.054	.041
IUD Using	.446	8.411	<.001
Parity	-.326	-2.232	.026

R^2= 0.256, F= 24.40, P<0.001
Compatibility domain of sexual satisfaction= 14.01+0.446 * IUD Using-0.095*residence-0.326*parity

Relational Concern

(Constant)	13.25	7.957	.001
IUD Using	.457	8.619	.001

R^2 =0.257, F=24.44, P<0.001
relational concern domain of sexual satisfaction =13.25+0.457 * IUD Using

Personal Concern

(Constant)	13.61	11.238	.001
Residence	-.114	-2.541	.01
IUD Using	.459	9.228	.001

R^2= 0.290, F= 36.17, P<0.001
Personal concern domain of sexual satisfaction= 13.61+0.459 *: IUD Using-0.114*residence

IUD use is dummy coded (1= IUD user, 2= IUD non user); residence is coded 1= urban; 2= rural

Both frequency of sexual activity and sexual pleasure have been found to be positively related to satisfaction with a contraceptive method[16].

IUD users, who previously had undesired pregnancies using a short-acting reversible contraceptive, have been found to have higher satisfaction and a better quality of life[9]. Moreover, females with decreased sexual function have experienced substantial improvement in their sexual functions while using IUDs.

A cross sectional study found that sexual symptoms in females using LNG-IUS were similar to or higher than those using copper IUDs[17,18].

In addition, these data are supported by recent studies including healthy females using contraceptive methods. Half of females were using LNG- IUSs (study group) and the other half was using copper IUDs. No significant difference in the individual score and the total scores of sexual function questionnaires, was found between the groups[16,19].

Initially, IUDs were thought to be not appropriate for adolescents until studies proved their safety and their positive role in sexuality. Thus, newer smaller devices have encouraged clinicians to suggest, and adolescents to utilize, IUDs[9].

Some authors believe that, IUDs do not have negative impact on sexual life, because of the absence of systemic hormonal effects and the fact that they maintain natural sexual pleasure during coitus[4].

Sexual functioning comprises family, societal and religious beliefs and goes sour by aging, health state, and personal experience. Furthermore, sexual activity embodies inter-personal relationships; each partner conveys a unique attitude, desire, and response into the coupling. An interruption in any of these areas may lead to reduced sexual function[20].

The findings of our investigation and other studies demonstrated that certain demographic, social and family economic status could also affect level of sexual satisfaction. Thus, the economic supply and sufficiency especially in urban areas with lower number of parities have better results in our scale.

In this study, the relation between sexual satisfaction domains and demographic and obstetric history among IUD users were tested. The Contentment, Compatibility and Relational Concern domains of SSS-W was not affected by different demographic and obstetric history data (*p*-value >0.05) except for some data shown below.

The income status significantly affected the Communication score as it was less in the IUD users that had income which meets routine expenses (p-value ≤ 0.05).

In addition, the residence significantly affected the Personal Concern domain and the Total score as it was higher in cases that lives in urban areas (p-value ≤ 0.05).

The previous two results could be explained that women who live in urban areas have better money income and they worry less about life expenses that help them to achieve better in different sexual domains of our questionnaire.

Our study demonstrated that correlation analysis between the Sexual satisfaction questionnaire domains and the demographic and obstetric history of the studied cases using Spearman correlation coefficient revealed the following:

The Residence mildly affects the Communication, Relational Concern, Personal Concern and total score as the cases that lives in urban areas have a higher score in these domains (r= -0.121, -0.123, -0.166 and -0.173 respectively and p-value ≤0.05).

Our study showed that the Gravidity and Parity have a negatively affect with the five domains of the Sexual satisfaction questionnaire and total score (r= -0.200, -0.245, -0.214, -0.277, -0.298 and -0.350 respectively and p-value ≤0.05 for Gravidity and (r= -0.246, -0.261, -0.263, -0.286, -0.324 and -.0386 respectively and p-value ≤0.05 for Parity).

These results could be explained that women with higher gravidities and parities worry more about their children and faces their problems that makes them preoccupied and achieve less in our questionnaire.

In addition, the Income has a mild negative effect on Contentment, Compatibility, Relational Concern and the total score of the questionnaire (r= -0.173, -0.129, -0.173 and - 0.182 respectively and p-value ≤0.05).

The rest of the factors has a very low relation with the 5 domains of the SSS-W and the total score with no significance (p-value >0.05).

As a fact in our research, it was clear that in Mansoura as a big, overcrowded city in Egypt one of the Islamic countries in the Middle East, it was a little challenging task to assess sexual satisfaction domains that depend on cultural and religious issues beside that sexual relationship are only allowed to women within the framework of marriage and monogamy.

Considering the fact that assessment and filling items of the scale is little embarrassing and shameful for some females; for example, sexual satisfaction in those women

is related to "values" these values comprise the sexual or emotional feeling of affection in a married couple.

So, in our study we used the SSS-W scale which develop a comprehensive, multifaceted, valid and reliable self-report measure of females' sexual satisfaction and disease, it also exhibited sound psychometric properties that helped to assess sexual satisfaction in both groups.

On the other hand, definitive results and conclusions require replication with larger samples and for longer duration including wider range of contraceptive methods and also on different types of intra uterine devices including Mirena IUD.

CONCLUSION

Depending on our results and analysis of all domains, Sexual satisfaction domains were better in IUD non users.

In addition, we aim to put sexual satisfaction concerns as an additional and important item in women's choice of suitable contraceptive method beside routine items like efficacy and safety of method.

Moreover, the results of our study and other studies demonstrated that certain demographic, social and family economic status could also affect level of sexual satisfaction. Thus, the economic supply and sufficiency especially in urban areas with lower number of parities have better results in our scale.

CONFLICT OF INTERESTS

There are no conflict of interests.

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