

Female Sexual Function in Women Using Hormonal and Non-hormonal Contraception

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Abstract:

Objective: To examine the difference of sexual function of women using minimal 6 months hormonal and non-hormonal contraception with Female Female Sexual Function Index (FSFI).

Method: This descriptive-comparative study was conducted on 160 women who using hormonal and non-hormonal contraception for minimal 6 months in public health centers in Medan in November 2017 to January 2018. Subjects were selected by consecutive sampling and data obtained using the FSFI questionnaires. Data were analyzed using descriptive statistics, Chi-square test and Mann-Whitney test. A p-value less than 0.05 is applied to each statistical test as significant.

Result: The majority of women using hormonal and non-hormonal contraceptives in this study were multiparity aged 31-40 years and with normal body mass index. Most users of hormonal and non-hormonal contraceptives did not experience sexual dysfunction of 58.8% in hormonal contraceptives and 55% in non-hormonal contraceptives. There was no significant difference in all domain of desire, stimulation, lubrication, orgasm, satisfaction and pain in the two groups of contraception ($p > 0.05$). There was no significant difference between the female sexual function of women using hormonal and non-hormonal contraception with $p = 0.632$.

Conclusion: There was no significant difference in sexual function of women using hormonal and non-hormonal contraception based on FSFI score.

Keywords: Female sexual function, FSFI, hormonal, non-hormonal.

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I. Introduction

Sexuality is a central aspect of a human being throughout his life including sex, gender identity and role, sexual orientation, eroticism, enjoyment, intimacy and reproduction. Sexuality is a complex process. Aspects of sexual function include a woman's desire or desire to engage in sexual activity, a person's ability to start and maintain stimulation, experience lubrication, orgasm, enjoy a real sensation of sexual activity and minimize sexual pain and discomfort.[1] Sexual dysfunction as an important part of conflict between partners can cause doubt and attention to the resilience of a relationship. Sexual dysfunction can reduce interpersonal relationships, one's abilities and creativity can even cause a decrease in quality of life. Apparently sexual problems reached 88.8% of the causes of divorce.[2,3]

Based on the study estimated that about 40% of women experience sexual dysfunction.² In Germany as much as 38%, Turkey as much as 48.3%, Chile 22%, Morocco 27%, Brazil 49%, Ghana 72.8%, Nigeria 63%, Iran 8.5% -19.2% and Indonesia 66.2%. From the percentage of these incidents, an average of 58.04% was obtained. This means that more than half of women in a country have the potential to experience sexual dysfunction. A study by the Journal of Sexual Medicine, said that the factors that cause sexual dysfunction in women associated with contraceptive use both hormonal and non-hormonal.[4,5]

The relationship between contraception and sexual function is still a matter of controversy. Contraceptive methods have positive and negative effects. In general, the use of contraceptive methods affects sexual function positively because contraception eliminates the fear of pregnancy.[6] The appearance of sexual disorders is a very important side effect that can occur during hormonal contraceptive use. In some cases, the disorder will cause the termination of the contraceptive method.[7] Although the sexual side effects that cause cessation of contraception are still controversial, studies show that there is no consistent pattern of sexual effects on hormonal contraceptive methods.[3] In the study, 87% of women stopped hormonal contraception due to emotional complications, acute premenstrual syndrome, decreased libido and pleasure sexual.[7] There are still relatively few studies that discuss the effects of contraception on sexual function.

Female Sexual Function Index (FSFI) is used to measure sexual function including sexual desire in the past four weeks. Higher scores on each domain indicate a better level of sexual function. FSFI consists of 19

questions consisting of 6 domains (desire, arousal, lubrication, orgasm, satisfaction, and pain). The value of ≤ 26.55 (cut-off) on FSFI illustrates the existence of sexual problems.[3]

Women's attention to side effects of contraception is greater than shaping the desire of women to try or continue to use contraceptive methods. A woman's perception of the effect of contraception on sexual relations will influence the decision to use contraception.[8] In our society, contraceptive and sexuality problems are still taboo or cannot be used as a clear and comfortable discussion. Based on the description above, the researcher is interested in conducting further research on sexual dysfunction according to FSFI scores for women using hormonal and non-hormonal contraception

II. Method

This study used a comparative descriptive study using a cross sectional design. The study was conducted at Medan-Johor and Medan-Polonia Health Center- Medan from November 2017 to January 2018. The population of this study were women who used hormonal contraception and non-hormonal contraception who received services at Medan-Johor and Medan-Polonia Health Center. The subjects size was calculated using formula the unpaired comparative analysis research test.

After obtaining approval from the Ethics Committee of the Medical Faculty of the University of North Sumatra, the data were collected at Medan-Johor and Medan-Polonia Health Center. Women who are eligible according to inclusion criteria were given informed consent. The subjects then filled out the FSFI questionnaire and data were statistically tabulated and analyzed.

Data were reevaluated with software. Characteristics of the data were analysed descriptively. Scoring is the function of each subject. Kolmogorov-Smirnov test was used to test data normality. The Mann-Whitney test is a type of sexual dysfunction between hormonal and non-hormonal groups. To analyze differences in sexual dysfunction between hormonal and non-hormonal, we used chi square test. Statistical analysis uses a 95% confidence interval (CI). The relationship is significant if the value of $p < 0.05$.

III. Result

Table 1. Characteristics of subjects

Characteristics		Subject		Total (%)
		Hormonal (%)	Non-hormonal (%)	
Age (Year)	20-30	24 (30,0)	21 (26,3)	45 (28,1)
	31-40	41 (51,3)	42 (52,5)	83 (51,9)
	>40	15 (18,8)	17 (21,3)	31 (20,0)
Parity	1	21(26,3)	19 (23,8)	40 (25,0)
	2-4	52 (65,0)	55 (68,8)	107 (66,9)
	≥ 5	7 (8,8)	6 (7,5)	13 (8,1)
Body Mass Index	<i>Underweight</i>	0 (0,0)	2 (2,5)	2 (1,3)
	<i>Normoweight</i>	52 (65,0)	52 (65,0)	104 (65,0)
	<i>Overweight</i>	25 (31,3)	23 (28,7)	48 (30,0)
	<i>Obese</i>	3 (3,8)	3 (3,8)	6 (3,7)
Duration of use of contraception	6-12 bulan	46 (57,5)	35 (43,8)	81 (50,6)
	> 12bulan	34 (42,5)	45 (56,3)	79 (49,4)
Education	SD	5 (6,3)	6 (7,5)	11 (6,9)
	SMP	10 (12,5)	9 (11,3)	19 (11,9)
	SMA	24 (30,0)	23 (28,7)	47 (29,4)
	D3	30 (37,5)	23 (28,7)	53 (33,1)
	Sarjana	11 (13,8)	19 (23,8)	30 (18,8)

In table 1. it can be seen that the study subjects who used hormonal and non-hormonal contraception were more at the age of 31-40 years which is 51.3% and 52.5% respectively. Based on the Body Mass Index, subjects who used hormonal and non-hormonal contraception were mostly normoweight, which was 65% and 65% respectively. Most of the subjects who used hormonal and non-hormonal contraceptives were mostly multiparous which was 52% and 68.8% respectively.

Based on the duration of contraceptive use, it can be seen that the subjects who used hormonal contraception were more than 6-12 months of contraception using 57.5% and for more than 12 months were 56.3% of non-hormonal contraception. Based on the level of education shows that subjects who use hormonal contraception with D3 education level as much as 37.5% and on non-hormonal contraception with high school and D3 education levels, each of which was 28.7%.

Table 2. Differences in Sexual Functions Based on FSFI Domain Scores on Hormonal and Non-hormonal

Domain	Contraception				p*
	Hormonal (Mean ± SD)		Non-hormonal (Mean ±SD)		
	n=80		n=80		
Desire	3,93	0,79	4,13	0,76	0,156
Arousal	4,12	0,83	4,16	0,81	0,662
Lubrication	4,10	0,91	4,22	0,93	0,442
Orgasm	4,07	0,82	4,31	0,90	0,114
Satisfaction	4,40	0,93	4,83	0,89	0,308
Pain	4,62	0,75	4,68	0,77	0,080

* Mann Whitney test

The table above shows the difference in domain values in the FSFI questionnaire between hormonal and non-hormonal contraceptive acceptors. The difference in domain values was tested by statistics with Mann Whitney test because the data was not normally distributed.

The hormonal contraceptive acceptors obtained the mean of desire (3.93 ± 0.79), stimulation (4.12 ± 0.83), lubrication (4.10 ± 0.91), orgasm (4.07 ± 0.82), satisfaction (4.40 ± 0.93) and pain (4.62 ± 0.75) while the non-hormonal contraceptive acceptors obtained the mean value of desire (4.13 ± 0.76), stimulation (4.16 ± 0.81), lubrication (4.22 ± 0.93), orgasm (4.31 ± 0.90), satisfaction (4.83 ± 0.89) and pain (4.68 ± 0.77). The data shows that there is no statistically significant difference in all FSFI domain values.

Table 3. Comparison of Sexual Function in DMPA and Cyclofem

Sexual Function	Contraception						p*
	Hormonal		Non-hormonal		Total		
	n	%	n	%	n	%	
No Sexual Dysfunction	47	58,8	44	55,0	91	56,9	0,632
Sexual Dysfunction	33	41,2	36	45,0	69	43,1	
Total	80	100	80	100	160	100	

* Chi Square test

The table above showed that the two groups studied more hormonal and non-hormonal contraceptive acceptors had FSFI scores with no sexual dysfunction categories, 58.8% and 55% respectively.

Statistically, the Chi square test showed that there were no significant differences in sexual dysfunction based on the FSFI category between non-hormonal hormonal contraceptive acceptor research groups (p> 0.05).

IV. Discussion

This study showed the use of contraception was the most widely used by multiparous women aged 31-40 years. The number of children in accordance with the desired effect on the use of contraception. In women with a number of children one often still delay using contraception. With increasing numbers of children, women will need to consider using contraception to prevent pregnancy. Higher education also provides good awareness of contraceptive use.

In this study it was found that the majority of contraceptive acceptor women did not experience sexual dysfunction (table 3) which is 58.8% in hormonal contraception and 55% in non-hormonal contraception. This shows that sexual function is not only affected by hormonal alone. A person's perception of sexual difficulties is influenced by his opinion about normal or abnormal sexual function, which is related to self-perception which is ultimately related to culture. Other factors that influence sexual response are the duration and quality of a relationship and personal-psychological factors. Sexual response occurs through complex interactions of psychological, social, environmental, and biological factors (hormonal, vascular, muscular and nerve) .[9]

There were no statistically significant differences in the FSFI domain, namely desire, stimulation, lubrication, orgasm, satisfaction and pain in women hormonal and non-hormonal contraception as shown in table 2. Women start sexual relations for various reasons including desire. Where desire is needed to increase intimacy with a partner so that arousal arises which causes sexual intercourse. Neuroendocrine function (neurotransmitters, peptide, dopamine, oxytocin, serotonin and various hormones) also influence desire and motivation. Nonetheless, biological factors cannot be separated from the influence of environmental factors. Sexual hormones such as dopamine and serotonin affect neurotransmitters and cause changes in sexual desire in an unknown way.[10] Decreasing estrogen levels causes a decrease in blood flow to the intracavernous tissue of the clitoris, vagina and urethra which can interfere with stimulation stage.[9]

Schaffir also showed that in hormonal contraceptive acceptors there was no difference in the value of desire, stimulation and total FSFI value.[11] Combined contraception decreases androgen levels, especially testosterone, by inhibiting androgen synthesis by the ovaries and adrenals and by increasing levels of sex hormone-binding globulin (SHBG) A review of the meta-analysis showed that total testosterone levels and free

testosterone decreased during the use of estrogen and progestin combined oral contraceptives. SHBG levels also decreased significantly. Adequate estrogen levels are needed to maintain vaginal lubrication and prevent pain.[10] Although estradiol levels in these patients are not assessed. Schaffir et al confirmed that estradiol levels did not have an effect on the value of dyspareunia and lubrication.[11] Whereas in the group of non-hormonal contraceptive women who experience sexual dysfunction is 45%. IUD acceptor women do not feel any cramping or pain that can be caused by IUD threads during sexual intercourse. This can also be caused by adaptation in line with the longer IUD use. Anxiety about pain arising from IUD threads or fear of the presence of foreign objects in the body also affects sexual function.

In this study there were no significant differences in pain between hormonal and non-hormonal contraception. In line with previous studies that found no difference in vestibular pain threshold between oral contraceptive acceptors and non-acceptors.[12] In women using DMPA, estradiol levels clearly decreased and even caused estrogen suppression.[11] One third of women report pain during and /or after sexual intercourse and use of oral contraceptives for more than two years is a risk factor.[13] Oral contraceptives increase the sensitivity of the vestibular mucosa.[14] In line with Li et al found no significant difference in quality of life or sexual function in women who use oral contraceptives, progesterone injections, and IUDs.[6]

In a review of long-term contraceptive methods research in 2014, it was found that IUDs had positive or neutral sexual effects rather than negative effects.[15] IUD is an effective contraceptive method which has a positive effect on sexual function and effectively protects against pregnancy but causes irritation to the partner.[16] Skrzpulec V stated that there were no significant differences in pain values in IUD acceptors.[17] Fleming et al. Stated that 46% of women who were not interested in using the IUD did not want to have foreign objects in their bodies. Therefore, 25% of women who use contraception assume that an IUD may be able to injure them.[18] Although many studies have supported the benefits of using IUDs. There are still many women who are worried about the effects of IUD on their sexual life and partner satisfaction.

From this study statistically showed that there were no significant differences in sexual function between the two research groups of hormonal and non-hormonal contraceptive acceptors ($p > 0.05$) as illustrated in table 4.3. This shows that women with hormonal and non-hormonal contraceptive acceptors have relatively similar effects on the presence or absence of sexual dysfunction. In the studies of Burrows et al and Wiebe et al., There were no reports that sexual dysfunction in women using hormonal contraception.[3,4,19] In line with Kingsley, there was no evidence to support the claim that injectable hormonal contraception changed women's sexual behavior.[20] Hajian and Ozgoli revealed no significant relationship between sexual dysfunction and hormonal contraception.[10,21]

Women are more prone to sexual dysfunction than men. In fact, sexual relations are a woman's quality of life, and this illustrates psychosocial aspects. Sexual function is very complicated. Various factors that contribute to sexual function other than hormonal are health, emotional problems, stress, interpersonal and cultural relationships. Greater satisfaction with a relationship as a whole is associated with greater sexual satisfaction and fewer sexual function problems. Giving hormones from outside the body such as hormonal contraceptives both in the form of estrogen and progesterone cause an increase in the levels of both hormones in the blood, this can be detected by the anterior pituitary and will cause negative feedback by reducing the secretion of FSH and LH hormones and the presence of progesterone effect estrogen inhibition will double. In a certain period of time the body can compensate by increasing estrogen secretion to remain normal but for a long time causes loss of body compensation and decreased secretion of hormones, especially estrogen.[22]

In this study most women hormonal and non-hormonal contraceptive acceptors did not experience dysfunction sexually, ie 58.8% and 55% respectively. This illustrates that hormonal changes that occur are not enough to make changes in sexual function so that it has a relatively similar clinical effect with non-hormonal contraception. Although it is known that androgen insufficiency affects the decrease in libido but the statement of contraception lowers androgen levels is inconsistent and is not associated with a decrease in libido in women. Because there are many other factors that influence a woman's sexual desire in addition to hormonal problems. Women's sexual desire is influenced by her psychological status, beliefs, hopes, sexual experiences, priorities and environmental conditions. Sexual problems related to contraceptive methods may be related to different physiological responses. Women who are sensitive to changes in testosterone are more prone to experience sexual problems. In DMPA acceptors, positive mood is lower while negative mood is more frequent when compared with combination contraceptive acceptors. .[23]

In contrast to several studies which say that a decrease in sexual desire is caused by hormonal contraceptives, especially those containing progesterone, which have side effects such as reducing libido and vaginal dryness due to suppression of ovarian function and endogenous estrogen production.[24] Decreasing plasma androgen levels in contraception with dosage formulas higher, but not affect sexual desire.[25] In a large community study of 1,021 women, total endogenous testosterone and free testosterone were not associated with desire and sexual stimulation.[26] There is no androgen cut-off point that can be used to assess women with low sexual function.[11] Casey et al found that 74% of study participants experienced a significant decrease in free

testosterone without sexual desire or sexual response.[2] In line with Otto et al's study, there was no difference between sexual desire between various hormonal contraceptive methods, including oral contraceptives and DMPA injections. Although there are changes in hormonal levels but do not differ in sexual function.[27] Previous studies have shown that decreased sexual function is closely associated with decreased estrogen levels.

In this study it can be concluded that the incidence of sexual dysfunction in hormonal and non-hormonal contraceptive acceptors is not related to the contraceptive method used. This is also consistent with several other studies which also show that there is no significant difference between the average total FSFI values among various contraceptive methods.[16,28,29] A large difference is found in the prevalence of sexual dysfunction in several countries. This illustrates medical and psychological factors, especially socio-economic, cultural and racial differences, the relationship between partners, education level and characteristics of the study sample. About 40% of women do not seek treatment for their sexual problems, while 54% seek treatment for their sexual problems. The low report on sexual problems in women in Iran might describe cultural factors such as shyness or closeness.[16]

Contraception and sexuality problems are rarely discussed openly because they are considered a taboo problem, so it is considered that this problem does not need to be discussed by contraceptive acceptors with health care providers. Assistance in the proper use of the chosen contraceptive method and the right direction if negative effects arise on their sexual life will contribute to improving the quality of sexual life.[16] Even though in the same study using FSFI assessment, there were various different factors. The factors that can be observed are culture, social, race, and lifestyle that affect sexual function. Among Europeans, they always express their feelings and share sexual experiences, thus leading them to have good sexual function. In contrast to the Asian population, it tends to be more closed than European or American women.[30]

Pleasant experiences and feelings of pleasure towards your partner can affect sexual satisfaction in women and prevent sexual dysfunction in cases that experience a decrease in sexual hormones. Although there are symptoms of sexual disorders, women can still enjoy a pleasant sexual atmosphere by increasing their knowledge of their concerns. If a woman feels her partner cares about contraception, it will counteract the negative effects on the woman to feel aroused. But in some people, it's easier to engage in sexual activity than talking about it. Even so, the ability of a partner to communicate, sexually or otherwise, can affect attitudes to contraception. Couples with strong sexual verbal abilities will prefer condom contraception. So the role of the clinician must also teach couples to be more open about prevention of pregnancy, considering that some people still have to develop sexual communication skills.

Some limitations in this study include the cross-sectional study that did not compare sexual function at the time before contraceptive use. Interpersonal relationships are also not investigated, where couples also have an important role in sexual life.

V. Conclusion

There was no difference in sexual function based on FSFI domain in hormonal and non-hormonal contraception on desire, arousal, lubrication, orgasm, satisfaction and pain domain. In female sexual function, there was no difference between hormonal and non-hormonal contraception.

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