The Relationship between Sexual Function and Body Mass Index among Infertile Women

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ABSTRACT

Aim of the study: The study aimed to assess the relationship between sexual function and body mass index among infertile women. **Methods**: Descriptive correlational study, the study was conducted at a gynecology clinic at Benha educational hospital and Benha university hospital, a purposive sample (No. 200) all infertile women attended to the gynecological clinic of Benha educational hospital and Benha university hospital during 6 months. Two tools were used to collect the data of the study. **1st** was an Arabic interview questionnaire to assess infertile women's characteristics and sexual function. 2nd was anthropometric measurements for the calculation of BMI**. The results**: the prevalence of sexual dysfunction was quite high in infertile women. In this study, being overweight and obese based on body mass index had a negative effect on the infertile woman's sexual function and the difference was statistically significant (p<0.001). **Conclusion:** The study concluded that, the prevalence of sexual dysfunction was quite high in infertile women, which might be due to the lack of knowledge about marital issues and lack of training in the society. If body mass index is too high, it can have a great effect on fertility. In this study, being overweight and obese based on body mass index had a negative effect on the infertile woman's sexual function, **the study recommended** that the allocation of a clinic for infertile women and educational programs should be implemented for the infertile women to increase their awareness regarding marital as well as sexual skills to be held by supportive groups in infertility clinics. Further studies are required to compare sexual function in fertile and infertile women, investigate the relationship between BMI and sexual function in fertile and infertile women, and determine the effects of BMI on infertility.

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Introduction

Sexual health is considered of fundamental importance to the longevity of affective relationships and it is seen as one of the factors that help the occurrence, recovery and maintenance of well-being and overall good health of the individual. Initially human sexual response was defined as a four-phasic phenomenon, consisting of: desire, arousal, orgasm and resolution **(Kaplan, 2011)**. Reformulated this model to a triphasic phenomenon, consisting of: desire, arousal and orgasm. Therefore, a sexual dysfunction involves a change in one or more phases of the sexual response cycle or the pain associated with the intercourse, which manifests itself in a persistent or recurrent way **(Abdo & Fleury, 2012)**.

Female sexual dysfunction (FSD) can afflict women of any age, and its expression changes with the endocrinology of advancing years. The impact is often subtle. FSD may express as seemingly unrelated emotional disturbances that degrade quality of life in family relationships, in the workplace, or both. For some, it is a minor short term problem. For others, it is debilitating. Despite the importance of sexuality in women's lives, physicians ask about it reluctantly. Many seem not to know that sexuality matters. Others may not want to deal with the answers and questions that follow **(Simon et al., 2010)**.

The body mass index is the ratio between weight in kilograms and the square of the body height in meters (kg/m2) **(Lagergren, Mattsson, & Nyrén, 2014)**. Overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health and have the potential to promote sexual dysfunction through several mechanisms, by increasing the weight on the pelvic floor muscles, changing its function, change in body image related to the self-perception of sexual attractiveness and depression **(Huang, et al., 2011)**.

It is possible that overweight and obese women have a favorable hormonal modulation for a good sexual function, however, a woman may present sexual dysfunction due to other factors, such as altering perception of body image distorted from the social impositions, the cultural characteristics of countries where sexuality is seen as a taboo, the quality and length of relationship and others**(Erenel & Kiline, 2013)**.

Reproduction is one of the most important biological functions for all life forms. For most couples having children is a primal need and the inability to reproduce, infertility can be devastating to individuals and couples **(UNFPA, 2013)**. Infertility is defined as the inability to conceive after 12 months of unprotected sexual intercourse. Infertility may be primary infertility and secondary infertility. Primary infertility is infertility in a couple who have never had a child. Secondary infertility is failure to conceive following a previous pregnancy **(Zegers et al., 2011)**.

Infertility may not be a threat to physical health, but carries with it extremely adverse social and psychological implications for all concerned but particularly in developing countries **(Kocelak et al., 2012)**. The adverse effects of obesity on fertility and pregnancy outcomes are overwhelming and indisputable. Body mass index (BMI) in kg/m2 is calculated from maternal height and weight data. Obesity is defined as a BMI over 30 **(Paul et al., 2011)**.

The risks of obesity and infertility will extend from conception to gestation and then to the birth process. Fertility can be negatively affected by obesity. In women, early onset of obesity favors the development of menses irregularities, chronic oligo-anovulation and infertility in the adult age. These adverse effects of obesity are specifically evident in polycystic ovary syndrome **(Pasquali, Patton & Gambineri, 2010)**. According to the study, which was conducted for a period of three years, out of 300 females nearly 90% of them developed polycystic ovarian disease, infertility with morbid obesity **(Gaur, 2013)**.

Obesity in women can also increase risk of miscarriage and impair the outcomes of assisted reproductive technologies and pregnancy. Studies have shown that women who are overweight or obese are less likely to respond to fertility drugs. This occurs because the excessive weight obstructs the proper absorption of the fertility drugs used during treatments. Some IVF clinics refuse to treat obese patients unless they reduce their BMI **(Mittal et al., 2012)**. Thus, despite the high incidence, it is very complex to determine the cause of sexual dysfunction,

because sexuality is probably a multidimensional phenomenon associated with biological, psychological, socio-cultural and interpersonal determinants **(Piassaroli et al., 2010).**

Significance of the Study

Obesity-related illnesses result in approximately 300,000 deaths in the U.S. each year (O'Brien & Dixon, 2012). This compares to 42,643 deaths due to motor vehicle accidents **(NHTSA, 2012)** and 13,712deaths due to HIV/AIDS **(CDC, 2012).**

It is estimated that 60 to 80 million couples worldwide currently suffer from infertility. Infertility varies across regions of the world and is estimated to affect eight to twelve percent of couples worldwide. One in every four couples in developing countries had been found to be affected by infertility (WHO, 2012). Prevalence of infertility in Egypt, 12 percent of Egyptian couples was affected of these women, 4.3 percent suffer from primary infertility and 7.7 percent suffer from secondary infertility. The number of women aged 15 to 49 years exceeds 25 million, which means that at least 3 million women are infertile in Egypt (Sallam, 2013). Therefore, this study was carried out to assess, the relationship between sexual function and body mass index among infertile women.

Aim of the study:

The study aimed to: Assessing the relationship between sexual function and body mass index among infertile women.

Research questions:

Is there relationship between sexual function and body mass index among infertile women?

Subjects And Methods

Research design

A descriptive correlation design was utilized to achieve the aim of the study.

Setting of the study:

The study was conducted at a gynecology clinic of benha educational hospital and benha university hospital.

Research subjects:

Purposive sample all infertile women attending to the gynecology clinic of benha educational hospital between april 2015 and august 2015. The patients were classified as infertile according to the accepted medical definition of infertility (i.e., failure to conceive after 12 months of unprotected sexual intercourse) by the researcher. The inclusion criteria of the study were being infertile women having no children or step children after one year of regular, unprotected intercourse. Besides, all the participants were sexually active, defined as having engaged in sexual intercourse with a partner in the past 4 weeks. The exclusion criteria of the study were having family disputes during the recent week, having physical problems of spinal cord injury, mutilation, paralysis, and limb deformity, having psychological problems, having medical diseases, such as cardiovascular and pulmonary disorders, hyperthyroidism, hypothyroidism, epilepsy, and diabetes, having experienced stressful events, such as death or acute disease of close relatives and major changes in life, during the past three months, being drug abusers, and using drugs for increasing the sexual desire.

FSFI questionnaire was developed by Rosen et al. This questionnaire consists of 19 questions, investigating the subjects in 6 domains of sexual desire, sexual arousal, lubrication, orgasm, sexual satisfaction, and pain during intercourse **(Wiegel, Meston &**

Rosen, 2013). In this questionnaire, the questions are scored based on 0.1-5 scoring system and the score of each domain is calculated through summing up the scores of that domain's questions and multiplying the obtained number by the multiplier factor of that domain. It should be mentioned that sexual desire is covered by questions 1 and 2, excitement by the sum of questions 2, 4, 5, and 6, lubrication by adding questions 7, 8, 9, and 10, orgasm by the sum of questions 11, 12, and 13, sexual satisfaction by adding questions 14, 15, and 16, and pain by summing up questions 17, 18, and 19. In addition, multiplier factors of 0.6, 0.4, and 0.3 are used for domains, including 2, 3, and 4 questions, respectively. In general, each domain has a minimum (0-1.2/1.8) and a maximum **(Tarlatzis et al., 2014).**

In addition, the sexual function total score is obtained from the sum of the scores of all the domains and is ranged from 2-36. The cut-off score used to demarcate sexual dysfunction on the total FSFI score was obtained from a validation study that compared the FSFI scores of the women with documented sexual dysfunction with those of dysfunction-free volunteers and determined a total score below 26.55 to denote sexual dysfunction **(Razavieh & Moein, 2014).** The cut-off scores to determine the presence of difficulties on the six domains of the FSFI were obtained from published sources **(Bayer et al., 2015).** Accordingly, the scores less than 4.28 in the desire domain, less than 5.08 in the arousal domain, less than 5.45 in the lubrication domain, less than 5.05 in the orgasm domain, less than 5.04 in the satisfaction domain, and less than 5.51 in the pain domain were used to classify the participants as having difficulties in that domain.

A- Preparatory phase:

A review of the past and current available literature in various aspects of the problem using books, articles, periodicals, and magazines was done to be acquainted with all aspects of the study problem and also in order to develop relevant tools for data collection.

B- Pilot study:

The purpose of the pilot study was to test the current validity of the tools and to estimate the time required for the procedure. A pilot study was conducted for one month April (2015) to evaluate the content validity and feasibility of implementing the designed tools. The obtained data were excluded from the results. The tools then revised, redesigned and rewritten to the obtained results of final forms. Little modification was depended on the pilot study.

C- Field work & data collection phase:

Before any attempt to collect data, an official approval was submitted to the dean of the faculty of nursing to collect data from the pre mentioned study settings, also written approval was submitted to the director of both Benha University hospital and Benha educational hospital. The actual data collection took four months from the first of May to the end of August (2015). The designed questioner was distributed through meeting with patients in the selected study settings, Firstly; the researcher interviewed the woman; the researcher started with introducing herself to participants and the aim of the study was explained to each woman to gain their confidence and trust. Secondly; each woman was assessed by female sexual function index. Thirdly; anthropometric measurement was taken. The time of the interview was 30 minutes and repeated till the sample was completed. The study setting was visited two days weekly one day for each hospital from 9 Am – 1 Pm for 4 months.

Statistical Design

After completion of data collection, the data were organized and tabulated, statistically analyzed using Data entry was done using Epi-Info 6.04 computer software package, while the study data were statistically analyzed using the SPSS software (Statistical Package for the Social Sciences, version 20, SPSS Inc, and Chicago, III, USA). Descriptive statistics, frequency, percent, mean, standard deviation, maximum, and minimum were used in this study. Student's T-test was used to compare the FSFI domains between primary and secondary infertility. In addition, one-way ANOVA and post-hoc tests were used to determine the relationship between FSFI and BMI scores. Besides, P-value<0.05 was considered as statistically significant

Ethical considerations

The researcher got the nurses consent to participate in the study: assured them about confidentiality, safety and privacy of the obtained data, meanwhile the health care workers have the right to be excluded from the study at any time.

Results:

Concerning the relationship between sexual function and body mass index among infertile women. **Table 1** demonstrates that the socio-demographic characteristics of the infertile women. It illustrated that infertile women' age ranged between 20 and 44 years, the mean age of infertile women was (28.78) with standard deviation (±5.69) years, the majority of infertile women were in the age group 25 to less than 30 years old (38.5%) while the minority of the infertile women were in age group more than 40 years (3.5%), Also the majority of infertile women are housewife (73.5%) with the Secondary school (36%). The majority of infertile women' family type is nuclear (73.5%).

Table 2 indicates that the obstetric characteristics of the infertile women. It illustrated that the majority infertile women age of menarche was (63.5%) from 13 to 15 years, the majority infertility duration of infertile women was (62%) from one year to 4 years while the minority infertility duration of the infertile women (3.5%) was from 15 years to 19 years, Also the majority of sexual activity frequency (55%) was from 2 to 4 times per week.The same table illustrated that the majority of the previous pregnancy outcome of infertile women with secondary infertility was birthed (63.7%) while the minority of the previous pregnancy outcome of infertile women with secondary infertility was an ectopic pregnancy (8.8%).

Figure 1 displays that approximately half of the sample of infertile women with primary infertility was (54%) and another with secondary infertility were (46%). **Figure 2** displays that approximately three quarter of the infertile women have sexual dysfunction (77%) and nearly one quarter have normal sexual function (23%). **Figure 3** illustrates that the infertile women's sexual function index domains were higher sexual dysfunction related to arousal (93%), lubrication (91.5%), pain (88%), desire (79.5%), orgasm (70%) and satisfaction (59%). **Figure 4** illustrates that approximately nearly half of the sample of infertile women's body mass index was (49%) obesity, the one third was (31%) overweight and one fifth was (20%) normal weight.

Table 3 illustrated that the infertile women's sexual function index domains the majority mean and stander deviation was the satisfaction domain (4.62 ± 0.99) while the minority was pain domain (3.58 ± 1.28). **Table 4** displayed that the infertile women with primary infertility were sexual dysfunction (78.9%) and the infertile women with secondary infertility were sexual dysfunction (74.7%). **Table 5** indicates that the mean and standard deviation of the FSFI score for primary and secondary infertile

women was 24.74±3.98 and 24.27±4.81, respectively. The difference was not statistically significant. **Table 6** illustrated that the infertile women' weight ranged between 45 to 110 kg, height ranged between 140 to 176 cm and the mean and standard deviation of the BMI (29.9±5.8).

As **table 7** illustrated that sexual dysfunction among the infertile women was (5%, 90.3%, and 98%) in body mass index groups (normal, overweight and obese), respectively. **Table 8** indicated that, there was highly statistically significant relation between sexual function and body mass index among infertile women. As **table 9** illustrated that there was a highly statistically significant relation between sexual function and Menarche's age and infertility duration among infertile women. There was a statistical significant relation between sexual function and infertile women's age.

Table (1): Frequency distribution of infertile women according to socio-demographic characteristics

socio-demographic characteristics	no (n=200)	%
age/year		
Less than 25 years	58	29.0
25 years to 30 years	77	38.5
31 years to 35 years	38	19.0
36 years to 40 years	20	10.0
More than 40 years	7	3.5
Range	20 - 44	
Mean ± SD	28.78 ± 5.69	
Education		
Illiterate	42	21.0
Primary or preparatory	51	25.5
Secondary	72	36.0
University	35	17.5
Employment		
Employed	53	26.5
Housewife	147	73.5
Family Type		
Nuclear	147	73.5
Extended	53	26.5
Residence		
Rural	89	44.5
Urban	111	55.5

Table (2): Frequency distribution of infertile women according to obstetric characteristics

Obstetric characteristics	no (n=200)	%
Menarche age/ year		
Less than 10 years	6	3
10 to 12 years	47	23.5
13 to 15 years	127	63.5
16 to 1 8 years	20	10
Infertility duration		
One year to 4 years	124	62
5 Years to 9 years	55	27.5
10 years to 14 years	14	7
Sexual activity frequency		
Once per month	2	1
2-4 per month	64	32
2-4 per week	110	55
More than 4 per week	24	12
15 years to 19 years	7	3.5
Outcome of previous pregnancy for infertile women with secondary infertility	(n=91)	
Abortion	25	27.5
Ectopic pregnancy	8	8.8
Birth	58	63.7
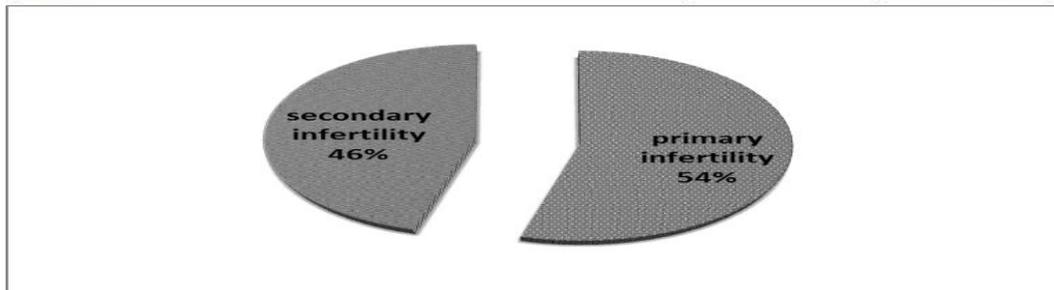
Figure (1): percentage distribution of infertile women according to types of infertility (n=200)
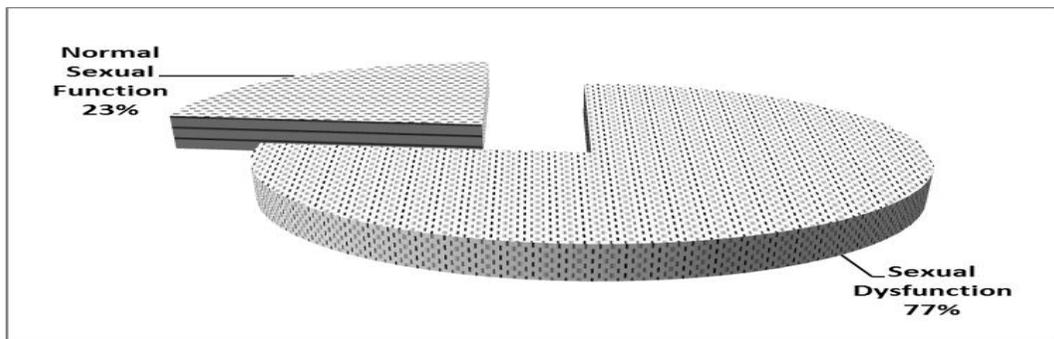
Figure (2): The prevalence of sexual dysfunction in infertile women (n=200)
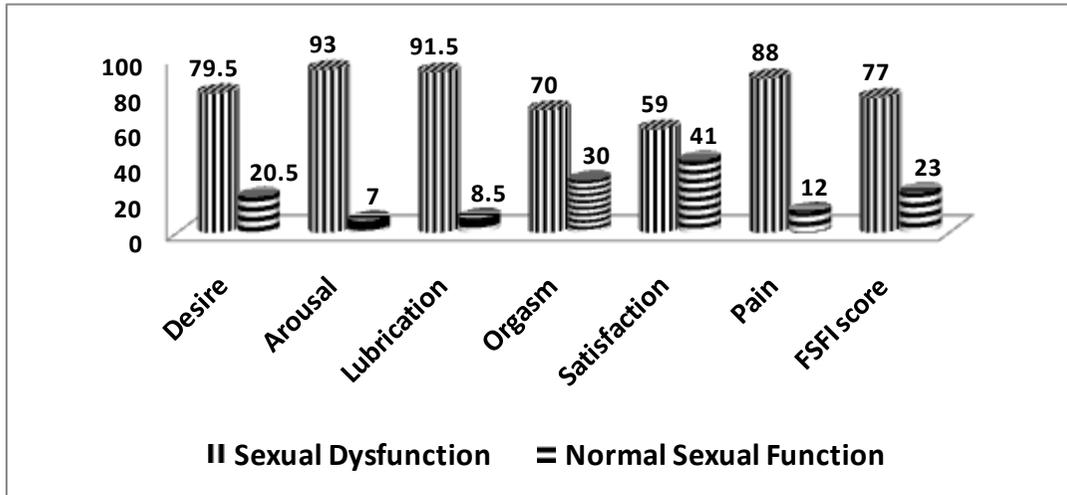
Figure (3) percentage distribution of infertile women regarding female sexual function index (FSFI) domains (n=200).
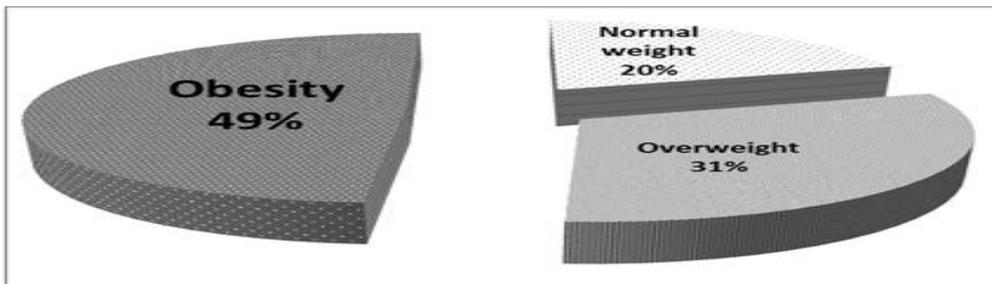

Figure (4): percentage distribution of infertile women regarding body mass index (n=200).

Table (3): mean and stander deviation of infertile women regarding FSFI questionnaire scores

Domain	Minimum	Maximum	Mean ±SD
Desire	1.2	6	3.78 ± 0.83
Arousal	1.5	6	3.78 ± 0.87
Lubrication	1.2	6	4.17 ± 1.08
Orgasm	1.2	6	4.32 ± 1.17
Satisfaction	1.2	6	4.62 ± 0.99
Pain	1.2	6	3.58 ± 1.28
FSFI score	7.5	36	24.53 ± 4.37

Table (4): frequency distribution of infertile women regarding sexual function and types of infertility

Sexual function	Types of infertility		Total
	Primary infertility	Secondary infertility	
Sexual dysfunction	(86) 78.9%	(68) 74.7%	(154) 77%
Normal	(23) 21.1%	(23) 25.3%	(46) 23%
Total	(109) 54.5%	(91) 45.5%	(200) 100%

Table (5): mean and stander deviation of FSFI questionnaire scores of primary and secondary infertile women

Sexual function domains	Primary infertility (n=109)	Secondary infertility (n=91)	t-test	* p-value
Desire	3.83 ± 0.84	3.71 ± 0.82	1.01	0.31
Arousal	3.86 ± 0.81	3.68 ± 0.92	1.44	0.15
Orgasm	4.18 ± 1.01	4.15 ± 1.17	0.14	0.89
Lubrication	4.39 ± 1.06	4.25 ± 1.29	0.83	0.41
Satisfaction	4.59 ± 0.93	4.65 ± 1.06	-0.42	0.67
Pain	3.59 ±1.18	3.56 ± 1.39	0.16	0.88
Total number of sexual function	24.74 ± 3.98	24.27 ±4.81	0.77	0.44

Table (6): mean and stander deviation of infertile women regarding weight, height and body mass index

	Min	Max	Mean ±SD
Weight, kg	45.00	110.00	77.0±15.2
Height/m	1.40	1.76	1.6±0.1
BMI, kg/m 2	18.73	45.79	29.9±5.8

Table (7): frequency distribution of infertile women regarding sexual function and body mass index

Sexual function	Body mass index			Total
	BMI 20-24.9 (Normal)	BMI 25-29.9 (Overweight)	BMI >29.9 (Obese)	
Sexual dysfunction	(2) 5%	(56) 90.3%	(96) 98%	(154) 77%
Normal	(38) 95%	(6) 9.7%	(2) 2%	(46) 23%
Total	(40) 20%	(62) 31%	(98) 49%	(200) 100%

Table (8): FSFI scores according to body mass index in infertile women

Domain	BMI 20-24.9 (Normal) (n=40)	BMI 25-29.9 (Overweight) (n=62)	BMI > 29.9 (Obese) (n=98)	p-value *	Total (n=200)
Desire	4.17 ± 0.74	3.55 ± 0.92	3.76 ± 0.75	0.001	3.78 ± 0.83
Arousal	4.57± 0.61	3.56 ± 0.85	3.60 ± 0.79	<0.001	3.78 ± 0.87
Lubrication	4.88 ± 0. 87	3.90 ± 1.13	4.04 ± 1.01	<0.001	4.17 ± 1.08
Orgasm	5.27 ± 0.48	4.16 ± 1.28	4.04 ± 1.10	<0.001	4.32 ± 1.17
Satisfaction	5.34 ± 0.73	4.28 ± 1.08	4.54 ± 0.88	<0.001	4.62 ± 0.99
Pain	4.70 ± 1.25	3.28 ± 1.06	3.31 ± 1.16	<0.001	3.58 ± 1.28
Total Score	28.67 ± 2.49	23.75 ± 5.27	23.32 ± 3.21	<0.001	24.53 ± 4.37

Table (9): FSFI scores according to characteristics of infertile women.

Characteristics	no (n=200)	%	FSFI	* p-value
Age/year				
Less than 25 years	58	29.0	25.01±4.18	*P= 0.03
25 years to 30 years	77	38.5	25.31±3.55	F= 6.21
31 years to 35 years	38	19.0	23.95±4.85	
36 years to 40 years	20	10.0	22.61±5.86	
More than 40 years	7	3.5	20.54±3.26	
Employment				
Employed	53	26.5	23.45±5.96	P= 0.06
Housewife	147	73.5	24.91±3.58	F= 12.21
Menarche age/ year				
Less than 10 years	6	3	27.63±3.84	*P<0.001
10 to 12 years	47	23.5	22.99±3.37	F= 12.44
13 to 15 years	127	63.5	24.63±4.76	
16 to 1 8 years	20	10	26.57±2.22	
Infertility duration				
One year to 4 years	124	62	24.78±4.77	*P<0.001
5 Years to 9 years	55	27.5	24.23±3.51	F= 24.57
10 years to 14 years	14	7	24.41±4.44	
15 years to 19 years	7	3.5	22.71±2.69	
Sexual activity frequency				
Once per month	2	1	26.50±0.42	P= 0.68
2-4 per month	64	32	23.43±5.29	F= 1.50
2-4 per week	110	55	24.85±3.88	
More than 4 per week	24	12	25.79±3.34	

Discussion

The results of the present study revealed that approximately three quarters of the infertile women have sexual dysfunction (77%) and nearly one quarter have normal sexual function (23%). These findings were supported by **Yekeh & Godarzi, (2013)** who conducted studies in Ghazvin and reported that the prevalence of sexual disorders as (89%) among the married women. Also, **Rosen et al., (2011)** was in the same line, who conducted studies on normal women and reported their mean of sexual function as 30.5%. Up to now, various studies have been performed on the females' sexual function. And also, **Abdo, (2010)** was in congruent, who conducted in the Brazilian literature,

studies have found a high incidence of sexual dysfunction among women. In a study conducted in 18 Brazilian cities, 3148 women aged between 18 and 70 years were surveyed; (51%) of them reported some sexual dysfunction. However, this finding was converse with Ferreira, Souza, & Amorin, (2010) a cross-sectional study of 100 women aged from 20 to 39 years, the results also showed that 36% of them reported some sort of sexual dysfunction. This could be explained by the focus of coitus becomes solely on conception rather than of pleasure.

The results of the present study revealed that the most common sexual problems in infertile women were arousal difficulties (93%), lubrication difficulties (91.5%), dyspareunia (88%), decreased desire (79.5%), orgasm difficulty (70%) and poor satisfaction (59%).This finding was in the same line with Jamali, Zarei & Jahromi (2014) who mentioned that domain scores suggestive of difficulties related to desire, arousal, lubrication, orgasm, poor satisfaction, and pain were prevalent in (95.2%), (92.2%), (73.1%), (94.6%), (76.1%), and (82.9%) subjects, respectively. Also, Tayebi & Yassini, (2011) was in congruent, who conducted in Yazd, sexual desire disorder (80.7%) and anorgasmia (83.7%) were shown as the most prevalent sexual disorders among the women. However, this finding was in contrary to Mendonça et al., (2012) who found that half of the women reported at least one sexual dysfunction; (26.7%) reported a lack of sexual desire and (23.1%) reported pain during intercourse. Also, Jain, Radhakrishnan & Agrawal, (2010) were incongruent, who found that the infertile women, 55%, 28%, and 14% of the subjects showed dyspareunia, reduction of sexual desire, and orgasm disorders, respectively. And also, Jindal et al.,(2012) was in converse, who was evaluated200 Indian infertile women and showed that decreased frequency of intercourse and anorgasmia were the most common problems. This could

be explained by infertile women with sexual dysfunction did not seek any help or advice for their sexual problems. When asked about the reason for not consulting a physician linked it to embarrassment.

The present study showed that the infertile women with primary infertility had sexual dysfunction (78.9%) and the infertile women with secondary infertility had sexual dysfunction (74.7%) and the difference was not statistically significant. This finding was in the same line with Jamali, Zarei & Jahromi (2014) who mentioned that the prevalence of sexual dysfunction was 94.9% and 100% in primary and secondary infertile women, respectively and the difference was not statistically significant. This could be explained by which might be due to the lack of knowledge about marital issues and lack of training in the society. While, this finding was in converse with Keskin et al., (2011) who conducted in Turkey was shown that a higher prevalence of sexual dysfunction in secondary infertile women compared to those with primary infertility. This could be explained by the infertile women with primary infertility and secondary infertility might not have been ready to disclose their sexual problems to other people because sexuality is still considered a taboo subject to discuss openly in Egyptian culture.

The present study showed approximately nearly half of the sample of infertile women's body mass index was (49%) obesity, the one third was (31%) overweight and one fifth was (20%) normal weight. This finding was in agreement with Jamali, Zarei & Jahromi (2014) who mentioned that BMI, 24.3% of the women had normal weight, 31.5% were overweight, and 44.2% were obese. This could be explained by approximately 80 % of infertile women were overweight and obese related to lack of a more specific medical diagnosis of BMI with measurable characteristics.

The results of this study showed that sexual dysfunction among the infertile

women was (5%, 90.3%, and 98%) in body mass index groups (normal, overweight and obese), respectively. This finding was in accordance with **Jamali, Zarei & Jahromi (2014)** who reported that the rate of sexual dysfunction among the infertile women as 23.30%, 31.47%, and 45.23% in groups (normal, overweight and obese), respectively. While this finding was disagreement with **Bajos et al., (2010)** who reported that the correlation index of sexual function among overweight and obese women had been found good levels of sexual function among these women.This could be explained by most overweight and obese women consider themselves to be less attractive, less sexually interesting and incapable of developing a satisfying romantic relationship, compared to people with normal weight. Therefore, they have a higher risk of developing sexual dysfunction, compared to women with normal weight.

The result of the present study indicated that, there was highly statistically significant relation between sexual function and body mass index among infertile women (p<0.001).This finding was in agreement with **Melin et al., (2013)** who mentioned that the relationship between obesity and sexual dysfunction in women, as well. And also, **Esposito et al., (2010)** was in agreement, whodemonstrated that a strong negative association between body mass index (BMI) and sexual functioning scores on the Female Sexual Functioning Index (FSFI) for women diagnosed with female sexual dysfunction; however, for women without diagnosed sexual dysfunction, there was no association between BMI and FSFI. However, this finding was in converse with **Kadioglu et al., (2010)** who mentioned that FSD was diagnosed in 50% and 41% of the patients in the obese and control groups, respectively (*P*= 0.34). There were no differences between total FSFI and FSFI domain scores among BMI categories.This could be explained by regarding the relationship that exists between the difficulty experienced

during sexual intercourse and the weight of the body.

The study revealed that there was highly statistically significant relation between sexual function and Menarche age and infertility duration among infertile women (p<0.001). This finding was in converse with **Jamali, Zarei & Jahromi (2014)** who mentioned that a significant relationship was found between sexual function and education level, and occupation. However, no significant relationship was observed between the females' sexual dysfunction and duration of infertility. This could be explained by the lack of a more specific medical diagnosis of FSD with measurable characteristics, affects the level of evidence from clinical trials, and only a few clinical trials are available.

The study revealed that the lowest mean and standard deviation of the FSFI score for infertile women's age more than 40 years old was (20.54±3.26). There was a statistical significant relation between sexual function and infertile women's age (p <0.05). This finding was in accordance with **Jamali, Zarei & Jahromi (2014)** who mentioned that a significant relationship was observed between sexual function and age. And also, **Ponholzer et al., (2010)** was in agreement, who investigated the risk factors and prevalence of sexual dysfunction in 703 Australian women and showed that the age increased, these problems increased, as well.

Conclusion

The prevalence of sexual dysfunction was quite high in infertile women. There was a highly statistically significant relation between sexual function and body mass index among infertile women. Moreover, there was a highly statistically significant relation between sexual function and Menarche's age and infertility duration among infertile women. Also, there was a

statistical significant relation between sexual function and infertile women's age.

Recommendations

The current study recommended that, the allocation of a clinic for infertile women and educational programs should be implemented for the infertile women to increase their awareness regarding marital as well as sexual skills to be held by supportive groups in infertility clinics. Further studies are required to compare sexual function in fertile and infertile women, investigate the relationship between BMI and sexual function in fertile and infertile women, and determine the effects of BMI on infertility.

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