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To investigate the relationship between stress, anxiety and depression with sexual function and its domains in women of reproductive age

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ABSTRACT

Sexual function is really complicated and different factors including psychological matters can affect the performance of women. The aim of this study was to investigate the relationship between Stress, anxiety and depression with sexual function and its domains. A cross-sectional study was conducted in 2014-2015 with a sample size of 514 women of reproductive age, who were referred to Health Care Centers in Shiraz. The random sampling method was based on the goals and research instruments included Female Sexual Function Index (FSFI) in women and scale of stress, anxiety and depression of Lewinda. T-Test, Fisher's exact test, Chi-square and Pearson correlation coefficient were used to analyze the data. The mean age of all the samples was 30.9 ±5.8 years. 72.2% of the women suffered from sexual dysfunction. The mean scores of stress, anxiety and depression in the sexual dysfunction group were 6.43 ±4.68, 6.19 ± 4.5, and 4.07 ± 4.03 and in the group with no sexual dysfunction they were 8.54±4.81,4.18 ±3.82, and 6.85±4.98, respectiv ely. The mean difference was statistically significant. A significant relationship was shown between anxiety and all aspects of sexual function, stress and all aspects of sexual function except for sexual desire and pain, depression and all areas except sexual pain (p≤0.05). Sexual function and most of its aspects are related to individual's anxiety, stress and depression. Therefore, it is recommended that the psychological aspects should also be considered in sexual counseling sessions.

Keywords: women, stress, anxiety, depression, sexual function

INTRODUCTION

Sexual function is a part of life and human behavior and it is too intertwined with a person's characteristics as if it is impossible to be discussed as an independent phenomenon.

The World Health Organization defines sexual dysfunction as the various ways in which one cannot participate in a sexual relationship as s/he wishes [1]. Sexual dysfunction will appear as difficulty in sexual desire, disorders of arousal or sexual arousal, orgasm disorders and pain [2]. One Research in iran show that sexual satisfaction plays an essential role in marital satisfaction of Iranians. According to the research done in Iran, sexual dissatisfaction was main cause for 82% of women and 74% of men who filed for divorce [3].

Several studies were done regarding the prevalence and types of sexual dysfunction in women. In 2011, Pastor reported that 40% of women feel low sex drive or decreased sexual desire and 10 to 16% of it are concerned about their low sexual drive[4]. In 2007, Elnashar and colleagues reported the prevalence of sexual dysfunction in 69% of Egyptian women [5]. In 2008, Shifren reported the prevalence of each sexual problem about 43.1% in the United States of America [6]. In 2006, safarinejad showed that the most common sexual dysfunctions of women in 2626

women aged 20–60 years old in Iran are lack of orgasm experience : 37%, desire disorder 35%, and lack of sexual 30%, pain during intercourse: 26.7%[2]. In another study in Iran [2012], the prevalence of sexual dysfunction was 31%, of which the prevalence of low sexual desire disorder was 33%, sexual arousal disorder was 16,5%, orgasm disorders was 25%, and painful intercourse was 45.5% [7].

mental disease has a large effect on sexual function ,and several studies have reported that sexual dysfunction is sig nificantly associated with depression. [8,9]. Emotions related to depressed affect, such as sadness, disillusion, and lack of pleasure, have been shown to be strong correlates of sexual dysfunction. [10]. Hartman suggests that a high percentage of women and men who suffer from moderate to severe depression experience low sexual activity. Although it is a mutualistic relationship, it will be more complicated by the side effects of sexual treatment with antidepressants and iImprovement of sexual function is related to further improvements of depressive symptoms. [11]. Several studies have reported that anxiety can cause sexual dysfunction in women [12, 13]. A study has been done by Lin and colleagues in Taiwan to investigate the relationship between sexual dysfunction, anxiety, depression and physical complaints among the patients with major depression. 135 patients with major depression were considered in this study as the target population; the results showed that the severity of sexual dysfunction among patients with major depression has the highest correlation with the severity of depression, but there was no significant relationship with the severity of physical complaints [14]. Kashdan and colleagues studied over 1500 samples; they found that people who feel anxious experience sexual dysfunction in comparison with those who feel no anxiety [15].

The results of various studies on the impact of stress on sexual function are different. In a study, to investigate the relationship between stress and sexual function, Tsachi and colleagues showed that the sexual activity of the couples who are satisfied with their sexual life will increase in the day after a stressful day [16]. Hamilton, in his study, found that hormonal and physiological factors play an important role in reducing sexual excitement when stress is involved [17]. The results of a study on the effect of acute and chronic daily stress on sexual excitement in women who were sexually active showed that those under acute stress had lower rates of mental agitation, but chronic stress had no effect on the level of mental agitation [18].

Sexual dysfunction acts as a deterrent in social, personal activities and marital adjustment for women [19]. Since there are few studies on the relationship between sexual function and its domain with stress, anxiety, and depression, the researchers aimed to design and perform a study to investigating the relationship between stress, anxiety and depression with sexual function and its domain [desire, arousal, orgasm, etc.].

MATERIALS AND METHODS

This is a descriptive, analytical and cross-sectional study which was done in 2014-2015. The sample size of 514 people were determined by using 31% of prevalence rate in Mazinani's study (7) and by using the formula $N = \frac{z^2 pq}{d^2}$، z=1.96, p=31%, q=69%, d=.04. Collecting data from the health care centers in Shiraz (Capital City of Fars province), ten health care centers were randomly selected as a cluster from North and South and East and West (from north and south, each one with two centers and from West and East, each one with three centers and in average and regarding the number of clients, from each center 51-52 people). Purposeful random sampling method was used. The study population consisted of women of reproductive or childbearing age who were referred to the health care centers of Shiraz. Inclusion criteria were the women aged 15–45, married, resident in Shiraz or at least one year has passed from their residency in Shiraz, Iranian, and willingness to participate in the study. Exclusion criteria were lactating women with less than eight weeks after their childbirth, women who had not been living with their husbands in the past six months and pregnant women. The study began in February 2015 and ended in June 2015. Before participating in the study, all the participants in the study completed the informed consent form. Data collection instrument included Female Sexual Function Index (FSFI) and the scale of stress, anxiety and depression of Lewinda (dass-21). A questionnaire of female sexual function included 19 items/questions assessing the women's sexual function in the six domains of sexual desire, psychological stimulation, lubrication, orgasm, satisfaction and sexual pain. Based on the available options, the score of each question is 0 to 5 and the score 28 and less than 28 is considered as sexual dysfunction (20, 21). This scale is standardized in Iran by Mohammadi, Haidari and Faghrzadeh and they reported that Cronbach's alpha coefficient for the entire scale was 70% and for the subscales it was 80% (22). In the Sepehrian's study, Cronbach's alpha for the total score of women's sexual function is 95% and this coefficient for the scale of desire, psychological arousal, lubrication, orgasm, satisfaction and sexual pain was calculated 0.67, 0.88, 0.89, .0.86, 0.93,0.9 , respectively (19). The Cronbach's alpha in Sepehrian's research is the basis of this study.

Lewinda's scale of stress, anxiety and depression was used in this study (dass-21). This scale was tested on a large human sample by Lewinda (dass-21) in 1995. Crawford and Henry compared this instrument with 2 other instruments which were related to depression and anxiety, in a sample size of 1771 people of England and reported that the reliability with Cronbach's alpha was 95% for depression, 90% for anxiety, 93% for stress, and 97% was reported for overall score (23). Also, in Iran, Cronbach's alpha was reported by Moradipanah 94% for the domain of depression, 92% for anxiety, and 82% for stress (24).

In the study done by Sepehrian and colleagues, the Cronbach's alpha for the study sample and under the scale of stress, depression and anxiety was 74%, 62% and 73%, respectively (19). Therefore, this instrument was used in the present study. This questionnaire consists of 21 articles, seven questions are used for each of those symptoms of depression, anxiety and stress(25) and each subject responds to any item as never (0), low (1), high (2) and very high (3) (19). Grading method is listed in the table below.

SCORE	DEPRESSION	ANXIETY	STRESS
NORMAL	0-9	0-7	0-14
MILD	10-13	8-9	15-18
MODERATE	14-20	10-14	19-25
SEVER	21-27	15-19	26-33
VERY SEVER	≥28	≥20	≥34

Data analysis:
Data analysis was done using SPSS software 16. For data analysis, T-Test was used to examine the relationship between the total score of sexual function and anxiety, depression and stress. Also, Fisher's exact test was used to investigate the relationship between sexual function and stress, anxiety and depression as well as the relationship between anxiety and depression associated with sexual function domains. Chi-square test was used to assess the relationship between stress and the domains of sexual function, and Pearson's correlation coefficient was used to determine the correlation between sexual function and its domains with stress, anxiety and depression.

RESULTS

The mean age of all samples was 30.9 ± 5.8 years and that of the group of people with sexual dysfunction was 31.01 ± 5.9. For the group of people without dysfunction it was 30.3 ± 5.4. The mean level of education in the spouses of the group without sexual dysfunction was significantly higher than those with sexual dysfunction. Among the all samples (N=514), 461 subjects (89.7%) had no stress, 43 subjects (8.4%) had mild stress and 10subjects (1.9%) had moderate stress (Table 1). The stress mean score of all samples was 7.96± 4.9. The stress mean score in subjects without dysfunction was 6.43 ± 4.68 and in people who had dysfunction it was 8.54 ± 4.81; the differences were statistically significant. Stress indicated the statistically significant relationship with sexual function (p=0.006), excitement domains (p=0.001), lubrication (p=0.002), orgasm (p=0.000) and satisfaction (p=0.000), but it didn't indicate a significant association with the domains of desire (P=0.054) and sexual pain (P=0. 17).

Pearson correlation coefficient showed an inverse linear relationship between stress and sexual function and its domains. Among them, sexual satisfaction showed a strong linear relationship compared with other areas (Table 2).
349 subjects (67.9%) had no anxiety, 63 (12.3%) suffered from mild anxiety, 88 (17.1%) had moderate anxiety, 12 (2.3%) suffered from severe anxiety and 2 (.4%) suffered from very severe anxiety.

The overall anxiety mean score (5.64 ± 4.4) in subjects who had dysfunction was significantly higher than the people who had no sexual dysfunction (6.19 ± 4.5 compared to 4.18 ± 3.82)(Table 1). Anxiety indicated a significant relationship with sexual function (p=0.000), desire (P=0.001), excitement (p=0.006), lubrication (p=0.000), orgasm (p=0.006), satisfaction (p=0.02), and sexual pain (P=0, 04). Pearson correlation coefficient also showed an inverse linear relationship between these variables. Among the domains, satisfaction showed a stronger inverse linear relationship than other areas and the weakest domain was sexual pain (Table 3).

382 subjects (74.3%) had no depression, 88 (17.1%) suffered from mild depression, 43 (8.4%) suffered from moderate depression and 1 subject (0.2%) suffered from severe depression.

The total depression mean score was 6.18 ± 4.9, and in subjects without dysfunction and with dysfunction it was 4.07 ± 4.03 and 6.85 ± 4.98; the differences were statistically significant ($p<0.05$) (Table 1). The depression mean score in subjects with sexual function was higher than those with no sexual function. Depression indicated a significant relationship with sexual function (p=0.000) and most of its domains including desire, excitement, lubrication, orgasm and satisfaction (p=0.000), except for sexual pain (P=0, 08). Pearson correlation coefficient

showed an inverse linear relationship among these variables. Among the domains, satisfaction showed a strong inverse linear relationship and the sexual pain showed a weaker relationship (Table 4).

Sexual function indicated a significant relationship with stress, anxiety and depression (P<.05). Pearson correlation coefficient showed that there was an inverse linear relationship between the total score of sexual function with those of stress, anxiety and depression; among these 3 factors, depression showed a stronger inverse linear relationship than stress and anxiety (Table 2).

DISCUSSION

One of the factors affecting happy life and happiness in marital life is pleasurable sexual relationship. This study indicated that there was a statistically significant relationship between stress and sexual function and all its domains, except for the domains of sexual pain and desire. In the study done by Ebadi et al., it was shown that a significant relationship exists between stress and the score of sexual function, sexual desire, arousal, lubrication, orgasm, pain and satisfaction. The stress mean score in subjects with normal sexual function was 32.9 and in the group of people who had sexual dysfunction it was 33.3 (26). Data showed the harmful effects of stress on sexual function which was consistent with the results of this study. But in the present research, unlike the mentioned research, stress showed no significant relationship with sexual desire. This difference may be due to the differences in the instruments used by researchers. In the present study, the scale of Lewinda was used to assess stress and in the Abedian's study the perceived stress scale was used.

The result of Sepehrian's study (19) suggests that there is a significant relationship between stress and sexual dysfunction. The study also noted that there were a negative relationship between stress and five subscales of sexual function including sexual desire, sexual excitement, lubrication, orgasm and sexual satisfaction and a positive direct relationship between stress and sexual pain. The stress mean score of this study was 7.1 ±4.14. No relationship was observed between stress and sexual pain and desire in the present research, but an inverse linear relationship was shown in other domains of sexual function. Some differences existing in the present research might be due to the differences in sample size of the 2 studies (514 vs. 330) and the method of sample selection.T mentioned research was done on the patients who were referred to the selected obstetric clinics whereas the present study was done on the women who referred to health centers, both healthy and otherwise.

In the study by Lee et al. (2012) which investigated the relationship between job stress and satisfaction of sex life among nurses, it was shown that satisfaction of sex life has an inverse relationship with stress. Sexual satisfaction and sexual desire showed a positive effect. 31.5% of the participants were experiencing job stress. They found that high level of job stress among nurses has an indirect and negative effect on their psychological health. This imbalance condition constantly makes emotional stress and disease. In these situations, people should spend more energy on the jobs which can damage their physical and psychological health and sexual satisfaction (27). The result of the present study is consistent with that of Lee's study.

Another study by Hamilton et al. to investigate the chronic stress and females' sexual function indicated that high level of chronic stress is associated with decreased sexual arousal. No significant difference was observed in the total score of sexual function in groups with high and moderate stress, but the subjects with high level of stress had disorders in lubrication and sexual pain more than those with moderate stress. By decreased sexual arousal in women, hormonal and psychological factors will experience chronic stress. Physiologically, stress interferes with sexual activity by making cognitive and emotional changes. This physiological response of stress makes the individual not concentrate on sexual relationship and excitement (17). In this study, no significant relationship was observed between sexual desire and pain with stress that is inconsistent with the mentioned study.

Studies conducted on animals showed the impacts of stress intervention on secreted hormones by the Hypothlomic-Pituitary – Adrenal Axis that are involved in controlling sexual response and fertility. In short, the secreted Glucocorticoids from Adrenal Gland prevent Hypothalamic- Pituitary – Adrenal Axis by interfering with the production of the hormones-releasing Gonadotropin, Luteinizing and the Follicle stimulating hormone (28,29). Gonadotropins are reduced by decreasing the production of Gonadal Steroids such as Testosterone & Estradiol; both hormones act as facilitators on sexual excitation (30, 31).

Anxiety is one of the psychological factors that affect the sexual function. The findings of this study indicated a significant association between anxiety and sexual function (P=.000) and all its domains. Paraskevi, in his study, showed that depression and anxiety had a significant inverse relationship with sexual function (32). Leiva et al., in their study, showed that the prevalence of sexual dysfunction in patients with psoriasis was more than healthy subjects (53.7% vs. 17.5%). Anxiety exists in 50% of patients and 20% of healthy subjects. Multivariate logistic

regression model indicated that anxiety is one of the potential factors that affect the sexual dysfunction (33). This result is consistent with those of present study.

The findings of Burhanettin Kaya's study in Turkey showed that the total score of sexual function had an inverse correlation with anxiety. When the anxiety score is high, sexual dysfunction will be higher. Anxiety with pain, physical complaints and avoiding excitement were observed (34). In the present research, anxiety had a significant relationship with all domains of sexual function. The differences are the distinctions in sample size and various instruments used by researchers so that The Beck Anxiety Inventory was used in the mentioned research, but in the present study, just Lewinda's questionnaire was used.

In another study in Urmia/Orumiyeh, it was indicated that there were a negative relationship between anxiety and 5 sub-scales of sexual function including sexual desire, sexual excitement, lubrication, orgasm and satisfaction and a positive direct relationship between anxiety and sexual pain. The anxiety mean score of the subjects was 5.5 ± 3.8 and the sub-scales of sexual pain, satisfaction, and lubrication were the predictors of anxiety (19). In the present study, anxiety had an inverse linear relationship with all domains of sexual function; the strongest relationship was in the domain of satisfaction and the weakest relationship was related to the domains of sexual pain. the difference could be related to the age group of these two studies; as in the present study only women of reproductive age (15-45 years) participated, but in the mentioned study the minimum age was 16 years and maximum age of the women studied was 50 years which included postmenopausal women, too.

The mechanism of anxiety which affects women's sexual excitement is not clearly defined. Anxiety increases the women's concern, fear of their sexual life and sexual treatment. Anxiety which is associated with sexual relationship can cause difficulty in natural activity of the sexual relationship. When there is no specific sexual problem with anxiety, it is also possible that the high level of anxiety causes some cognitive problems including dizziness and etc which is against the sexual response. Researches done at laboratory on women without sexual dysfunction indicated that unrelated cognitive impairment to sexual relations can reduce the physiological and mental stimulation and sexual excitement (35).

The findings of this study showed that depression can affect sexual function and there was also a significant relationship between all domains of sexual function with depression, except pain. Among all domains, the strongest and the weakest relationship with depression belonged to satisfaction domains and sexual pain, respectively. In the present study, depression showed a stronger relationship with sexual function rather than stress and anxiety.

In another study, Leyva showed that sexual dysfunction in Psoriasis group is more than healthy group. It was reported that the rate of depression in patients group was more than healthy subjects (32.5% vs. 4.9%). They found that depression was one of the factors that can affect sexual function (33). This result is consistent with that of the present study.

Sepehrian, in his study, found that depression is one of the strongest predictors of female sexual function. The depression mean score of females was 6.18 ± 4.9. There is also a negative relationship between depression and five subscales of sexual function including sexual desire, sexual excitement, lubrication, orgasm and satisfaction and a positive direct relationship between depression and sexual pain. The sexual pain was a predictor of depression (19). In this study, correlation coefficient shows an inverse linear relationship between depression and the domains of sexual function. The strongest and the weakest relationships were related to satisfaction domains and sexual pain, respectively. Perhaps, the reason of this difference is the method of samples selection. The present study was done on the subjects who referred to health care centers of city, but in Sepehrian's study; the sample size included the female patients who referred to the private obstetric clinics. Another difference is that between the sample sizes of the two groups.

In the present study, it was indicated that depression was associated with female sexual dysfunction. This is consistent with Lai's study (36). Lai showed that one of the most prevalent sexual problems in depressed women is sexual arousal. Toledano believed that sexual arousal is an important part of human's sexual response which arises from physiological, emotional and cognitive processes (37). It seems that psychological factors play a significant role in female sexual arousal disorder.

In the present research, depression had a significant relationship with orgasm disorder. In studies by Chivers (38) and Lai (36), depressed women had more problems during orgasm.

In the present study, there was a relationship between depression and sexual dissatisfaction. This result is consistent with the study results of other researchers (36, 38). Krishna (39) (2011) and Baldovin(40) (2006) believed that

controlling the symptoms of depression is effective for increasing satisfaction and improving sexual function. In the present study, no significant relationship was observed between pain and depression; this result is consistent with the obtained results by some researchers (36, 38). But some studies have pointed that there is a relationship between pain and depression.

Valadares (2008)[41] and Farmer (2007)[42] , in their studies, indicated that there was a relationship between depression and enhancement in sexual experience. Farmer believes that many factors may cause dyspareunia including infections, allergies, muscle spasm in the vagina, hormonal disorders, history of sexual abuse and psychological-mental problems. This result is not consistent with those of the present study. The reason of this distinction is the method of samples selection. Farmer enrolled the university students as the sample, but in the present study the sample consisted of the women who were referred to the health care centers and some of the studies indicated that sexual pain mostly happen in lower ages. The different instrument used in researches is another reason of such differences.

The feelings associated with depression such as sadness, frustration, lack of joy and pleasure has a negative impact on sexual function (43). Depression is a state that affects individual's mood and reduces activity and can affect a person's thoughts, feelings, treatment and physical body. Depressed people feel persistent numbness, hopelessness, worthlessness and guilt and they generally lose their interest to life, job and other activities which were previously joyful for them including sexual activity (44). These results suggest that the effort to improve female's mental hygiene and their psychological aspects should be conducted alongside training on the sexual affairs.

Limitations of this study was first regarding the importance and privacy of the issue; it was difficult for some the women to state their sexual problems, and the researcher tried to solve this problem by protecting the privacy of the participants. She explained that the information is confidential and asked the subjects to refer to a psychiatrist and also counseling centers, in necessary cases. Also, some subjects who responded the questions faced some ambiguities; therefore, the researcher tried to solve the problem with a full explanation.

The strengths of this study was sampling from several health care centers in the city that can be generalized to the entire community as well.

Table 1: The relationship between sexual function and stress, anxiety, depression

variable	score	With sexual dysfunction(%)	Without sexual dysfunction (%)	p-value	Correlation	mean± SD
Stress	0-14	326(87.9%)	135(94.4%)	0.006	-0.26	7.96 ±4.9
	15-18	39(10.5%)	4(2.8%)			
	19-25	6(1.6%)	4(2.8%)			
Anxiety	0-7	231(62.3%)	118(82.5%)	0.000	-0.26	5.64 ± 4.4
	8-9	52(14%)	11(7.7%)			
	10-14	76(20.5%)	12(8.4%)			
	15-19	10(2.7%)	2(1.4%)			
	≥20	2(.5%)	0(0%)			
Depression	0-9	257(69.3%)	125(87.4%)	0.000	-0.31	6.18 ± 4.9
	10-13	74(19.9%)	14(9.8%)			
	14-20	40(10.8%)	3(2.1%)			
	21-27	0(0%)	1(.7%)			

NOTE:we use fisher exact test for analyses

Table 2: the relationship between stress and sexual function subscale

Stress score Variable	score	0-14	15-18	19-25	p-value	Correlation
desire	>3.3	309(67%)	21(48.8%)	7(70%)	.054	-0.16
	≤3.3	152(33%)	22(51.2%)	3(30%)		
arousal	>3.4	302(65.5%)	16(37.2%)	7(70%)	0.001	-0.2
	≤3.4	159(34.5%)	27(62.8%)	3(30%)		
lubrication	>3.4	381(82.6%)	26(60.5%)	8(80%)	0.002	-0.18
	≤3.4	80(17.4%)	17(39.5%)	2(20%)		
orgasm	>3.4	383(83.1%)	20(46.5%)	7(70%)	0.000	-0.24
	≤3.4	78(16.9%)	23(53.5%)	3(30%)		
satisfaction	>3.8	357(77.4%)	20(46.5%)	7(70%)	0.000	-0.28
	≤3.8	104(22.6%)	23(53.5%)	3(30%)		
pain	>3.8	319(69.2%)	24(55.8%)	6(60%)	0.17	-0.17
	≤3.8	142(30.8%)	19(44.2%)	4(40%)		

NOTE: we use chi-square test for this analises

Table 3: the relationship between anxiety and sexual function subscale

anxiety score Variable	score	0-7	8-9	10-14	15-19	>20	p-value	Correlation
desire	>3.3	247(70.8%)	39(61.9%)	44(50%)	7(58.3%)	0(0%)	.001	-0.2
	≤3.3	102(29.2%)	24(4.7%)	44(50%)	5(41.7%)	2(100%)		
arousal	>3.4	236(67.6%)	39(61.9%)	44(50%)	6(50%)	0(0%)	0.006	-0.22
	≤3.4	113(32.4%)	24(38.1%)	44(50%)	6(50%)	2(100%)		
lubrication	>3.4	302(86.5%)	48(76.2%)	58(65.9%)	6(50%)	1(50%)	0.000	-0.19
	≤3.4	47(13.5%)	15(23.8%)	30(34.1%)	6(50%)	1(50%)		
orgasm	>3.4	286(81.9%)	55(87.3%)	61(69.3%)	7(58.3%)	1(50%)	0.006	-0.2
	≤3.4	6(18.1%)	8(12.7%)	27(30.7%)	5(41.7%)	1(50%)		
satisfaction	>3.8	270(77.4%)	48(76.2%)	59(67%)	7(58.3%)	0(0%)	0.02	-0.24
	≤3.8	79(22.6%)	15(23.8%)	29(33%)	5(41.7%)	2(100%)		
pain	>3.8	249(71.3%)	36(57.1%)	53(60.2%)	10(83.3%)	1(50%)	0.04	-0.18
	≤3.8	100(28.7%)	27(42.9%)	35(39.8%)	2(16.7%)	1(50%)		

Note: we use fisher exact test for this analyses

Table 4: the relationship between depression and sexual function subscale

Depression score Variable	score	0-9	10-13	14-20	21-27	p-value	Correlation
desire	>3.3	273(71.5%)	45(51.1%)	18(41.9%)	1(100%)	.000	-0.24
	≤3.3	109(28.5%)	43(48.9%)	25(58.1%)	0(0%)		
arousal	>3.4	266(69.6%)	45(51.1%)	13(30.2%)	1(100%)	0.000	-0.3
	≤3.4	116(30.4%)	43(48.9%)	30(69.8%)	0(0%)		
lubrication	>3.4	323(84.6%)	67(76.1%)	25(58.1%)	1(100%)	0.000	-0.21
	≤3.4	59(15.4%)	21(23.9%)	18(41.9%)	0(0%)		
orgasm	>3.4	321(84%)	68(77.3%)	20(46.5%)	1(100%)	0.000	-0.28
	≤3.4	61(16%)	20(22.7%)	23(53.5%)	0(0%)		
satisfaction	>3.8	305(79.8%)	60(68.2%)	18(41.9%)	1(100%)	0.000	-0.34
	≤3.8	77(20.2%)	28(31.8%)	25(58.1%)	0(0%)		
pain	>3.8	270(70.7%)	53(60.2%)	25(58.1%)	1(100%)	0.08	-0.17
	≤3.8	112(29.3%)	35(39.8%)	18(41.9%)	0(0%)		

NOTE: we use fisher exact test for this analyses

CONCLUSION

The results of this study indicated that sexual function was associated with individual's mental status. There were significant associations between stress and domains of function except pain and sexual desire; between Depression and all domains except sexual pain; and between Anxiety and all domains of sexual function. Stress, anxiety and depression have a significant inverse relationship with the total score of sexual function. The strongest and weakest relationships of these domains with these three psychological factors were observed in satisfaction and sexual pain, respectively. Therefore, it is recommended that these mental disorders should be recognized and treated and mental consultation should be arranged in people who suffer from sexual dysfunction.

Suggestions

It is suggested that the rate of depression, stress and anxiety should be investigated on Iranian men and also the effects of factors in reducing depression, anxiety and stress on female and meal sexual function in future studies.

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REFERENCES

[1] Douma S DM, Tsakiris A, Zamboulis C Male and female sexual dysfunction: is hypertension an innocent bystander or a major contributor? Rev Bras Hipertens. 2007;14(3):139-47.
[2] Safarinejad M. Female sexual dysfunction in a population-based study in Iran: prevalence and associated risk factors. International Journal of Impotence Research. 2006;18(4):382-95.
[3] Rahmani A, Khoei EM, Gholi LA. Sexual satisfaction and its relation to marital happiness in Iranians. Iranian Journal of Public Health. 2009;38(4):77-82.

[4] Pastor Z. [Female sexual desire disorders--prevalence, classification and treatment possibilities]. Ceska gynekologie/Ceska lekarska spolecnost J Ev Purkyne. 2011;76(1):59-64.
[5] Elnashar AM ea. Female sexual dysfunction in Lower Egypt. British Journal of Obstetrics and Gynaecology. 2007;114(2):201-6.
[6] Shifren JL, Monz BU, Russo PA, Segreti A, Johannes CB. Sexual problems and distress in United States women: prevalence and correlates. Obstetrics & Gynecology. 2008;112(5):970-8.
[7] Mazinani R AMM, Kaskian A, Kashanian M. Evaluation of prevalence of sexual dysfunctions and its related factors in women. . Razi Journal of Medical Sciences. 2013;19(105):60-8.
[8] Kennedy SH, Rizvi S. Sexual dysfunction, depression, and the impact of antidepressants. Journal of clinical psychopharmacology. 2009;29(2):157-64.
[9] Smith JF, Breyer BN, Eisenberg ML, Sharlip ID, Shindel AW. Sexual function and depressive symptoms among male North American medical students. The Journal of Sexual Medicine. 2010;7(12):3909-17.
[10] Chen KC, Yeh TL, Lee IH, Chen PS, Huang HC, Yang YK, et al. ORIGINAL RESEARCH—OUTCOMES ASSESSMENT: Age, Gender, Depression, and Sexual Dysfunction in Taiwan. The Journal of Sexual Medicine. 2009;6(11):3056-62.
[11] Hartmann U. Depression and sexual dysfunction. Journal of Men's Health and Gender. 2007;4(1):18-25.
[12] Schnatz PF, Whitehurst SK, O'Sullivan DM. Sexual dysfunction, depression, and anxiety among patients of an inner-city menopause clinic. Journal of Women's Health. 2010;19(10):1843-9.
[13] Laurent SM, Simons AD. Sexual dysfunction in depression and anxiety: conceptualizing sexual dysfunction as part of an internalizing dimension. Clinical psychology review. 2009;29(7):573-85.
[14] Lin C-F, Juang Y-Y, Wen J-K, Liu C-Y, Hung C-I. Correlations between sexual dysfunction, depression, anxiety, and somatic symptoms among patients with major depressive disorder. Chang Gung medical journal. 2012;35(4):323-31.
[15] Kashdan TB, Adams L, Savostyanova A, Ferssizidis P, McKnight PE, Nezlek JB. Effects of social anxiety and depressive symptoms on the frequency and quality of sexual activity: A daily process approach. Behaviour Research and Therapy. 2011;49(5):352-60.
[16] Ein-Dor T, Hirschberger G. Sexual healing Daily diary evidence that sex relieves stress for men and women in satisfying relationships. Journal of Social and Personal Relationships. 2012;29(1):126-39.
[17] Hamilton LD, Meston CM. Chronic stress and sexual function in women. The journal of sexual medicine. 2013;10(10):2443-54.
[18] ter Kuile MM, Vigeveno D, Laan E. Preliminary evidence that acute and chronic daily psychological stress affect sexual arousal in sexually functional women. Behaviour Research and Therapy. 2007;45(9):2078-89.
[19] Sepehrian F HL. Female sexual dysfunction and some associate factors in urmia city The journal of medical urmia 2011;23(2):148-54.
[20] Rosen RC. Assessment of female sexual dysfunction: review of validated methods. Fertility and Sterility. 2002;77:89-93.
[21] Rosen CB, J. Heiman, S. Leiblum, C. Meston, R. Shabsigh, D. Ferguson, R. D'Agostino, R. The Female Sexual Function Index (FSFI): a multidimensional self-report instrument for the assessment of female sexual function. Journal of Sex &Marital Therapy. 2000;26(2):191-208.
[22] Mohammady KH HM, Fgehzadeh S Validity of the Persian version of sexual functionin women as female sexual function index. J Payesh 2008;7(3): 269-78.
[23] Crawford JR, Henry JD. The Depression Anxiety Stress Scales (DASS): Normative data and latent structure in a large non-clinical sample. British Journal of Clinical Psychology. 2003;42(2):111-31.
[24] Moradipanah F. The effect of music on anxiety stress and mild depression patients undergoing cardiac catheterization [dissertation]. Tehran: TarbiyatModarres University. 2005.
[25] Psychology Department U-. - www.psy.unsw.edu.au/dass.
[26] Abedi P, Afrazeh M, Javadifar N, Saki A. The Relation Between Stress and Sexual Function and Satisfaction in Reproductive-Age Women in Iran: A Cross-Sectional Study. Journal of sex & marital therapy. 2015;41(4):384-90.
[27] Lee H-H, Lee P-R, Kao W-T, Lee Y-L. The relationship between sex life satisfaction and job stress of married nurses. BMC research notes. 2012;5(1):445.
[28] Breen KM, Karsch FJ. Does cortisol inhibit pulsatile luteinizing hormone secretion at the hypothalamic or pituitary level? Endocrinology. 2004;145(2):692-8.
[29] Gore AC, Attardi B, DeFranco DB. Glucocorticoid repression of the reproductive axis: effects on GnRH and gonadotropin subunit mRNA levels. Molecular and cellular endocrinology. 2006;256(1):40-8.
[30] Traish AM, Kim N, Min K, Munarriz R, Goldstein I. Role of androgens in female genital sexual arousal: receptor expression, structure, and function. Fertility and Sterility. 2002;77:11-8.
[31] Traish AM, Botchevar E, Kim NN. Biochemical factors modulating female genital sexual arousal physiology. The Journal of Sexual Medicine. 2010;7(9):2925-46.
[32] Theofilou PA. Sexual functioning in chronic kidney disease: the association with depression and anxiety. Hemodialysis International. 2012;16(1):76-81.

[33] Molina-Leyva A, Almodovar-Real A, Carrascosa JC-R, Molina-Leyva I, Naranjo-Sintes R, Jimenez-Moleon JJ. Distribution pattern of psoriasis, anxiety and depression as possible causes of sexual dysfunction in patients with moderate to severe psoriasis. Anais brasileiros de dermatologia. 2015;90(3):338-45.
[34] Kaya B, Unal S, Ozenli Y, Gursoy N, Tekiner S, Kafkasli A. Anxiety, depression and sexual dysfunction in women with chronic pelvic pain. Sexual and Relationship therapy. 2006;21(02):187-96.
[35] Bradford A, Meston CM. The impact of anxiety on sexual arousal in women. Behaviour Research and Therapy. 2006;44(8):1067-77.
[36] Lai C-H. Major depressive disorder: gender differences in symptoms, life quality, and sexual function. Journal of clinical psychopharmacology. 2011;31(1):39-44.
[37] Toledano R, Pfaus J. ORIGINAL RESEARCH—OUTCOMES ASSESSMENT: The Sexual Arousal and Desire Inventory (SADI): A Multidimensional Scale to Assess Subjective Sexual Arousal and Desire. The Journal of Sexual Medicine. 2006;3(5):853-77.
[38] Chivers ML, Pittini R, Grigoriadis S, Villegas L, Ross LE. The relationship between sexual functioning and depressive symptomatology in postpartum women: A pilot study. The Journal of Sexual Medicine. 2011;8(3):792-9.
[39] Krishna K, Avasthi A, Grover S. Prevalence and psychological impact of antidepressant-associated sexual dysfunction: A study from North India. Journal of clinical psychopharmacology. 2011;31(4):457-62.
[40] Baldwin D, Bridgman K, Buis C. Resolution of sexual dysfunction during double-blind treatment of major depression with reboxetine or paroxetine. Journal of Psychopharmacology. 2006;20(1):91-6.
[41] Valadares AL, Pinto-Neto AM, Conde DM, Sousa MH, Osis MJ, Costa-Paiva L. A population-based study of dyspareunia in a cohort of middle-aged Brazilian women. Menopause. 2008;15(6):1184-90.
[42] Farmer MA, Meston CM. Predictors of genital pain in young women. Archives of sexual behavior. 2007;36(6):831-43.
[43] Nobre PJ, Pinto-Gouveia J. Emotions during sexual activity: Differences between sexually functional and dysfunctional men and women. Archives of sexual behavior. 2006;35(4):491-9.
[44] Bahrami N SN, Ranjbar Kouchaksaraei F, Ghoujazadeh M Comparing of depression and sexual satisfaction in fertile and infertile couple. Journal of Reproduction and Infertility. 2007;8(1):52-9.