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Sexual function of women with Chronic Renal Failure Undergoing Hemodialysis and factors related to it

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ABSTRACT

Aims: One of the important aspects of life quality is sexual function. Chronic renal failure and its treatments have effect on sexual function. The aim of this study was to investigate sexual function of women with chronic renal failure undergoing hemodialysis and factors related to it.
Methods: In this cross sectional study, one hundred women with chronic renal failure undergoing hemodialysis at four dialysis units in Karaj were interviewed in 2011 and also their medical records were investigated. Sampling method was census sampling. The instruments used included: demographic data form, the (CES-D) center of epidemiologic studies of depression scale and Female Sexual Function Index (FSFI) and World Health Organization life quality (WHOQOL- BREF) questionnaire. Data was analyzed by SPSS software and using descriptive statistics, t-test, ANOVA and coefficient Pearson correlation.
Results: The findings indicated that mean score of female sexual function index was 13.22±8.58 (1.2-36 range) and 100% of women had score of female sexual function index lower than 28. Sexual desire decrease, 62% sexual arousal decrease, 52% vaginal lubrication decrease, 60% failure to orgasm, 33% sexual dissatisfaction and 54% dyspareunia were experienced. There were significant inverse correlation between score of female sexual function index undergoing hemodialysis with creatinine level (p=0.016), depression (p=0.016) and positive correlation with hemoglobin level (p=0.001) and total score of life quality (p=0.006). The presence of diabetes showed significant relationship with score of female sexual function (p=0.049).
Conclusion: with regard to sexual dysfunction prevalence among women with chronic renal failure undergoing hemodialysis and negative impact on life quality, it seems that in order to provide holistic nursing care, assessment and planning for treating it, is necessary.

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1.Introduction

Chronic renal failure is counted as general healthy major problem. United States national kidney foundation defined chronic renal failure

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as renal damage or Glomeroli filtration level less than 60 milliliter per minute for 1.73 square meters of body surface for three months or more. This position is progressive and irreversible which leads to uremia at the end [1]. The main treatment of this sickness is renal transplantation, but regarding that accessing to transplanting renal is not easy in most parts of the world, until renal transplantation the patient is undergoing treatment by dialysis [2]. Until December of 2008, 16600 hemodialysis patients were undergoing hemodialysis in 355 units of chronic hemodialysis of the country and 20% were added to these patients annually.

Patients undergoing hemodialysis experience different problems related to special side effects of the sickness and treatment which decrease their life quality [2]. Among the prevalent problems of these patients is sexual dysfunction [4]. In Sital's study 80% of women undergoing hemodialysis had sexual dysfunction [5]. Isgol's study on the women undergoing hemodialysis showed that 65% dissatisfaction of sexual life, 40% sexual relation stop, 23% failure to orgasm and 60% decrease in Libido [4]. In Lowstarovikz' study the most prevalent of sexual problems of women undergoing hemodialysis was sexual arousal disorder and failure to orgasm [7].

The major problems of women suffering from chronic renal failure are lack of sexual desire, vaginal lubrication decrease, failure to orgasm, vaginismose and dyspareunia and infertility [8]. Hormonal, vascular, nervous, psychological issues, suffering from chronic sicknesses and drugs have effect on sexual dysfunction in women undergoing hemodialysis [8]. The increase in Prolaktin level, disorder in LH/FSH ratio, decrease in Estradiol, estrone, Protestrone and Testosterone, Hypophasis-hypotalamous-Gonadal axis disorder[9], age increase [10], suffering from chronic sickness, Anemia, shortage of vitamin D, hyper paraidoism [11]. Unsuccessful hemodialysis [12], malnutrition, zinc deficiency, vascular atrevasklorz, uremic neuropathy, side effects caused by the drugs consumption[13], depression, anxiety, sleeping disorders[7] are among the factors related to sexual function of women undergoing hemodialysis.

Despite the high prevalent of sexual dysfunction in women undergoing hemodialysis, a small number of them go for consultation. There was a research which showed that despite the importance of sexual issues from the patients' point of view only 21% of them consulted with a specialist and 6% are treated [5]. Shortage of awareness about sexual issues from one side and anxiety, shame of talking about that from the other side are two factors of resonators of sexual problems.

Sexual dysfunction has negative effect on different aspects of life quality of a person by making anxiety, depression, and decrease of confidence and marriage relationship disorder and decrease the life quality [8]. Sexual behavior of women is according to the culture of that society. There are different studies about prevalent of women sexual dysfunction suffering from chronic renal failure undergoing hemodialysis, but the level of prevalence of this disorder in Iranian women undergoing hemodialysis is not clear. Regarding that sexual function is a part of health and healthy sexual function has an important role in mental health, making and stability of a family and prevention of the differences, misunderstandings and collapse of marriage relationship and its horrible results [14]. The present study has been done with the aim of study of women sexual function suffering from chronic renal failure undergoing hemodialysis in 2011 in Karaj.

2. Methods

This has been a cross sectional study that its statistic society has been all the women suffering from chronic renal failure referring to hemodialysis units of ShahidRajayee, ShahidBahonar, Karaj Shariati, Karaj Alborz hospital in 2011. Sampling has been done in census method. Patients undergoing emergency hemodialysis, lack of tendency in participating in the study, lack of complete consciousness have been exited from the study. Collecting

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method was in personal interview method. Instruments using in this study was a demographic characteristics form, women sexual function index, depression questionnaire related to center of depression epidemiologic study and world health organization questionnaire for life quality. Some information like laboratory parameters was extracted from the patient's medical file too. Data Collection instruments were in three parts.

A: Female sexual function index: it has been a questionnaire with 19 questions that studied women sexual function in aspects of sexual desires, sexual arousal, vaginal lubrication, orgasm, sexual satisfaction and dyspareunia. The considered scores for every question of sexual tendency were (1 to 5 scores) and for aspects of sexual arousal, vaginal lubrication, orgasm sexual satisfaction and dyspareunia were (0 to 5 scores). Total scores of every aspect have been achieved by calculation of coefficient, the coefficient of sexual tendency (0.6), sexual arousal (0.3), vaginal lubrication (0.3), orgasm (0.3), and sexual satisfaction (0.4) dyspareunia (0.4). Scores domain of sexual desires aspect was ½ to 6 scores, and other aspects are 6 and total score domain of sexual dysfunction was ½ to 36 scores. Higher score showed better sexual function. Cutting point for sexual desire (2.1), sexual arousal (2.8) vaginal lubrication (2.8), orgasm (2.6) sexual satisfaction (3), dyspareunia (3) and total scores of sexual function index (28) [23]. In Mohamadi's study , durability level of scale and subscales have been gained by stability or internal consistency coefficient, Chronbach's alpha 0.70 ≤and in the Rosen's study it has been 0.89 [16 and 15].

B: Depression questionnaire (depression epidemiologic study center): is a valid and reliable international questionnaire for measuring depression which had been gained by mixing several questionnaires of measuring depression (Bek, Volesh, Gaurdner, Zhang and Rastin) and it has been used in different studies for measuring depression in patients suffering from chronic renal failure. There are versions of these instruments with 10, 4, and 20 questions that in the present study the version with 20 questions has been used. Every question was from 0 to 3 scores (0= seldom or never (less than one day), 1= a few (1-2 day),2= sometimes (3 to 4 days), 3= most of the time (5 to 7 days)and the total score domain was between 0 to 6. Achieving higher score means more depression. According to these instruments score less than 15 is normal, 15 to 21 slight to moderate depression, score higher than 21 is extreme depression. Sajadi confirmed validity of this instrument by determining validity of simultaneously measure (depression questionnaire of Bak); also reliability of this instrument has been confirmed 0.85 by Chronbach's alpha's test [18]. Reliability of this questionnaire has been gained in Clark's study by calculating internal consistency coefficient, that Chronbach's alpha was 0.85 [19].

C: Life quality was studied by shortened form of world health organization questionnaire for life quality (WHOQOL-BREF) that was extracted from WHOQOL-100 questionnaire. This questionnaire has been translated to different languages like Persian and its validity has been confirmed. This instrument includes 26 questions that are about somatic health (7 questions), mental health (6 questions), social relationships (3 questions) and environmental health (8questions) that with 24 questions with the help of scale of 5 spots Likrit evaluates from 1 to 5. Two questions were not in any gamut and evaluate health and life quality situation totally. Domain of the scores was from 4- 20 that 4 shows the worst and 20 shows the best position. validity and reliability of the Persian translation of this questionnaire was evaluated by Nejat and et.al in population in Iran that the reliability of the questionnaire in internal consistency aspect has been achieved by Chrobach's alpha higher than 0.77 and in the re-test the reliability index of correlation within a cluster in four gamut was higher than 0.7[20].

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Ethical considerations of the present study was observed with getting permission from the hospital authorities for doing the research, presenting formal letter of introduction to the hospital authorities, introduction of the researcher to the research samples and explaining the aims and the way of doing the work for all the people of the study, getting

Table 1: Description of some demographic characteristics and some clinical factors of women undergoing hemodialysis in Karaj in 2011.

Variables	Education levels	Percent	Number	Sd ±average
Education	Illiterate	39	39	
	Elementary	24	24	
	Secondary	21	21	
	High-school	14	14	
	Higher than diploma	2	2	
Occupation	Employed	5	5	
	Housekeeper	95	95	
Menstrual status	Postmenopausal	75	75	
	With menstrual cycle	25	25	
High blood pressure		20	20	
Diabetes		51	51	
Age				52.30±10.32
Income(usd)				489.000±142.768
The time of suffering from chronic renal failure (year)				5.15±4.27
The time of doing hemodialysis (year)				3.91±3.17
(mgdl)Serum cerantinin				7.26±1.89
(gl)Hemoglobin				10.85±1.71
(gdl)Albumin				4.03±0.56
(kgm)Bmi				25.73±4.67

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written consent of the people of the study for participating in the study and to be free for departure in continuing the research, discrepancies of the culture and the norms governing the society and assuring the patients and authorities for informing them about the research results if they would like.

For analyzing the data SPSS software editing 18 was used. The data was descripted by frequency tables, mean and standard deviation and in analyzing the data Pearson correlation coefficient, t-test for independent groups and one-way variance analysis was used. Significant level of the study was considered 0.05.

3. Results

39% of women were illiterate, 95% housekeeper and 75 were postmenopausal. 51% were suffering from diabetes and 20% were suffering from high blood pressure. The average of age of women of the study was 52.30±10.32 years and the average of family income was 489.000±142.768 per month. More complete information about demographic characteristics and clinical factors has been presented in table 1.

There is the average and standard deviation of index of sexual function, depression and life quality in table number 2. Regarding the cutting spots 100% of women in the study had the total

Table 2: Average and standard deviation of different aspects of sexual function, depression and life quality index of women undergoing hemodialysis in Karaj in 2011.

		SD	The most	The least
Sexual function	Sexual desire	2.36±1.01	3.60	1.20
	Sexual arousal	1.85±1.55	3.9	0
	Vaginal lubrication	2.26±1.81	4.80	0
	Orgasm	1.74±1.44	3.90	0
	Sexual satisfaction	2.91±1.84	5.60	0
	dyspareunia	2.07±1.76	4.40	0
	Total score of sexual function	13.22±8.58	24.80	1.20
depression		11.81±11.42	42	0
Life quality	Somatic aspect	2.85±0.51	4.14	1.43
	Social aspect	2.65±0.69	5	1
	Psychological aspect	3.01±0.46	4	1.50
	Environmental aspect	2.92±0.45	4	1.88
	Total score of life quality	14.35±2.15	20	8.17

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mark of sexual function index of less than 28. In the study of sexual function index aspects it was clear that 39% experienced sexual desire decrease, 62% sexual arousal decrease, 52% vaginal lubrication decrease,60% failure to orgasm, 33% sexual dissatisfaction and 54% dyspareunia. In the study of depression level in women undergoing hemodialysis it was clear that 66% had normal depression, 10% slight depression to moderate and 24% extreme depression.

As the table number 2 showed suffering from diabetes had significant relationship with the sexual function score(p=0.049) but there was no relationship between the age, education, occupation, income, menstruation position and suffering from high blood pressure with the sexual function score. Sexual function index score in women undergoing hemodialysis with Cratinin(p=0.016), depression (p=0.016) inverse correlation was significant and with the serum hemoglobin level (p=0.001), social aspect of life quality(p<0.001)environmental aspect of life quality(p=0.0023)and total score of life quality (p=0.006) had positive and significant correlation, but there was no significant correlation with the Albumin level , body mass index (BMI), somatic aspect of life quality and mental aspect of life quality (table 4).

Table 3: Relationship of sexual function index score with the variables in women undergoing hemodialysis in Karaj in 2011.

Variable	levels	SD ±average	Statistic test
Education	Illiterate	12.49 ±8.39	p=0.897
	Elementary	14.75± 7.31	
	Secondary	12.97±9.02	
	High school	13.16±10.94	
	Higher than Diploma	11.95±10.67	
Occupation	Employed	9.10±9.44	p=٠0.273
	Housekeeper	13.43±8.53	
Menstrual status	Postmenopausal	12.78±8.21	p=0.383
	With menstrual cycle	14.52±9.66	
Diabetes	Have	0	p=0.049
	Doesn't have	11.94± 8.60	
Suffering from high blood pressure	Have	13.55± 9.18	p=0.847
	Doesn't have	13.13±8. 48	

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4. Discussion

In the present study the average of women sexual function index score was 13.22±8.58 and 100% of women undergoing hemodialysis had total score of sexual function less than 28. According to cutting point 39% had sexual desire decrease, 62% sexual arousal decrease, 52% vaginal lubrication decrease, 60%failure to orgasm, 33% sexual dissatisfaction and 54% dyspareunia. In Seethala's study 80% of women undergoing hemodialysis had score of sexual function index less than 26.55 [5]. Ketta's study showed that the average score of women sexual function index undergoing hemodialysis was 17.57±7.07 that after renal transplantation it was increased to 25.3±3.28 [21]. In another study of Ketta the average score of sexual function index in women undergoing hemodialysis was 15.9±10.4 and in healthy women it was 22.2±6.8. Sexual satisfaction score, arousal, vaginal lubrication, orgasm, satisfaction and dyspareunia compared to healthy group was less than healthy group significantly and women undergoing hemodialysis were 5.32 times more than women undergoing peritoneal dialysis exposed to sexual dysfunction [22]. In Peng's study the score average of sexual function index in women undergoing hemodialysis was documented 25.5±9.3 [10]. Aysegul's study on women undergoing hemodialysis showed that 65% had sexual life dissatisfaction, 40% sexual

Table 4: correlation of sexual function index score with variables in women undergoing hemodialysis in Karaj in 2001.

Variable	P	R
Age	0.214	-0.125
(usd)Income	0.096	0.167
The time of suffering from chronic renal failure	0.808	0.025
The time of being under hemodialysis	0.684	0.041
Serum cerantinin	0.016	-0.239
Hemoglobin	0.001	0.337
Albumin	0.433	-0.228
Bmi	0.844	-0.020
Depression	0.016	-0.241
Somatic aspect of life quality	0.079	0.177
Social aspect of life quality	<0.001	0.354
Psychological aspect of life quality	0.052	0.195
Environmental aspect of life quality	0.023	0.227
Total score of life quality	0.006	0.273

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relationship stop, 23% failure to orgasm and 60% had Libido decrease [6]. In Lew-Starowicz' study55.4% of women undergoing hemodialysis was active sexually and frequency of arousal disorder and accessing to orgasm was respectively 67.8% and 80.7% [7]. Probably disorder in ovary function and changing in sexual hormones level, psychological problems vascular and neurological disorder, suffering from chronic illnesses and drugs side effects have effect in sexual problems of women suffering from chronic renal failure undergoing hemodialysis. The average of sexual function index in women undergoing hemodialysis of this study was a lot less than other researches that have been done out of the country and frequency of sexual dysfunction was more than studies that have been done before, that this issue needs more thinking epidemiologically. The observed statistic difference can be because of difference in study type, sampling, samples number, the women age of the study, entrance criteria to study and social cultural factors.

In the present study increasing of serum Crantinin level was along with decrease of sexual function index score. This finding along with Basok's study results which showed that low sexual function was related to serum Crantinin level.

In the present study decrease of hemoglobin level was in relation with decrease of women sexual function index score. This study was along with Resic's study which showed that Erythropoietin injection with increasing hemoglobin's level help to improve sexual function of women that are undergoing hemodialysis. Although in his study there was no significant relationship between erythropoietin prescription and sexual hormones prescription [24]. Lawrence's study showed that, erythropoietin therapy helps improving Anemia and improving life quality, fatigue reduction, somatic signs, activity tolerance increase, life satisfaction increase, improving sexual function, and coition frequency increase in patients undergoing hemodialysis [25]. It seems that Anemia helps fatigue and disorder of body activity tolerance helps disorder in doing sexual activity.

In the present study suffering from diabetes had significant difference with sexual function score. This finding was similar to Payeer and Basok's study which showed that low sexual function had relationship with suffering from diabetes [23 and26]. Diabetes has negative effect on women sexual function by making neurological, vascular, hormonal, and psychosocial disorders [27]. Bargiota writes that diabetes by decrease of hydration of the mucous membranes of the body like vagina causes slippery building decrease during coition and makes dyspareunia. Hyperglycemia increases genital and urinary tract infection danger in women that also this issue helps dyspareunia increase in women with diabetes. Diabetes by making vascular changes prevents pelvic vasodilatation and dilatation of the reproductive system and natural reactions of arousal stage. Diabetic neuropathy interferes stimuli transfer and sexual response and depression result from diabetes causes confidence reduction in her, and causes healthy emotion reduction and has negative effect on sexual function. Diabetes causes change in Androgen, Estrogen and sexual hormones linked to Globin that it has adverse effect on sexual function [28].

In the present study depression was in relationship with sexual function index score reduction. This finding was conformed to Peng and Lew-Starowicz's study that showed depression was predictor of severity of sexual disorder in men and women and depressed patients had more sexual dysfunction [29, 10, and 7]. Psychological problems caused by therapy and the illness chronic process can help aggravated sexual dysfunction of women undergoing hemodialysis.

In the present study there was a relationship between life quality score and sexual function index in women undergoing hemodialysis. This finding was along with Lew-starowicz and Song's study findings that showed the women

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who are undergoing hemodialysis and had lower sexual function index had lower life quality [30, 7]. Peng's study showed that women undergoing hemodialysis that had better sexual function had higher life quality, better somatic function and better mental health [10]. It seems that a part of somatic, mental and social health of women is related to their sexual function and marriage relations. So saving and upgrading of sexual health of women undergoing hemodialysis and increasing of satisfaction of marriage life of them is effective in upgrading of the person and family's life quality.

Among the major limitations of this study was that the control group was not considered. It is suggested that other studies should be done in order to compare sexual dysfunction before dialysis, during dialysis, renal transplantation and in the women undergoing peritoneal dialysis with considering the control group.

5. Conclusion

Sexual dysfunction is a nursing diagnosis and in holistic nursing models it is expected that somatic, mental, emotional and social need of patients must be diagnosed. With regarding the prevalence of women sexual dysfunction suffering from chronic renal failure undergoing hemodialysis and knowing the probable effective factors in prominence of that and also because the negative effect of sexual dysfunction on life quality of the person planning for screening and solving of that is necessary.

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