



Psychosexual Dysfunction and Quality of Life of Hemodialysis Male Patients at Mansoura, Egypt

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Abstract

Background: Sexual health is an important aspect of Quality of life (QoL). It is a basic human right and a fundamental part of a full healthy life. Patients with Chronic kidney disease (CKD) world-wide suffer many physical dysfunctions including sexual activity. Psychological impacts may also contribute to changes in sexual functioning and further complicate CKD patients' problems. Therefore, this study aims to assess the relationship between psychosexual dysfunctions experienced by hemodialysis male patients and their evaluation of their QoL.

Methods: A descriptive correlational research design is conducted in the hemodialysis units at Urology and Nephrology Center at Mansoura University. The data were collected from 100 hemodialysis male patients who corresponded to the following inclusion criteria "Male patients on hemodialysis not be the first session for the patient, Both acute and chronic kidney disease, Married before starting hemodialysis and still married after dialysis, Aged 20-60 years, Pre-morbid sexually active adult males, Willing to voluntary participate in the study and Under treatment at the time of data collection". The study Tools included the Arizona Sexual Experience Scale (ASEX), the Psychosexual Dysfunction Questionnaires and the Quality of Life Index (QLI) Dialysis Version III.

Results: Obtained results prevailed that most of the study of sample (94%) complained of many psychosexual dysfunctions while only 6% expressed no significant psychosexual dysfunctions. These psychosexual dysfunctions are found to be highly negatively correlated with CKD patients' QoL at significant level of $p < 0.01$.

Conclusion: The vast majority of the study sample does suffer multiple psychosexual dysfunctions which negatively affects their overall QoL. Both physical and psychological distress increase CKD male patients' psychosexual dysfunctions and indicate the necessity of introducing psychiatric liaison nursing programs in the hemodialysis care units.

Keywords: Chronic Kidney Disease; Hemodialysis; Psychosexual Dysfunctions; Quality of Life; Psychiatric Liaison Nursing

Introduction

Chronic kidney disease (CKD) is a world-wide public-health problem. According to the World Health Organization (WHO), diseases of the kidney and urinary tract contribute to global burden with approximately 850,000 deaths every year and more than 115 million disability-adjusted life years [1]. Currently in Egypt hemodialysis represents the main mode for treatment of CKD patients [2]. The prevalence of dialysis patients in Egypt have increased from 10 per million population (pmp) in 1974 to 225 pmp in 1996, and then from 403 pmp in 2003 to 483 in 2004 [1].

When patients develop kidney disease, every organ of the body is affected. One of the main dysfunctions is the sexual function. Sexual dysfunction is very common in patients with kidney disease [3,4]. Prevalence estimates of sexual dysfunction ranges from 9% in pre-dialysis to 70% in dialysis patients of either sex [5].

Notably, sexuality is a basic human right and a fundamental part of a full and healthy life [6]. For most healthy men and women, sexuality is central to their lives and contributes to their personal and relational quality of life (QOL) [7]. Accordingly, WHO define

sexuality as an essential human characteristic that includes social, emotional, and physical components [8]. Moreover, sexuality is a phenomenon in which biological and psychological factors interact, so both a person's physical condition and his or her psychological well-being represent interdependent cornerstones of sexual health. Physical condition refers to the physical state of the body and bodily functions [9].

In other words, psychosexual dysfunction is a sexual dysfunction that is due to psychological causes rather than physical problems, medical illnesses, or the side effects of medication. Some of the psychological conditions include: depression anxiety (feelings of nervousness, fear, or worry) traumatic sexual experience (abuse, rape) guilty feelings stress or anxiety uncertainty about sexual orientation worry or fear about how you are able to perform sexually negative body image [10].

Regarding the hemodialysis patients, researchers addressed the sexual dysfunctions namely alterations related to drive, subjective arousal, penile erection/vaginal lubrication, ability to reach orgasm and satisfaction with orgasm [11]. In this respect, impotence or erectile dysfunction (ED) is reported to be the commonest sexual dysfunction complaint amongst men with renal failure [12]. In Egypt 82.5% of hemodialysis patients have ED [13]. In a similar study, it is found that, the prevalence of ED of any degree was 86.6% and the prevalence and the severity of ED showed significant increase as age increased [14].

Several studies addressed causes that have been purported to contribute to sexual dysfunction in patients with CKD include fatigue, co-morbid illness (such as diabetes mellitus and malnutrition), smoking, hyperprolactinemia, sex hormone disturbances, hyperparathyroidism, anemia, autonomic neuropathy, medications (including antihypertensives, antidepressant, and histamine receptor blockers), and psychosocial factors such as depression, anxiety, poor self-esteem, social withdrawal, marital discord, body image issues, fear of disability and death, loss of employment, and financial difficulties [15-17]. At times discussion of causation falls into a chicken or egg debate as the dominance of physiological and psychological factors are discussed [12].

Additionally, primary depression or subclinical depression may also play a role in the reduction in frequency of intercourse. Organic factors may also cause a decline in the frequency of intercourse. Nearly all patients were undergoing dialysis sessions three times a week, which may play a role in diminished frequency of intercourse due to fatigue after dialysis [14].

Furthermore, it is also not surprising, given this observed elevated stress experience, that individual with kidney disease re-

port high rates of psychological distress [18]. Major Depressive Disorder is the most common form of psychological distress, with 25% of those on dialysis treatment reporting clinically-significant level of depression. Additionally, 12% of dialysis users have significantly elevated anxiety symptoms [19]. In this respect, researchers emphasized the association of higher depressive symptoms and sexual dysfunction in male hemodialysis patients. The depressive symptoms are independently associated with sexual dysfunction and subjects with sexual dysfunction had significantly lower QOL scores [20].

QOL is a significant concept that has been studied in persons with CKD. WHO defined health as "a state of complete physical, mental, and social well-being and not merely the absence of disease [21]. Accordingly, QOL is most often described in one of two ways: satisfaction or happiness. While happiness tends to denote a more fleeting, unstable emotion, satisfaction implies a more permanent state that stems from core values. While social scientists were grappling with the philosophical distinctions between happiness and satisfaction, health providers became interested in the concept as it related to their patients [22].

Several studies indicated that, persons with CKD have a lower QOL than the general public [23,24]. This lower QOL may be related to the complications associated with CKD as sexual dysfunctions that significantly impact QOL [25]. Additionally, several major factors contribute to poor QOL in patients on chronic hemodialysis, including a large burden of physical, emotional symptoms, pain, ED, and depression that are highly correlated with impaired QOL [26].

Furthermore, QOL is nowadays considered one of the main therapeutic goals in CKD patients needing dialysis to keep alive. One of the essential conditions to each a good QOL is the possibility of having satisfactory sexual activity [27]. Therefore, the nurses have to view of the individual as a complex blend of many parts is consistent with our holistic approach to nursing care. Nurses who care for people with physical illness ideally maintain a holistic view that involves an awareness of psychological, social, cultural and spiritual issues [28].

Nurses can use nursing process in determining and addressing the psychosexual problems of individuals. Nursing process occurs from four stages should be applied on psychosexual dysfunctions. Each stage is different but it also completes each other. These stages are assessment, planning, implementation and evaluation. In order to give effective and qualified psychosexual care to people, nurses working in accordance with nursing process play a key role in achieving success [29].

In other words, most courses of treatment for patients with co-morbid mental and physical problems or symptoms require a multi-faceted approach including: psycho-education, to convey to the patient the relevance of psychological factors; problem-solving and other supportive strategies such as motivational interviewing; specialist psychological therapies such as cognitive behavior therapy or interpersonal therapy; consideration of social, family and practical problems; and possible use of medication [30,31].

Additionally, training of hospital staff by liaison psychiatric nurses for a number of reasons; first, training improves the ability of hospital staff to identify mental health conditions. Second, training improves the quality of care provided by acute hospital staff. Third, training increases the overall capacity of the hospital to manage patients with co-morbid physical and mental health problems. Finally, training can help to integrate mental health care into routine hospital practice and promote awareness and understanding of mental health problems. Better knowledge of mental health conditions may help to reduce stigma and improve the experience of patients throughout their time in hospital [31].

Because of the high prevalence of sexual dysfunctions and psychiatric co-morbidity in hemodialysis patients, psychiatric liaison nurses have a key role to play in patient education, with particular reference to sexual dysfunction affecting QOL with conditions such as depression and anxiety. Therefore it is deemed necessary to conduct this study.

Aim of the Study

The study was conducted to assess the relationship between psychosexual dysfunctions experienced by hemodialysis male patients and their evaluation of their QoL.

Subjects and Methods

The study was carried out using a descriptive correlational research design at the hemodialysis units of Urology and Nephrology Center at Mansoura University. A convenient sample included all male patients on hemodialysis treatment at Urology, and Nephrology Center - Dialysis Units of Inpatient and Outpatient Clinics, Mansoura University Hospitals over a period of six months from the beginning of November 2013 till the beginning of May 2014. Sample size was 100 hemodialysis male patients who were corresponded the following inclusion criteria:

1. Male patients on hemodialysis not be the first session for the patient.
2. Both acute and chronic kidney disease.
3. Married before starting hemodialysis and still married after dialysis.
4. Aged 20-60 years.
5. Pre-morbid sexually active adult males.

6. Willing to voluntarily participate in the study.
7. Under treatment at the time of data collection.

Tools for data collection

In order to collect the necessary information for this study, four tools have been used. one tool were developed by the researcher and three tools were original standardized instruments. One of these standardized tools had to undergo some to link between both the psychological and sexual dysfunctions. In the following a brief description of these four tools.

Socio demographic and clinical data structured interview schedule

Is designed by the researcher in Arabic and English language to assess all related demographic and clinical data of the sample including: age, address, duration of marriage, number of children, level of education, duration of hemodialysis treatment and medical history.

Arizona sexual experience scale (ASEX)

This is a 4-point self rating scale developed to assess the pre-morbid healthy sexual functioning [32]. The ASEX was originally developed by them at University of Arizona to evaluate sexual dysfunction induced by psychotropic medications. The ASEX is a brief 5-items designed to measure individual's satisfaction with his/her sexual functioning with regard to the following 5 domains: Sexual Drive, Arousal, Penile Erection or Vaginal Lubrication, Reaching Orgasm, and Satisfaction with Orgasm. The original scoring system used 6 point Likert scale; this was changed to be a 4-point Likert scale. This items of satisfaction are rated according to: 1- (Very Satisfied), 2- (Slightly Satisfied), 3- (Slightly Dissatisfied) and 4- (Very Dissatisfied), with a total score ranging between 5 and 20 degrees. A total score > 12 is indicative of clinically significant sexual dysfunction. Translation to Arabic language and back translation were done. Cronbach's Alpha test is (0.84). Results from Cronbach's Alpha analysis indicated that the ASEX demonstrated excellent internal consistency and scale reliability (0.9055) [32]. To meet the inclusion criteria, any patient has significant sexual dysfunction before starting hemodialysis treatment, has been excluded from the study.

Psychosexual dysfunction questionnaire (Male-Version)

This questionnaire was originally developed under the name of Sexual Dysfunction Questionnaire (SDQ) to assess the presence of sexual problems and the associated personality traits in men and women by using the same assessment instrument [33]. In the current study this questionnaires modified by the researcher to assess the psychosexual functioning of the male patients after starting hemodialysis with new name is Psychosexual Dysfunction Questionnaire (Male-Version). The questionnaire consists of 19 questions about sexual functioning (desire, arousal, erection, maintenance of

erection and reaching orgasm) and psychological features. The researcher replaced items number 5, 7, 9, 11, 15, and 17 that aren't appropriate culturally for this study with items measuring (erectile functions, depression, anxiety, hopelessness and suicidal ideation). The original scoring system used 5 point Likert scale, this was changed to be a 4-point Likert scale: Always, Often, Sometimes, and Never. Subjects were required to fill the 19-item questionnaire based on their experiences after starting hemodialysis treatment sessions. Men with score ≥ 45 (the optimal cut-off score) have the risk to have psychosexual dysfunctions than those with scores ≤ 44 . Translation to Arabic language and back translation were done. Reliability has been done by the researcher for this tool (19 items). Cronbach's Alpha test is (0.81).

Quality of life index (QLI), Dialysis Version

This is a self-administered questionnaire developed by Carol Estwing Ferrans and Marjorie Powers in 1984 to measure QOL in terms of satisfaction with life [34]. QLI measures both satisfaction and importance regarding various aspects of life. In this study, QLI aims to assess the QOL among hemodialysis male patients with psychosexual dysfunctions; it is containing 68 items divided into two parts: Part 1 (Satisfaction; 34 items) and Part 2 (Importance; 34 items). Each item for both parts is ranked on a six point scale: 1 = Very Dissatisfied 2 = Moderately Dissatisfied, 3 = Slightly Dissatisfied, 4 = Slightly Satisfied, 5 = Moderately Satisfied, 6 = Very Satisfied. It is made up of 4 scales: (1) Health and Functioning Subscale, (2) Social and Economic Subscale, (3) Psychological/Spiritual Subscale, and (4) Family Subscale. The QLI is already in Arabic and English language. The reliability for this tool was done by using Cronbach's Alpha Test. Total QLI was 0.91. The four subscales had reliability of 0.81 for the health and functioning, 0.70 for socio-economic, 0.82 for psychosocial and spiritual, and 0.70 for family.

Scoring

The scoring scheme provides a score range from 0 to 30, with higher scores reflecting higher levels of QOL. A score for total QOL or each of the sub-scales may be calculated.

Methods

Official permission was obtained from the head of the hemodialysis department and from the head nurse at the three study settings to conduct the study. A verbal consent obtained from the respondents before their inclusion in the study. Nature and aim of the study was explained to each member of the participants. Each patient was individually interviewed to collect the necessary data in privacy. Ethical consideration was obtained from the Research Ethics Committee of the Faculty of Nursing – Mansoura University.

Statistical analysis

Data were analyzed with SPSS version 16. The normality of data was first tested with one-sample Kolmogorov-Smirnov test. Qualitative data were described using number and percent. Association

between categorical variables was tested using Chi-square test. When more than 25% of the cells have expected count less than 5, Fisher exact test was used. Continuous variables were presented as mean \pm SD (standard deviation) for parametric data and Median for non-parametric data. The two groups were compared with Student t test (parametric data) and Mann-Whitney test (non-parametric data). Analysis Of Variance (ANOVA test) used for comparison of means of more than two groups (parametric data) and Kruskal Wallis Test for comparison of means of more than two groups (non parametric data). Pearson correlation used for correlation between continuous parametric data while spearman correlation to correlate between continuous non-parametric data.

Level of significance

For all above mentioned statistical tests done, the threshold of significance is fixed at 5% level (p-value).

Results

In relation to the socio-demographic data of the study sample, results demonstrate that more than two thirds of the study sample (67%) age 30 to 49 years old, As regard the residence, more than half of the study sample (55%) are living in rural areas while (45%) are living in urban. In relation to the marriage duration, two fifth of the study sample (40%) are married for 5 to 15 years. Concerning the educational level, more than half of the study sample (59%) is middle educated (Table 1).

Item	Number	%
Age in years		
20 - (< 30)	5	5
30 - (< 40)	30	30
40 - (< 50)	37	37
50-60	28	28
Residence		
Rural	55	55
Urban	45	45
Marriage Duration in years		
< 5 years	14	14
5 - (< 15)	40	40
15-25	29	29
> 25	17	17
Educational Level		
Illiterate	9	9
Non-educated (Read and write)	12	12
Middle education	59	59
High education	20	20

Table 1: Socio-demographic characteristics of the studied sample (n=100).

Regarding the clinical data, more than half of the study sample (62%) undergoes hemodialysis for more than 3 years. As regard the hemodialysis co-morbidity, more than half of the study sample (58%) suffers from medical disease while (42%) are medically free (Table 2).

Item	Number	%
Hemodialysis duration in years		
< Year	16	16
1 - (< 3) years	22	22
3-6 years	33	33
> 6 years	29	29
Hemodialysis Co-morbidity		
Free	42	42
Endocrinal (Diabetes Mellitus and thyroid diseases)	15	15
Circulatory (Hypertension and cardiac diseases)	12	12
Hepatitis (B or C)	25	25
Others (Osteoporosis, rheumatoid arthritis)	6	6

Table 2: Clinical data of the studied sample (n=100).

Concerning the psychosexual dysfunction score, the findings reveal that the vast majority of the study sample (94%) complains of psychosexual dysfunctions while only 6% expressed good psychosexual functions (Table 3).

Psychosexual Dysfunctions		Good Psychosexual Functioning	
Number	%	Number	%
94	94	6	6

Table 3: Frequency and percentage distribution of the studied sample with regard to Psychosexual Dysfunctions (n=100).

On the part of physical symptoms, fatigue, difficulty in reaching orgasm, difficulty in keeping erection, low sexual desire, impaired sexual arousal and difficulty in beginning erection are the most common physical symptoms expressed by the studied sample with mean of (3.76), (3.34), (3.32), (3.31), (3.29) and (3.14) out of a possible score of (4) respectively (Table 4).

On the part of psychological symptoms, low self-esteem during sexual intercourse, sexual dissatisfaction and feeling inhibited towards sex are the most common psychological symptoms expressed by the studied sample with mean of (3.45), (3.3) and (3.28) out of a possible score of (4) respectively while symptoms; loss of hope, anxiety and fear of sex, blaming self for sexual failure and depressed mood are moderately expressed by the studied sample with mean of (2.93), (2.84), (2.74) and (2.66) respectively. Suicidal ideation was the lowest prevalent psychological symptom with mean of (1.1) (Table 5).

Symptoms of Psychosexual Dysfunctions (Physical symptoms)	Mean ± SD	Median	Range
Fatigue	3.76 ± 0.49	4	1- 4
Doesn't like talking about sex before intercourse	3.35 ± 0.74	3	1- 4
Difficulty in reaching orgasm	3.34 ± 0.69	3	1- 4
Difficulty in keeping erection	3.32 ± 0.78	3	1- 4
Low sexual desire	3.31 ± 0.72	3	1- 4
Impaired sexual arousal	3.29 ± 0.75	3	1- 4
Inhibition toward sex	3.28 ± 0.76	3	1- 4
Difficulty in beginning erection	3.14 ± 0.66	3	1- 4

Table 4: Physical symptoms of Psychosexual Dysfunctions of the studied sample (n=100).

Symptoms of Psychosexual Dysfunctions (Physical symptoms)	Mean ± SD	Median	Range
Psychosexual discomfort	3.81 ± 4.12	4	1- 4
Low self-esteem during sex	3.45 ± 0.74	4	1- 4
Sexual dissatisfaction	3.3 ± 0.93	4	1- 4
Decrease sexual Fantasies	3.29 ± 0.72	3	1- 4
Doesn't express feeling with wife	2.99 ± 0.92	3	1- 4
Loss of hope	2.93 ± 0.90	3	1- 4
Anxiety, and fear of sex	2.84 ± 0.92	3	1- 4
Blaming self for sexual failure	2.74 ± 1.08	3	1- 4
Depressed Mood	2.66 ± 0.97	3	1- 4
Losing interest	2.11 ± 0.87	2	1- 4
Suicidal ideation	1.1 ± 0.33	1	1- 3

Table 5: Psychological symptoms of Psychosexual Dysfunctions of the studied sample (n=100).

Concerning the QOL score, our results show that, the study sample have lower scores of overall QOL with mean of 16.21 (SD = 3.74) out of a possible score of 30. The health and functioning domain is the lowest rated domain (Mean 13.28, SD = 4.01), followed by the psychological/ spiritual domain (M = 13.73, SD = 4.8), followed by socioeconomic domain (M = 18.7, SD = 4.63). The family QOL domain is the only domain that affected a little and has the highest scores (M = 24.53, SD = 4.25) (Table 6).

Our results demonstrate that, there are negative statistically significant correlations between the psychosexual dysfunction score and (overall QOL (P ≤ 0.001), health and functioning domain (P ≤ 0.001), psychological/ spiritual domain (P ≤ 0.001), socioeconomic domain (P = 0.014) and family domain (P = 0.002) (Table 7).

Items	Mean ± SD	Median	Range
Health and functioning QOL domain	13.28 ± 4.01	12.46	4.38-25.46
Psychological/spiritual QOL domain	13.73 ± 4.8	12.85	4.29-24.86
Social and economic QOL domain	18.7 ± 4.63	18.34	6-28.43
Family QOL domain	24.53 ± 4.25	20.2	9-30
Overall QOL	16.21 ± 3.74	15.44	8.81-26.19

Table 6: The mean of overall QOL score and QOL domains of the studied sample (n=100).

Items	Psychosexual Dysfunction	
	r	P
Overall QOL score	-0.498	≤0.001* (S)
Health and functioning QOL	-0.607	≤0.001* (S)
Psychological/spiritual QOL	-0.441	≤0.001* (S)
Social and economic QOL	-0.246	0.014 (S)
Family QOL	-0.310	0.002 (S)

Table 7: Correlation analysis between Psychosexual Dysfunction and QOL.

Discussion

Sexual health is an important component to a hemodialysis patient's overall QOL. Liaison nurse can provide supportive and confidential counseling to hemodialysis patients and their partners who require help with intimacy and sexuality with a thorough assessment and differential diagnosis before addressing psychological and sexual issues [35].

Several definitions have been proposed for sexual dysfunction according to its different causes (endocrinological, urological, psychological and neurological). Psychosexual dysfunctions are "all disturbances of one or more stages of the sexual response caused by psychological factors rather than physical factors that results in a disturbance of the patient's sexual and psychological life" [10]. The prevalence of sexual dysfunction among patients with CKD was first studied in 1973 when Levy conducted the first epidemiological survey of sexuality in patients with CKD as cited in Al Khal-laf [36].

The current study documents that the vast majority of the study sample (94%) complain of psychosexual dysfunctions while only 6% expressed good psychosexual functions (Table 3). These findings are attributed to the high prevalence of psychosexual dysfunctions among hemodialysis male patients. Reasons given for this high prevalence of psychosexual dysfunctions were claimed to be

due to increased stress, depression and anxiety, drugs, diet, anemia, insomnia, insufficient hemodialysis, uremia, and hormonal change. Successful dialysis improves most symptoms of CKD, yet many patients continue to experience many forms of sexual dysfunction during dialysis treatment.

This finding is closer to a study [37] conducted in Morocco which reported that 81% of hemodialysis patients suffered from a decrease in sexual activity after the onset of hemodialysis treatment. Additionally, Doss and Polaschek [38] found that 78% of patient in New Zeal reported some degree of sexual dysfunctions, despite being medically stable, and adequately dialyzed, having no significant anemia, and only mild inflammation. In other words, the incidence rate of sexual dysfunction reported to be 9% before the initiation of hemodialysis and increases to 60%-70% during hemodialysis treatment [39].

The prevalence of psychosexual dysfunction of the current study result (94%) is higher than the other studies because the current study doesn't focus on the physical functions solely, but evaluate both physical and psychological functions together in one questionnaire. In addition, most of studies that conducted on male hemodialysis patients focus on ED not on sexual dysfunction as a general.

On the part of physical functions, the current study shows that fatigue, difficulty in reaching orgasm, difficulty in keeping erection, low sexual desire, impaired sexual arousal and difficulty in beginning erection are the most common symptoms expressed by the studied sample (Table 4).

These physical symptoms may be due to organic causes affected CKD patients such as decreased arterial blood flow, venous leakage due to shunts, altered penile smooth muscle function, hormonal disturbances, side effect of medications, and neurogenic dysfunction, or may be due to psychological factors such as depression, and anxiety [40]. These sexual dysfunctions can erode one's sense of self-esteem, and lead to emotional, and marital tension, so it has great impact on the psychological state of the patients who become more stressed and more anxious.

This result is consistent with a recent study [41] in Jamaica which reported that ED, desire disorder and orgasmic disorder were found respectively in 91.4%, 88.3%, and 81.6% of male subjects indicating that the majority of male patients were dissatisfied with their performance at intercourse after progressing to CKD. In addition, several studies focused on the prevalence of ED among hemodialysis patients. In Egypt the prevalence of ED in hemodialysis patients is (86%) [13]. The similar prevalence of ED was observed internationally in Iran [42] (87.5%), and in Brazil [43] (86.4%).

On the part of psychological symptoms expressed by the studies sample, the current study shows that there are many psychological symptoms expressed by the studies sample. Most of them expressed low self-esteem during sexual intercourse, not satisfying with their sexual functions and feeling inhibited towards sex while symptoms; loss of hope, anxiety and fear of sex, blaming self for sexual failure and depressed mood are moderately expressed by the studied sample. Suicidal ideation was the lowest prevalent psychological symptom (Table 5).

Most probably, these psychological symptoms are more specific due to sexual dysfunctions not to other stressors of hemodialysis. Nonetheless, it is also noted that hemodialysis patients expressed psychological symptoms related to other stressors and complications of hemodialysis such as sleep abnormalities, fluid loss, job loss, the cost of treatment, lifestyle change, time wasted, symptom-related suffering, and marital and family role disruption [44]. The presence of anxiety and depression could be explained by the fact that these patients tend to distort their appraisal of sexual problems due to negative expectations and feelings of hopelessness, helplessness, and low self-esteem. Suicidal ideation was the lowest prevalent psychological symptom because Egyptian people have strong religious beliefs. Religious beliefs are protective factors of suicide risk among hemodialysis patients [45]. All such of these psychological symptoms produce difficulties in maintaining adequate sexual relationships. Social withdrawal further impairs the ability to form, and maintain intimate relationships.

These results are consistent with Charnow [46] who stated that the strongest predictor of sexual dysfunctions were depressive symptoms. Sexual dysfunctions were 2.4 times more likely to occur in hemodialysis male patients with depressive symptoms than in those without these symptoms. Moreover, the rates of depression are 26% in sexual dysfunctional hemodialysis patients [47]. The rate of anxiety disorders (27%) was somewhat higher than the expected rate (18%) on the basis of the "The Structured Clinical Interview for DSM-IV". These rates indicate that sexual dysfunctions are strongly associated with psychological state of hemodialysis patients.

In other words, Čengić and Resić [48] in Bosnia and Herzegovina reported that the most psychological symptoms emphasized were: anhedonia (84.5%), pessimism (74.5%), low self-esteem (64%), anxiety (63.5%), indecisiveness (51.5%), irritability (43%), depressive mood (41.5%), feeling unsuccessful (35.5%), reduced concentration (35%), self-criticism (22%), feeling of punishment (19.5%), feelings of guilt (18%), and suicidal ideation (11%).

Regarding suicidal ideation, the risk of death rate from suicide was 0.24% per 1000 dialysis patients/years, and patients with

CKD significantly have higher rates of suicide compared with the general population in the United States [49]. Another study reported that among 200 hemodialysis patients, 21.5% had suicidal ideation; 3.5% had planned a suicide attempt in prior months; and 3.5% had attempted suicide during their lifetime [50].

The results of this study show that, the mean of overall QOL was (16.21) out of a possible score of 30. The health and functioning domain and the psychological/ spiritual domain were the lowest rated domains with mean of (13.28) and (13.73) respectively followed by the socioeconomic domain with mean of (18.7), while the family domain has the highest scores with mean of (24.53).

These results indicate that, the study sample have lower scores of overall QOL and all domains of QOL comparing with other studies using the same tool (QLI). Ferrans and Powers [34] reported that the mean score for a group of healthy persons using the general population version of the same instrument was 21.9 but in hemodialysis patients they found that, the mean score of overall QOL was (20.7), health and functioning domain was (18.64), social and economic domain was (21.29), psychological/Spiritual domain was (21.60) and family domain was (25.25). Additionally, Ayoub, et al. [51] reported that, the mean score of overall QOL in hemodialysis patients was (23.18), health and functioning domain was (21.59), social and economic domain was (23.13), psychological/Spiritual domain was (24.26) and family domain was (26.33).

The previous results indicate that, on the part of physical QOL domain, patients not satisfy with their health, sexual life, general life and unable to take care of their responsibilities and achieve their personal goals. While the family QOL domain; relationships among children/spouses/significant others and family's happiness are both the most satisfying and most important. This indicates that, these patients are more satisfied with the things that they valued in the family domain than in the other three domains. According to the researcher point of view, one's family often provides the emotional as well as the physical support to adjust and cope with CKD and psychosexual dysfunctions, whereas most of the negative attributes of living with this chronic illness falls in the health and functioning domain, i.e. dietary changes, treatment regimen, physical changes, usefulness to others, physical independence, control over own life and sexual life. This is an area of one's life that patient has very little control. Therefore, it was no surprise that the family domain ranked higher than the health and functioning domain.

Concerning the psychological and spiritual domain (satisfaction with life, self, faith in God, personal goals), mean scores are lower for hemodialysis patients, which indicate that participants are poorly satisfied with what was important to them in this domain. This leads to the last domain: social and economic (standard

of living, financial independence, job, friends). Regarding the social aspects of this domain, a diagnosis of CKD is life changing, and being placed on as hemodialysis and has psychosexual dysfunctions are other barriers to living with this chronic illness. Social support (neighbors, friends) is significant to hemodialysis patients adjusting to treatment and increasing their survival.

The current study indicates that, there is highly statistically significant negative correlation between psychosexual dysfunctions and (overall QOL and all domains of QOL) which refers to QOL decreases with increasing psychosexual dysfunctions. In our country, according to social and cultural characteristics a man's sense of masculinity may be altered and may affect their ability to carry out typical gender roles such as the ability to earn a living, or conceive and raise children. Therefore, sexual dysfunction profoundly affects QOL in hemodialysis patients because it is associated with anxiety, loss of self-confidence and self-esteem, poor self-image, and marital discord.

Several studies are supported our results and emphasized that, sexual dysfunction in hemodialysis male patients is associated with many psychosocial problems such as decreased QOL, low self-esteem, depression, anxiety, relationship problems, and marital tension [52]. Accordingly, it is undeniable that psychosexual dysfunctions has a strong impact on QOL [53]. In other words, Hedayati, et al. [54] added that, the changes in the patients functioning and physical abilities as sexual functions due to illness symptoms affected their physical abilities have been recognized as factors contributed to depression.

In other studies that evaluate psychological state of hemodialysis patients regardless their sexual activity, Mollaoglu [55] found that, two thirds of hemodialysis patients in Turkey had depression and found that, the higher depression scores associated with the lower QOL scores. Recently, Nabolsi, et al. [56] found that, more than 50% of patients in the current study reported moderate to severe depression and there was a negative correlation between depression and QOL.

Conclusion

Psychosexual dysfunctions are sexual dysfunctions that caused by psychological problems or lead to psychological problems. Anyway, psychosexual dysfunctions are very common among hemodialysis male patients and have negative impact on all aspects of QOL. Hemodialysis male patients with high scores psychosexual dysfunctions have low scores of QOL and its domains (health and functioning, social and economic, psychological/Spiritual domain and family domains).

Recommendation

The study recommends that, psychiatric liaison nursing programs should be planned in hemodialysis units to educate nursing staff about how to manage psychosexual dysfunctions and how to improve their QOL. In addition Liaison psychiatric nurse should be available in hemodialysis units to deal with the psychiatric problems of these patients with chronic hemodialysis.

Limitations

Some patients refused to participate in the study. They avoid talking about their psychosexual dysfunctions because of feelings of shame or because of their several failed tries to manage it.

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