Original Article

Factors Affecting Quality of Life among Patients Undergoing Hemodialysis Program in Gaza Strip

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Abstract

Background: Hemodialysis (HD) is one of the treatment modalities for end stage renal disease patients (ESRD). ESRD and dialysis affects the daily lives of many patients and families confronted by changes in health status, lifestyles, and roles, leading to impaired Quality of life.
Objective: This study aimed to examine quality of life and affecting factors among patients undergoing hemodialysis.
Methods: A descriptive cross-sectional design was employed. A sample of 93 adult male and female patients undergoing HD were purposefully selected from kidney dialysis unit at El-Shifa hospital in Gaza Strip using the kidney disease quality of life short form (KDQoL- SF) version 1.3.
Results: Finding of this study indicated that, QoL of patients undergoing HD was significantly impaired. Numerous clinical and demographic factors were found to have a statistically significance difference with QoL dimensions, such as gender, occupation, income, but the most powerful predictors of impaired QoL are physical and psychosocial factors.
Conclusion: The result of this study concluded that the factors affecting QoL for those patients were age, sex, occupations, marital status, type of work, socioeconomic status, residence and educational level. The highly affected dimensions of satisfaction are the spiritual; and overall health dimension, while the least affected dimensions of satisfaction are the physical and psychosocial quality of life.

Keywords: End Stage Renal Disease, quality of life, hemodialysis, physical and psychosocial factors.

Introduction

End stage renal diseases (ESRD) Is defined as the loss of renal function characterized by less than 20 percent of the normal glomerular filtration rate (GFR). About two thirds of patients who will eventually reach ESRD, they have progressive renal failure. The early manifestations are nausea, apathy, weakness and fatigue. The progress in uremic complications occurs late and are frequent vomiting, restlessness and convulsion, pale and dry skin, as well as Kussmaul pattern respiration, with deep coma. The ESRD requires dialysis, either peritoneal dialysis or hemodialysis (Mahan et al., 2012) Hemodialysis (HD) is a medical treatment in which the blood is removed from the body and run through a filter to remove waste products before being returned to the body. This treatment is commonly used to treat people who are experiencing kidney failure, as normally the kidneys perform this function. Depending on the patient and the situation, hemodialysis may be performed on an emergency or long-term basis (Poch, 2012). QoL is important as an outcome measurement, especially for long-term diseases such as chronic renal failure (CRF), sometimes reducing or limiting the social levels (Bohlke et al., 2008). Although advances in dialysis treatment have contributed to improved survival of patients with ESRD, QoL is much lower for those patients than for the general population (El hamed et al., 2011). Nurses play a vital role in improving the life of the patients. It is essential that nurses identify areas of patient treatment regimens which may be adversely affecting the patient's QoL and develop strategies to reduce them (Santos, 2011). Nurses should always

follow-up with the relevant health professional and discuss the patient outcomes from the referral. The psychiatrist and psychologist may help patients undergoing HD to improve their QoL by providing new coping strategies for each of the families, occupational, and social network (DePasquale, 2012).

Significance of Problem: Currently, there are about 428 patients who are maintained on regular hemodialysis in Gaza strip, about 240 patients are in the hemodialysis unit at Al-Shifa hospital governorate in Gaza Strip, which have 36 hemodialysis machines (Ministry of Health 2013)**.**

ESRD is one of the life threating diseases affecting the mankind, as the incidence of this illness is increasing and also the mortality rate among the affected patients. ESRD occupied the seventh place of death. and was accounted for 23%. It was observed that a large number of ESRD patients were admitted to the hemodialysis unit.

The Aim of the study: is to assess factors that affecting quality of life among patients undergoing Hemodialysis, through the following;

• Identify the factors affecting quality of life among patients undergoing hemodialysis.

• Assess the effect of quality of life dimensions (physical, psychological, social, and spiritual) on patients undergoing Hemodialysis.

Materials and methods:

This a descriptive exploratory design, the current study was carried out at Hemodialysis units in Gaza Strip at El-Shifa hospital governorate. Which is considered the biggest dialysis center in Gaza Strip with 45 machines and more than 345 patients. A Purposive sample of 93 Patients were selected according to specific inclusion and exclusion criteria: The inclusion criteria for patient were: Conscious adult male and female patients, age 19-59 years old as the most common age in dialysis unit, diagnosed with ESRD, Hypertensive patient due to diagnosis ESRD and receiving maintenance HD for > 12 months. Total of patients in dialysis unit at El-Shifa hospital 345 but after excluded criteria in our study the target group become 116 patients. Exclusion criteria: Patients with recognized diabetic, hypertension, liver cirrhosis, HBV, HCV and under 19 or above 59 years old were excluded. **Tools of Data Collection**: Two tools were utilized to collect data pertinent to the current study. The first tool was structured interviewing questionnaire, and the second one was Kidney disease quality of life short form (KDQoL-SF ™) version 1.3. (1997) (Hays 1997).

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1- Structure interviewing questionnaire tool. It was developed by the researcher and reviewed by a panel of five expert professors in medical surgical nursing specialty to establish face and content validity, and then piloted by the investigator. where reliability was established; Alpha Cronbach coefficients = 0.893. This tool consisted of two parts:

Part I: patient's demographic data. This part covering-patient's age, sex, marital status, educational level, place of residence, type of home, monthly income, employment status and family members living with the patient. As well that part including patient information about his/her illness, treatments, prognosis and future plan.

Part II: patient's medical history. This part covering-patient's past and present history of the disease, duration on hemodialysis and number of session/weeks, duration of session, and complications.

2- Kidney disease quality of life short form (KDQoL- SF™) version 1.3. (1997). It was developed and validated by (Hays 1997) to measure QoL and the burden of disease for patients with ESRD; in our study it was adapted and modified by the researcher as the tool did not involve the spiritual dimension of the QoL so it was adapted from Cardiac Quality of Life questionnaire tool (Padilla, Grant & Ferrell, 1992). and SF-36 adapted from (Ware, 2000). The tool translated into Arabic language and back translated to make sure of accuracy. Each item (or question) is scored and then converted into a 0 to 100 scale, where 0 indicates the worst QoL and 100 the best QoL. Internal consistency reliability for the KDQoL- SF™ was done using Alpha- cronbach coefficients = 0.893, this means that Arabic version of this questionnaire is reliable tool for use on Palestinian patients with CKD. Content validity of the translated tool was reviewed by a panel of five expert professors in medical surgical nursing specialty at Ain Shams University. The tool consisted of four main parts:

Part I - ESRD-targeted areas. It includes eleven scales (42 items) that relate to the kidney diseases which are: symptom/problems list (12 item), effects of kidney disease (8 items), burden of kidney disease (4 items), work status (2 items), cognitive function and quality of social interaction (6 items), sexual function (2 items), sleep (3 items), social support (2 items), dialysis staff encouragement (2 items) and patient satisfaction (1 item). These 11 subscales (items) make kidney disease component summary (KDCS).

Part II- 36-item health survey (SF-36). It includes eight scales which are Physical functioning. Physical role, Pain, General health, Emotional role, Social function; Vitality (energy/fatigue) and mental health (emotional well-being). These 8 subscales (items) make two components "physical component summary" (PCS) and mental component summary (MCS).

Part III- Overall health rating item. Patients were asked to rate their health on a 0-10 response scale ranging from "worst possible health" to "best possible health".

Part IV- Spiritual Health: It includes (4 items) about spirituality, religious activities as praying- read the Koran- Fasting.

Scoring system: Level of satisfaction: Satisfied with care < 60 %

Unsatisfied with care > 60 %

Tools of validity and reliability:

- Validity:

An opinionnaire tool was developed by researcher to assess face and content validity of the translated tools was reviewed by a panel of five expert professors in medical surgical nursing specialty at Ain Shams University based on the expertise opinion, the spiritual part was added to the questionnaire tools (Padilla, Grant & Ferrell, 1992).

- Reliability:

Estimates for the eight scales of the 36-item health survey were also quite acceptable and ranged from 0.78 to 0.92 for the original tools It was developed and validated by (Hays 1997).

The reliability of the developed tool was estimated by the Alpha- cronbach coefficients = 0.893.

- **Ethical considerations:** the present study was submitted to and approved by the Research Ethics Committee of the Faculty of Nursing – Ain Shams University, and in Gaza Strip permissions to conduct the study were obtained from the MoH officials and Hemodialysis Patients.

Statistical Analysis: Data were analyzed using Statistical Package for Social Science (SPSS) version 20.0. Quantitative data were expressed as frequency and percentage mean± standard deviation (SD). Qualitative data were expressed as Chi-square (X2) test of significance which was used in order to compare proportions between two qualitative parameters.

Probability (P-value)

- P-value <0.05 was considered significant.
- P-value <0.001 was considered as highly significant.
- P-value >0.05 was considered insignificant.

Results:

The mean age of the studied patients was (42.67±7.29). Percentage of females (54.7%) was higher than male, living in city areas (75.27%) and having (34.41%) seven to ten members in their families. Patients stated (77.42%) that they have no sufficient income (less than 100 dollars monthly). The studied patients were married (67.74%), they are on secondary level of education (52.69%). Before illness patients were

employed (68.82%), but after illness they were not working (84.95%).

The (90.3%) of study patients had a problem of chronic renal failure and started more than 1 year. As regards to their hemodialysis therapy length is more than 1 year (48.3%),patients have three time hemodialysis sessions per week were (73.12%),they used to go with a family member to the center of hemodialysis (64.5%).They were using public transportation to go to the center (81.7%), they were suffering from complications of dialysis or intravenous access (67.7),people that committed to the schedule for dialysis (90.3%), did not commit to the exact diet(70.9%). Patients know the medications they are taking or great names be used (86%), they take their treatment in specific appointments and enough described doses accurately prescribed (76.3%).

Table 1. shows that (79.5%) of patients under study were satisfied level of symptoms/problems, the effects of kidney disease on daily life were satisfied level (62.3%) of patients under study, burden of kidney disease was satisfied level (75.2%) of patients under study, Patients' level of satisfaction of cognitive function & quality of social interaction were (63.4%), Patients satisfied level of sexual function was (90.3%), People satisfied of sleep pattern was (75.2%), they're satisfied with health team encouragement in hemodialysis unit were (90.3%).

Table 2. shows that, (36.5%) of the patients under study had reported satisfied level of problems related to psychological health (emotional well-being), (40.8%) of them had reported satisfied level with emotional role, (18.2%) of them have satisfied level of social activities and (46.2%) of them satisfied level with vitality (energy and fatigue)Figure 1. Frequency and percentage distribution of overall health rating satisfaction level of the patients under study(n=93).

Table 1. Frequency and percentage distribution of kidney disease quality of life satisfaction level of the patients under study (n=93)

Kidney Disease Quality of Life (KDQoL)	Satisfaction level	
	No.	%
Symptoms/problems	74	79.57
Effects of kidney disease on daily life	58	62.37
Burden of kidney disease	70	75.27
Work status	31	33.33
Cognitive function & quality of social interaction	59	63.44
Sexual function	84	90.32
Sleep pattern	70	75.27
Social support	48	51.61
Health team encouragement in hemodialysis unit	84	90.32
Level of patient satisfaction with care	41	44.08

Table 2. Frequency and percentage distribution of psychosocial satisfaction level of the patients under study (n=93)

Mental* Component Summary (MCS)	Satisfaction level	
	No.	%
Problems related to Psychological Health (emotional well-being)	34	36.56
Emotional role	38	40.86
Social activities	17	18.28
Vitality (energy and fatigue)	43	46.24

***Mental components = psychosocial factors.**

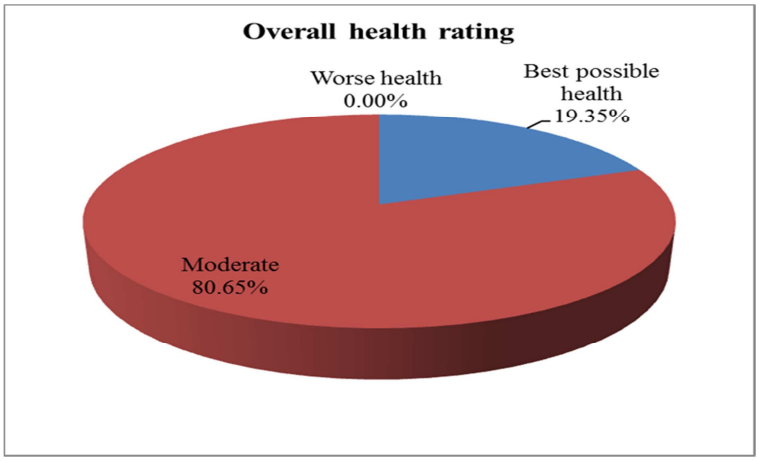

Figure 1. shows that, the majority of the patients under study (80.6%) get moderate level of satisfaction regarding the overall health rating, while only (19.35%) get the best possible health level.

Table 3. Unsatisfaction level among the all components

QoL dimensions	Un satisfied	%
KDQoL*	42	45.1%
PCS*	91	97.8%
MCS*	76	81.7%
Spiritual	16	17.2%
Overall health rating	75	80.6%

KDQoL*: Kidney Disease Quality of Life; **MCS*:** Mental Component Summary**; PCS*:** Physical Component Summary**.**

Table 4. Relation between Age, Education level, Employment status now and overall health rating satisfaction level (n=93)

Demographic data	Overall health rating				Chi-square test	
	Unsatisfaction		Satisfaction			
	No.	%	No.	%	X^2	P
Age (years)						
19 >34	26	34.7%	12	66.7%		
>34-49	23	30.7%	3	16.7%	6.164	**0.046***
>49-59	26	34.7%	3	16.7%		
Education level						
Illiterate/ primary	20	26.7%	1	5.6%		
Secondary	40	53.3%	9	50.0%	6.403	**0.041***
University	15	20.0%	8	44.4%		
Employment Status now						
Working full-time	0	0.0%	1	5.6%		
Working Part-time	9	12.0%	4	22.2%	5.677	**0.059***
Unemployed, Laid off	66	88.0%	13	72.2%		

* Statistically significance p < 0. 05

Table 5. Relation between patients Age, number of persons, live with the patient in his household and KDQoL satisfaction level (n=93)

Demographic data	Kidney Disease Quality of Life				Chi-square test	
	Unsatisfaction		Satisfaction			
	No.	%	No.	%	X^2	P
Age (years)						
19 >34	20	37.6%	18	35.3%		
>34-49	4	9.5%	22	43.1%	13.512	**0.001***
>49-59	18	42.9%	12	21.6%		
How many persons live in your household including yourself?						
One to three	5	11.9%	9	17.6%		
Four to six	12	28.6%	17	33.3%	7.149	**0.057***
Seven to ten	14	33.3%	18	35%		
More than ten	11	26.2%	7	41.2%		

*** Statistically significance** p < 0. 05

Table 3. shows that, the highest level (97.8%) of unsatisfaction were among the PCS dimension and the lowest level (17.2 %) was regarding the spiritual dimension among the patients under study. Table 4. illustrates statistically significant relation among age, education level and employment Status now of the patients under study with their overall health rating at $p < 0.05$. While there was a statistically in significant difference between all the others demographic data of the patients under study. Table 5. illustrates statistically significant relation between both age and number of persons, live with the patient in his household with their KDQoL at $p < 0.05$, While there was a statistically insignificant difference between all the others demographic data of the patients under study.

Discussion:

To our knowledge, this is the first report to the quality of life characteristics for patients with end stage of renal failure and factors affecting QOL among patients undergoing HD program in Gaza Strip. In the present study that, the majority of subjects, age ranged between 19-34 years, with a mean age of 42.61±12.68. Regarding gender, the current study demonstrated that more than half of the patients under study were females, Also, the highest percentage two third of them were married. In this respect, (Palestinian Renal Registry 2013) stated that the mean age of chronic kidney disease (CKD) is 43.8±19 years. Conversely, (Palestinian Renal Registry 2015) reported that the 296 patients from males, while 261 patients from females**.**

Quality of life characteristics for patients with a Kidney disease quality of life (KDQoL) and factors affecting it: The finding of the current study showed that more than two third of patients under study have a sleeping pattern, this finding incongruent with (Krause 2015) who stated that sleep disturbances are very common in patients undergoing HD, it occurs in up to 40%-80% and range from insomnia and sleep apnea to restless leg syndrome. Problems falling asleep or staying asleep, fluent awakenings, daytime fatigue, and unplanned naps are frequently reported by dialysis patients, leading to daytime sleepiness and decreased mental activity, thus negatively influencing the ability of ESRD patients to function normal lives. Indeed, poor sleep is itself a predictor of mortality and QoL (Jaar, Chang & Plantinga 2013).

The study result revealed that, there was a positive effect of satisfaction level regarding health team performance in hemodialysis unit, level of services offered, the handling of their problems & relation of the team to their families. Similar results have been reported by (Zhang, Cotter & Thamer 2011)**,** who stated that, there was a high effect of patients' satisfaction regarding health team performance in hemodialysis unit. There was a negative effect of patients' satisfaction with care, In contrast with the study finding of (Hibbardet al., 2017)**,** who indicated that improving competent level of nurses and health care system can provide more satisfaction for the patients.

Relation between patients age and number of persons, live with the patient in his household regarding factors affecting of kidney disease quality of life (KDQoL) dimensions: The finding of the current study showed that the majority of patients under study ranged from 19-59 year old. This finding is congruent with (Halit, Hakan & Güney 2012)**,** who stated that patients ranged from 20- 60 year old are satisfied with KDQoL. It was notice during the present study that the patients ranged from 34-49 year old were more satisfied and adapted enough with their kidney disease due to interesting and caring themselves carefully. There are a significant relation between a family size (more than ten) had and satisfaction with KDQoL. Also, more than two third of them had low income monthly. Similar results have been reported by (Lessan-Pezeshki & Rostami 2009; Guerra-Guerrero, Sanhueza-Alvarado & Cáceres-Espina 2012) stated that monthly economic revenues of the participants were less than 5,000 Chilean pesos, equivalent to less than 200 dollars per month.

Relation between demographic data for patients with physical and mental component summary and factors affecting both of them: (Cruz et al., 2011) indicated that there was a negative relation between the age groups in relation to the mean PCS and a positive relation with the mean MCS scores. (Germin-Petrović et al., 2011) stated that age had a negative effect on both PCS and MCS.As apparent from the present study, there was statistically significant difference between employment status (before the illness) and physical of the patients under

study with satisfied level, There is a higher mean affection of physical dimension among patients unemployed patients. The same finding was reported by (Sathvik et al., 2008) who concluded that there was a significant difference between QoL dimensions in physical health, and psychological health of HD patients with different employment status. Also, (Shafipour et al., 2010) revealed that QoL in different employment condition has statistically significant difference with QoL dimensions. Finally, (Guerra-Guerrero, Sanhueza-Alvarado & Cáceres-Espina 2012) summarized that inactive or unemployed people with low income levels showed an inferior QoL than people who were active or employed.

As indicated from the current study, there was a statistical insignificant difference between male and female gender in relation to PCS, MCS score. These findings are in contrast with (Theofilou 2012) who reported that gender seems to have in relation to the psychological dimension. Also, (Santos 2011) reveals that men have worst QoL than women. Furthermore, (Braga et al., 2011) proved that women on HD generally had higher QoL than men due to factors other than clinical ones including difficulty coping with kidney disease.

In Gaza strip, regarding employment status now there are no chances of works because of disease itself, economics siege, low socioeconomic status, extended family and Israeli occupation in addition to recurrent attack of war.

Relation between patients' age, educational level and employed status now with overall health rating and factors affecting it: Results of the current study demonstrated that, there was a statistical significant difference between levels of education in relation to overall health rating, while there was no statistical significant difference between KDQoL, PCS & MCS score. This result is in agreement with that reported by (Lessan-Pezeshki & Rostami 2009) who reported that higher educational level was not significantly associated with higher QoL components except for KDCS. The finding was contraindicated by (Seica et al., 2008) who showed a lower educational level was associated with better PCS scores in hemodialysis patients. Similarly, (Pakpour et al., 2010) recorded that there was a significant association between the level of education attained and MCS. The possible explanation is that lower educational level is usually associated with lower income and, as a consequence, with lower QoL. (Cruz et al., 2011) stated that patients who had a higher educational level performed better than the others in mean PCS. My opinion that the more educated level of patients, the best overall health rating due to more information and knowledge they have to deal with their disease.

The overall health rating of employed status now patient understudy, was substantially better than that of the retired and the unemployed, laid off. Employed patients scored better in their physical, psychological health dimension. The findings of our study are consistent with those of other studies that reported better QOL scores in employed patients in the physical functioning, mental health, and social functioning domains, (Odden, 2010). Employment has been found to be a vital factor in improving the QOL of ESRD patients. However, a study conducted by (Lee & Jeon, 2016) did not find any difference in the QOL of employed and unemployed hemodialysis subjects.

Patients were satisfied and interested during data collection in addition to their cooperation to complete the current study and result exists, regarding health services 60% of patients were unsatisfied because of shortage of equipment e.g. dialysis solution (dialysate), hemodialysis vascular access and multiple of gauges based on the needs patients and obstacles caused by Israeli occupation.

Conclusion: The result of this study concluded that the factors affecting QoL for those patients were age, sex, occupations, marital status, type of work, socioeconomic status, residence and educational level. The highly affected dimensions of satisfaction are the spiritual and overall health of the quality of life of patients undergoing hemodialysis program, while the least affected dimensions of satisfaction are the physical and psychosocial quality of life.

In conclusion, we recommend the apply this research on a larger number of patients, to identify and evaluate more other factors not analyzed in this study which may affecting QoL for patients with ESRD such as: coping behaviours, quality of care received. In addition, Comparative study between quality of life among patients undergoing hemodialysis in Egypt and Palestine.

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