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A Systematic Review on the Quality of Life among Hemodialysis Patients in the Middle East Countries

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Abstract: ***Ever since the introduction of hemodialysis as a therapy for managing patients with end-stage renal disease, there has been considerable debate in terms of quality of life. It is both life-saving and life-altering. The degree of lifestyle change needed following prescribed diet/fluid limits and medications and managing symptom burdens depends considerably on the modality chosen, and affects patients' daily health-related quality of life. Health-related quality of life is the impact of a chronic disease and its treatment on patients' perceptions of their own physical and mental function. Among people on haemodialysis, QoL scores are both a critical outcome and a predictor of hospitalization and death. Health-related quality of life has been assessed using different measures and instruments. This systematic review looks at outcomes in terms of quality of life from studies and registry data reported in the literature. There is a need to do more research to compare QOL tools. QOL tools developed in other countries should be tested for cultural relevancy. Also, there is a need for a new QOL tool that is consistent with the culture and the religion of Muslim respondents and at the same time culturally relevant. More researches need to be done to culturally adapt QOL tools to make them relevant to other cultures, religions, and countries.***

Keywords: Hemodialysis, Quality of life, Predictor, Cultural

1. Introduction

Quality of life (QoL) has become a vital facet in assessing the burden of chronic disease. It has emerged as an important factor for appraising the attributes of healthcare for patients with renal failure. The literatures propose that many factors impact QoL and that it is an important indicator of health and well-being and at the same time it determines the effectiveness of treatment, decide the priority for resources distribution, and help in policy developments as stressed by Karen et al. [1]. Moreover, the QoL gives information about other symptoms that are equally or more important to patients' perspective and establishes information about the range of problems that affect the patients. QoL reflects the patients' preference [2].

Chronic Kidney Disease (CKD) is a very tense condition which causes a wide variety of complication [3].Usually, the patient need more support and help during the initial time of start dialysis because it is a new situation need to be cope with. End Stage Renal Disease (ESRD) patients undergoing hemodialysis live with varying degrees of physical and psychological symptoms.

Hemodialysis (HD) is a life-sustaining treatment for patients with ESRD. The therapy of hemodialysis is a highly demanding task since the patient must come to the dialysis unit three times weekly for an average of four-hour session, as well as time spent for waiting and transportation [4]. Hemodialysis treatment requires adherence for fluid and food restrictions and multitude of medications [5].

In addition, its treatment causes significant changes in the daily lives of patients, and affects their QoL. Impaired QoL can be related to CKD itself and its treatment [6]. Hemodialysis is not a cure for CKD but only helps to prolong and improve patients' QoL [7], [8]. HD complications also appear such as hypotension, headache, air embolism, and transmission of blood-borne infections such as hepatitis C virus [9]. All these complications lead to diminished working capacity as energy level often precipitates an inability to pursue full-time employment. The stressors of financial dependence, difficulties in coping with family responsibilities, and social lives give rise to a vicious circle of mood swings and unfulfilled hopes as a consequence.

To date, there have been few studies on the evaluation of QoL among patients treated by hemodialysis in the Middle East countries. Nothing is known about the challenges, stress, and disability faced by the patients and that is why Batieha et al. [10] recommended evaluation of QoL for patients in order to fulfill these needs and requirements. Therefore, the result of this literature review is useful for health care planner to illustrate the impact of haemodialysis treatment on QoL of patients' and make suggestions to improve their condition.
Significant advancement has been made in the treatment and intervention of chronic kidney disease; still, health-related QoL remains to be a significant problem for patients receiving hemodialysis. Hence, hemodialysis patients are subjected to various physiological and psychological stressors and may be threatened with many potential losses and life style changes as they experience problems with disease-specific symptoms.

This review would provide important information about the influence of hemodialysis on health-related QoL and identify challenges and unmet needs of hemodialysis patients, this would assist the nurses, doctors and other health provider in establishing methods that would help patients to lead more productive lives and designing and implementing nursing interventions according to patients' needs and concerns.

2. Methods

Papers that were included in the review were primary research studies related to QoL among hemodialysis patients published in English. Studies using both qualitative and quantitative methodologies were included. Titles of retrieved studies were reviewed and the abstracts were read to ensure that the study meets the inclusion criteria. The full text of selected studies were retrieved and analyzed to check that it answers the review questions.

The electronic search resulted in 28 studies. Duplicates were removed so that a final 18 papers were considered. The full texts were read identifying 25 papers within the defined parameters and from the Middle East and neighboring countries. Finally, the data extraction sheet was completed. The reviewed studies aimed to critically analyze the QoL among hemodialysis patients.

Computerized literature searches were performed, with language restriction to English, using multiple data bases. The search was limited to particular countries such as the Middle East and neighboring countries. Several research studies discussed QoL in dialysis patients and quality of life but only 3 studies outside of the Middle East were included. The relevant articles were studied for their research methodology and QoL tool used such as Kidney Disease Quality of Life scale Short Form, RAND 36-Item Health Survey 1.0 Arabic version, EuroQOL-5 Dimensions instrument (EQ-5D-5L), 36-Item Short Form Health Survey (SF-36), Revised Illness Perception Questionnaire (IPQ-R), Beck Depression Inventory and SF-36 (Health Survey for dialysis Patients), HRQoL, QL index score, Kidney Disease Quality of Life-Long Form questionnaires, Systematic Review, Hijima Session, Self Constructed Questionnaire while foreign studies utilized the following tools: WHOQoLBREF inventory of World Health Organization, General Health Questionnaire (GHQ-28), State-Trait Anxiety Inventory, Center for Epidemiologic Studies Depression Scale (CES-D), and Multidimensional Health Locus of Control (MHLC).

3. Results

The purpose of this study is to describe the quality of life in patients with end stage of renal disease on hemodialysis and to examine the contributing factors that may affect quality of life. A cross sectional design was used to describe the QoL in patients with ESRD on hemodialysis and to determine the contributing factors that may affect quality of life, and a correlational design was utilized to examine associations among the independent variables (demographic characteristics and biological factors) that may influence the dependent variable (QoL). It was conducted at the dialysis unit located in Ibrahim Bin Hamad Obaidulla Hospital (IBHOH), affiliated to the Ministry of Health, Medical District in Ras Al-Khaimah Emirate-UAE. A purposive sampling was used and the accessible population was comprised of 129 regular patients. Out of 129 patients, 74 patients were qualified in the inclusion criteria to participate in the research. Participants were interviewed individually to measure Health Related Quality of Life (HRQoL) using Kidney Disease Quality of Life-36TM (KDQoL 36TM) scale and compared KDQoL scores by demographic factors, and biological factors. The overall quality of life of patients with ESRD on hemodialysis was low, with M+SD (39.57+16.13). Increase poor quality was independently associated with female gender, aged >60 years, low educational level, unemployment status has poor QoL. The Physical Component Summary (PCS) domain came in the first rank with the lowest rated and scored with M+SD (32.66+17.30), whereas the mean of the Burden of Kidney Disease domain came in second rank with M+SD (34.61+12.26). Meanwhile, the Symptoms and Problems domain came in third rank with M+SD (38.56+22.8), followed by the Effects of Kidney Disease on Daily Life domain that came in fourth rank with M+SD (42.22+10.56), and then lastly, Mental Component Summary (MCS) domain came in fifth rank with M+SD (49.84+17.73). In this study, the results revealed that the level of serum albumin and gender were the most significant predictors that influence QoL in patients with (ESRD) undergoing hemodialysis at ($P>0.05$). The results of the present study shown the evidence that patients with ESRD have poor QoL. Lowest score of KDQoL 36TM scale was found in the PCS, while highest score was MCS. Furthermore, the study revealed that level of the serum albumin was the most significant predictor influence QoL in patients with ESRD and the most modifiable factor which has a strong association with poorer HRQoL was education, whereas non-modifiable factor was female gender. Because of those factors attention should be given to the nurses and other health care providers as formal caregivers for early interventions that prevent further morbidity and minimize the mortality as well as provide the evidence-based for clinical practice that assist the nurses to have a comprehensive assessment of their patients' lives and integrated all these crucial aspects in inclusive plan for appropriate intervention and improve quality of patient's life and HRQoL [11].

Another cross sectional study was conducted to measure the QoL of Saudi patients on hemodialysis and to determine the demographic and clinical factors that impact QoL among 100 chronic HD patients at King Abdulaziz Medical City, Riyadh, Kingdom of Saudi Arabia with the use of Arabic version of Kidney Disease Quality of Life Instrument Short Form (KDQoLSF) [12]. Demographic and clinical data were collected. Statistical analysis showed that scores on the cognitive function, role-physical, role-emotional and work status were low whereas patient satisfaction, dialysis staff encouragement and quality of social interaction domains scores were high. QoL scores significantly differed among subgroups of the sample; male participants scored higher than females, and the married group had higher scores on the kidney disease component of the instrument. The level of income was positively related to the physical component summary and the mental component summary. Age also significantly affected the QoL as patients below 40 years old had higher scores on the physical component summary.

Al Wakeel et al. [13] conducted a study which determined the factors that could predict QoL scores among patients on peritoneal dialysis among 100 patients undergoing peritoneal dialysis at King Khalid University, King Saud University, and Security Forces Hospitals, Riyadh, Saudi Arabia. Data gathering tools included the demographic data sheet and the Arabic translation of the Kidney Disease Quality of Life scale Short Form (KDQoLSFTM-1.3). The key findings of this study were that the social domain and the medical and the financial satisfaction domain of QoL had the highest scores compared to the other domains assessed (general health, physical, emotional and illness impact) whereas the physical domain scored the lowest. Additionally, it was found that the QoL scores were significantly affected by age, job status and education. QoL scores decreased with the increase in age and the decrease in educational level. In terms of the job status, QoL scores were higher for working participants compared to those who did not work. The QoL scores did not relate to the duration of dialysis.

Furthermore, another cross-sectional study was conducted from August to November 2010 at Ministry of Health (MOH), Jordan [14] which aimed to measure the patients' and caregivers' QoL, and subsequently to compare QoL of patients and caregivers with general population. RAND 36-Item Health Survey 1.0 Arabic version was used to assess the QoL. One hundred thirty-eight patients and forty-nine caregivers were involved in the study. Patients' QoL score was less than their caregiver and both have poorer QoL compared to general population. Patients' and caregivers' Physical Component Summary (PCS) were negatively correlated with their age. Moreover, caregivers' Mental Component Summary (MCS) was negatively correlated with their age. Single patients have higher PCS than married and widowed. Working patients have higher PCS than not working and retired. However there was no correlation between patients' and caregivers' QoL. In conclusion, patients' and caregivers' QoL were found to be considerable impaired compared to general population.

Zyoud et al. [15] carried out a multicenter cross-sectional study which focused on the patterns of HRQoL and determine the independent factors associated with poor HRQoL in 267 Palestinian patients on HD using the EuroQOL-5 Dimensions instrument (EQ-5D-5L) for the assessment of HRQoL. The results revealed that the reported HRQOL as measured by mean EQ-5D-5L index value and Euro QoL visual analogue scale (EQ-VAS) score was 0.37±0.44 and 59.38 ± 45.39, respectively. There was a moderate positive correlation between the EQ-VAS and the EQ-5D-5L index value ($r = 0.42$, $p < 0.001$). The results of multiple linear regression showed a significant negative association between HRQoL with age, total number of chronic co-morbid diseases and the total number of chronic medications. However, a significant positive association was found between HRQoL with male gender, university education level and patients who live in village. The results provided insight into a number of associations between patient variables and their HRQoL.

A cross-sectional descriptive study was carried out at the hemodialysis unit of Karmouz Health Insurance Hospital, Alexandria, Egypt [16]. The study was conducted on adult End-stage renal disease (ESRD) patients maintained on regular hemodialysis treatment for ≥1 year. Aim was to assess self-perception of ESRD patients undergoing regular Hemodialysis (HD) of their health-related quality of life (HRQoL) and explore resulted scores using kidney disease quality of life short form 36 instrument (KDQOL SF-36). A total of 81 eligible patients joined the study (49 males and 32 females) aged 50.6 ± 12.7 years. Results showed that HRQOL of HD patients was very poor in all domains. The mean total score was below 50 (out of 100 point) with mean Physical Health Composite (PHC) = 35.57 ± 7.34 and mean Mental Health Composite (MHC) = 36.76 ± 10.22. In general, scores were relatively higher in males, younger age groups, high educational level, employed and/or higher family income. Regarding clinical prolife, this study showed that scores were lower among patients suffering anemia, dyslipidemia, hypoalbuminemia and/or those with co-morbidities. Scores for general health survey were significantly lower in anemic patients (with hemoglobin level <11g/dL). Working patients had significantly higher scores than non-working or retired. The study also showed that employment was the only significant predictor for total HRQOL score in a multiple linear regression model was designed to predict total score, while controlling for hemoglobin level, age, duration of being on HD ($p=0.028$).

A descriptive comparative survey design was conducted among 161 dialysis patients which examined the QoL of patients in the UAE on dialysis using two QoL tools. The participants completed the 36-Item Short Form Health Survey (SF-36) and the QoL index dialysis version tool. Comparative analyses of the results for both tools were done using descriptive statistics. Multiple linear regression analysis determines the effect of the variables on the QoL scores. The questionnaires return rate was 93%. The overall QoL for dialysis patients was rated low when self-assessment using the SF-36 (58.9) compared to QoL index (77.2). The multiple regression analysis revealed that having a chronic illness had the strongest impact on the total scores of both tools. The comparison between the statistically significant variables for both samples revealed contradictory results from the two tools used. This meant that the two tools measured QoL differently. The two QoL tools scores impacted very differently on most socio-demographic variables on the two samples [17].

Quality of Life (QoL) has emerged as an important parameter for evaluating the quality of health care for patients with renal failure. The QoL of dialysis patients in the United Arab Emirates (UAE) has not previously been studied [18]. The researcher conducted a study which examined the cultural relevancy of two QoL tools and compared the QoL between dialysis patients and a sample from the community in UAE. This is a descriptive comparative survey design was used to study the QoL of 161 dialysis patients and 350 participants from the community. Dialysis patients completed the SF-36 and the QoL Index dialysis version tool. Participants from the community completed the SF-36 and QoL Index generic version tool. Both samples also completed three open-ended questions about the cultural relevancy of the tools. Analysis using descriptive and inferential statistics was done within and between groups to establish similarities and differences in QoL scores. Open-ended questions were analyzed thematically. The results revealed that the overall QoL for dialysis patients was rated lower when self-assessed using the SF-36 compared with the community sample (58.92 vs. 75.02, p=<0.0001). Furthermore, the overall QoL for dialysis patients was rated almost the same when self-assessed using the QoL Index compared with the community sample (77.2

vs. 78.6, =0.421). Moreover, the total scores of both tools were higher in the community sample (75.02 vs. 78.6). The comparison between the statistically significant variables for both samples revealed contradictory results with the two tools. The majority of participants considered both tools culturally relevant in general. There were more questions that were not answered by participants in the QoL Index by both samples compared with the SF-36. In the UAE, the SF 36 and the QoL Index capture different aspects of quality of life. Clinicians and researchers need to be aware of these differences when using these tools. An effective way of establishing the cultural relevancy of QoL tools involves comparing the QoL of a group with a health condition with a sample from the community, asking the participants about their views of the cultural relevancy of the tools, examining missing data, and asking participants open-ended questions about what they value in life.

Maslows' needs classified to five basic needs as physiological, safety, belongingness, esteem and self actualization. The study was a cross-sectional study including of all the hemodialysis patients who had referred to hemodialysis centers of King Khalid University Hospital, and security Forces Hospital at Saudi Arabia. Data were collected by using a structured interview questionnaire, needs assessment sheet was developed according to Maslows' hierarchy, and the Kidney Disease Quality of Life scale short form (KDQoL SF). The correlation between the total score of QoL turned to be negatively correlated with patient age, dialysis duration, and positively correlated to the level of education in the hemodialysis patients. Conversely, the total needs score is positively correlated to age and negatively correlated with the education level. All these correlations are statistically significant. The strongest correlation is between QoL and age. The best fitting multiple linear regression model explains statistically significant independent predictors of QoL are age, sex, dialysis duration, and total needs score. Measuring quality of life help to consider patients' needs more seriously, this study indicates statistically significant negative correlation, with decreasing total score of QoL as the total needs score increases [19].

Another study evaluated the health-related quality of life (HRQoL) in a sample of Iranian patients undergoing maintenance hemodialysis. The data were compared with the HRQoL for the Iranian general population where 250 patients undergoing hemodialysis were included using a convenience sampling approach in a cross-sectional study. Data collection was performed using a Persian translation of the Short Form-36 questionnaire in combination with demographic and clinically related questions. The collected data were analyzed using a logistic regression model with physical and mental summary scales as dependent variables. The results revealed that patients' mean Short Form-36 scores were significantly lower than those obtained for the general population for all scales. Patients with longer duration of being on hemodialysis, poor adherence to treatment, higher body mass index, and co-morbidity diseases suffered from a poorer physical health. Poor mental health was associated with a lower level of education, longer duration of hemodialysis, lower economic status, a lower degree of knowledge on disease, and co-morbidity diseases. This study affirms the fact that patients undergoing hemodialysis suffer from poor HRQoL. In comparison with data from other studies from Asian and European countries, this sample of Iranian patients on hemodialysis had a lower HRQoL, a discrepancy that might be due to differences in life style, socioeconomic status, the general level of education of the patients, as well as physician-patient communication [20]. A study was carried out in 2005 which assessed the quality of life (QoL) in Turkish haemodialysis patients and to identify related socio-demographic and clinical variables [21]. To measure QoL, 100 patients completed SF-36 during regularly scheduled haemodialysis. The researchers found that patients' QoL was substantially impaired. Age was negatively related to physical components of QoL. Duration of haemodialysis was negatively correlated with most of QoL dimensions. EPO treatment, education on disease and haemodialysis, and compliance to prescribed diet had great positive effects on QoL. Among the factors found to be related with the QoL in this study, probably the most important were education on disease and haemodialysis, and compliance to prescribed diet, in which we have influence, as nurses, on improving the QoL in patients receiving haemodialysis.

A study was carried out whose aim was to compare hemodialysis (HD) and peritoneal dialysis (PD) patients' illness perceptions and their related factors. This cross-sectional comparative study was conducted in five dialysis centers. After excluding patients with psychiatric co-morbidities, 342 stable dialysis patients (HD, n¼267; PD, n¼75) completed a demographic questionnaire and the Revised Illness Perception Questionnaire (IPQ-R). The data were analyzed using t-tests and ANOVAs. Out of the 342 patients, 53.8% were male and 46.2% were female. Their mean age was 46.1 ± 16.5 years. Compared to the HD patients, the PD patients perceived their illness to be significantly less chronic (p¼.029) and more controllable, whether through personal or treatment control (p¼.012, p¼.017). Patients' most common cause of attributions were stress, worry, or poor past medical care. PD showed an advantage over HD in terms of perceptions of ESRD chronicity and controllability. Intervention programs targeting illness perception are needed to support dialysis patients [22].

Many psychiatric disorders can be seen in patients with chronic renal failure (CRF). The objectives of the study were to investigate the prevalence of psychosocial problems in patients with end-stage renal disease and to assess the prevalence of depression in patients with end-stage renal disease. A descriptive study design included 50 patients with end-stage renal disease who were scheduled for hemodialysis at Prince Salman Hospital Riyadh Saudi Arabia [23]. The patients were interviewed with the use of socio-demographic information questionnaire sheet developed by the researchers; Beck Depression Inventory and SF-36 (Health Survey for dialysis Patients). The result demonstrated that more than half of studied subjects (55.7%) mentioned that their health extremely interfere with their social activities. There was also no significant statistical deference between gender and depression. The findings indicated that hemodialysis severely interferes with social activities of patients & depression is a common psychological problem among the Saudi patients with ends stage renal disease.

The common complication of dialysis such as strict dietary restrictions, reduce social and recreational activities, medical complications, economic pressure, marital dispute, sexual dysfunction, emotional stress and anxiety, and provide more pressure for patients and caregivers that further affect their QoL [24]. Moreover, Arslanian et al. [25] emphasized that different body systems are also affected by renal failure such as sleeping, eating, working, planning for daily schedule, and these can become a challenge for patients and families. So many permanent changes in family roles and expectation need to be done and this also increases the stress level as well as deteriorating QoL.

ESRD is a chronic disease that has a high level of disability in various areas of patient lives leading to impaired QOL [26]. Moreover, a study found that patients on haemodialysis treatment have poorer QoL than other chronic diseases such as chronic heart failure, diabetes mellitus, and chronic lung disease [27]. Despite the advancement in treatment, there are times the patients' QoL is still lower compared to the general population [28] and even lower than patients with other chronic illness [29]. Furthermore, the study of Abdel-khalek [30] shows how religion such as Islam could reduce anxiety and depression through prayers. Religiosity is considered a remarkable factor that influences QoL and subjective well being. Furthermore, religiosity increases satisfaction in life; people who are religious have more social support and better habits [31]. So, these will improve the physical and social life of patients and their caregivers.

A study investigated the variations in quality of life (QoL) among patients with end-stage renal disease (ESRD) who are receiving replacement therapy in several dialysis centers. This observational study includes interviews with nurses and data extraction from medical charts for all 680 adults who had been on dialysis therapy for more than 4 weeks in seven dialysis centers. By using multivariate analysis, we generated a model to explain the variance in QoL as measured by the QL index score [32] among patients pooled from all centers. The expected mean QL index score and 95% confidence intervals were computed for each dialysis center. Centers with observed mean QL index scores outside of the expected confidence range were marked as possible outliers. The findings revealed that the following patient attributes to be independently associated with QoL: age, education, occupation, and certain co-morbidities (e.g., diabetes, stroke). After adjustment for case mix, we could identify four outlier centers. After further adjustment for albumin in serum, a possible process indicator, two centers were no longer considered as outliers. These findings indicate that the variance in QoL of ESRD patients at different centers is not entirely explained by known case-mix factors [33].

Bilal, Khan, and Danial [34] carried out a study which assessed the chronic renal failure undergoing hemodialysis for past several years with almost no urinary output. Twenty-four patients from Sindh Government Qatar Hospital Karachi were selected randomly undergoing dialysis 2-3 times/week for an average of 3 years under supervision of Dr. Khurram Danial, in-charge nephrologist at dialysis Centre Sindh Government Qatar Hospital Karachi after the written consent from patients. Each patient was subjected to Hijama session once a week after dialysis for a period of one year in a nearby hospital Aligarh Shifa with the consent of the ethical committee of the hospital. Serum urea, creatinine, complete blood count and electrolytes were determined prior to Hijama as baseline values and were again recorded on monthly basis for twelve months of Hijama sessions. The patient's feedback regarding quality of life after each Hijama session shows that almost all the patients reported a significant recovery from severe fatigue which they used to face during the interval between the dialysis sessions. There was significant recovery in all patients from anorexia and insomnia with the improvement in quality of life as compared to patients not undergoing Hijama. Both systolic and diastolic blood pressures were shifted towards normal in almost all patients after Hijama. Serum Creatinine level was declined significantly, while electrolyte and hematological parameters were also improved significantly. The hemoglobin of all patients undergoing Hijama was maintained near normal without any blood transfusion, which was frequently needed in patients not undergoing Hijama sessions. There was insignificant improvement in Urinary output in 2 out of 24 patients. Results of the present study suggest that Hijama may be performed safely in patients of chronic renal failure on dialysis with overall improvement in quality of life, since there was reduction in fatigue, improvement in appetite, quality of sleep and platelet count.

It is important to give a detailed picture about the social and spiritual wellbeing of patients who are on renal dialysis to help the medical professionals to recognize the social and spiritual variables, so early intensive intervention can be performed once necessary. A total of 120 patients who had ESRD and were treated with hemodialysis completed the self-designed questionnaire has been used; the end result is a questionnaire consisted of 6 sections including demographic data, physical, social, psychological and spiritual wellbeing, degree of coping with current condition, uncertainties about health in future, self-esteem and dependency, and the impact on marital relationship. Among 120 participants, 55% were females and the mean age was 48.5 (SD: 16.7). An eighty one point seven percent were unemployed and 81.7% of the participants were of low educational level. Thirty percent of the patients have family history of hemodialysis; 55.6% of them are first degree relatives and 44.4% for the second and third degree relatives. Seventy two point two of patients have co-morbidities, mostly hypertension (49.4%). Fatigue (93.8%) and insomnia (56.2%) are the two major physical complaints after the process of hemodialysis, however, (53.3%) of the patients felt more comfortable after it. Seventy seven percent of the patients suffered from a financial impact and 60.3% had weak social relationships. Sixty percent considered that the process of hemodialysis makes their life restless to the extent that makes their daily activities to be negatively affected by 73.8%. Among 85 married patients, the sexual performance and the sexual desire were negatively affected by 54.2% and 52.2% respectively. Only 50% of the patients stated that they have a goal they want to achieve in their life. Seventy eight percent of the patients were uncertain about their health and 67.3%

were worried from about the future. However, 70% of the participants claimed that spiritual devotions and stronger faith has made them more able to accept their disease and deals in a positive manner towards being involved in the hemodialysis program. Social and spiritual well-being should be considered as important predictive factors for a better quality of life in hemodialysis patients [35].

Unruh et al. [36] conducted a HEMO study which focused on the changes in health-related quality of life as a secondary study outcome. Specific hypotheses were that study interventions would affect physical functioning, vitality, Short Form-36 Health Survey (SF-36) physical and mental component summary scores, symptoms and problems associated with kidney disease, and sleep quality. At baseline and annually, subjects responded to both the Index of Well-Being and the Kidney Disease Quality of Life-Long Form questionnaires. The interventions were assessed on the basis of their average effects over 3 years. At baseline, the SF-36 physical component summary score was lower than in healthy populations, but the mental component score was nearly normal. Over 3-year follow-up, physical health continued to decline; mental health and kidney disease-targeted scores remained relatively stable. The high dose hemodialysis intervention was associated with significantly less pain (4.49 points, $P<0.001$) and higher physical component scores (1.23 points $P=0.007$), but these effects were small compared to the natural variability in scores. High flux membranes were not associated with statistically significant differences in health-related quality of life. The HEMO Study results demonstrate the marked burden of chronic kidney failure and hemodialysis treatment on daily life. In this trial among patients undergoing maintenance three times a week hemodialysis, the SF-36 physical component summary score and pain scale showed significant but very small clinical effects favoring the higher dialysis dose.

In another country specifically in Greece, an investigation was conducted to determine the differences in 84 in-center hemodialysis (HD) and 60 continuous ambulatory peritoneal dialysis (CAPD/PD) patients through patient-reported assessments which included: WHOQoLBREF inventory of World Health Organization, General Health Questionnaire (GHQ-28) of Goldberg, State-Trait Anxiety Inventory, Center for Epidemiologic Studies Depression Scale (CES-D) and Multidimensional Health Locus of Control (MHLC). Results indicated that HD patients reported lower QoL in the environment and social relationships domains. More symptoms were also reported in the GHQ-28 subscales of anxiety/insomnia and severe depression. This measurement includes sleep problems and suicidal thoughts. The findings confirm the differences between the two treatment modalities, indicating that HD patients have poorer QoL in several aspects of their environment and their social relationships. Both groups reported elevated depression. However, HD patients reported more suicidal thoughts and sleep problems compared to PD patients [37].

In addition, Panagopoulou, Hardalias, Berati, & Fourtounas [38] conducted a study whose aim was to investigate psychosocial variables related to objective and subjective indicators of quality of life in a single center cohort study of patients undergoing in-center hemodialysis (HD), Continuous Ambulatory Peritoneal Dialysis (CAPD) and renal transplant recipients (RTx). Tyhe researchers studied 40 HD patients, 36 CAPD, and 48 RTx patients by a special questionnaire examining demographics, functional status, employment status, and impact of therapy on psychosocial issues such as anxiety and depression. The RTx patients disclosed a better functional and employment status than the CAPD and the HD patients. They were also more compliant and satisfied with their therapy and their relationship with the medical and nursing personnel. The CAPD patients were also more satisfied, more compliant, better motivated, and less anxious and depressed compared with the HD patients who scored low in every aspect studied. Successful renal transplantation is a superior modality of therapy than HD or CAPD regarding psychosocial and quality of life issues. However these results can partially be explained by some selection bias, as RTx patients are usually younger and CAPD patients are selected for this modality after examining functional and social status.

Maintenance hemodialysis (MHD) patients often have protein-energy wasting, poor health-related quality of life (QoL), and high premature death rates, whereas African-American MHD patients have greater survival than non-African-American patients [39]. In their study, it was hypothesized that poor QoL scores and their nutritional correlates have a bearing on racial survival disparities of MHD patients. Baseline self-administered SF36 questionnaire–derived QoL scores with nutritional markers by multivariate linear regression and with survival by Cox models and cubic splines in the 6-year cohort of 705 MHD patients, including 223 African Americans. Worse SF36 mental and physical health scores were associated with lower serum albumin and creatinine levels but higher total body fat percentage. Spline analyses confirmed mortality predictability of worse QoL, with an almost strictly linear association for mental health score in African Americans, although the race QoL interaction was not statistically significant. In fully adjusted analyses, the mental health score showed a more robust and linear association with mortality than the physical health score in all MHD patients and both races: death hazard ratios for (95% confidence interval) each 10 unit lower mental health score were 1.12 (1.05–1.19) and 1.10 (1.03–1.18) for all and African American patients, respectively. MHD patients with higher percentage body fat or lower serum albumin or creatinine concentration perceive a poorer QoL. Poor mental health and poor physical health in non-African American patients correlate with mortality. Improving QoL by interventions that can improve the nutritional status without increasing body fat warrants clinical trials.

An assessment of Quality of Life (QoL) for dialysis patients and to predict the correlations among the domains of quality of life was carried out [40] using descriptive study which was conducted in Kirkuk General Hospital in Kirkuk city. Purposive sample consists of (94) patients with end-stage renal disease treated by Haemodialysis were selected. In order to collect the study data, such questionnaire was constructed based on World Health Organization (WHO)

instrument and literature reviews. The findings indicated that the sub-domain of sleep and rest as a part of the physical domain, also the psychological domain of the quality of life for these patients had greatly affected. The study concluded that there were significant statistical interrelations between physical and psychological domains in addition to spiritual with social domain. The study recommends to increase the number of specialized health related agencies and dialysis units to enhance the quality of life for hemodialysis patients.
Affective disorders, particularly depression, are the commonest and probably the most important psychopathological complication of end stage renal disease (ESRD).

In Iraq, as well as many other Arab countries, the true prevalence of depression among ESRD patients is unknown. The objective of this study was to determine the prevalence of depression among a cohort of Iraqi hemodialysis (HD) patients and relate it to their socio-demographic characteristics. The researchers recruited patients from two HD centers in Baghdad, excluding patients with history of depression or other psychiatric disorders prior to the initiation of HD. The Arabic version of diagnostic and statistical manual of mental disorders fourth edition (DSM-IV) was used to diagnose depression. Beck's Depression Inventory was used to grade its severity. Clinical and laboratory data of the study group were documented and related to the diagnosis of depression. Seventy-five Iraqi patients on maintenance HD were included in the study. Patients' duration on HD ranged from six months to five years. The prevalence of depression among this cohort of HD patients was 80%. The prevalence of severe, moderate and mild depression was 25%, 50% and 25% respectively. The mean depression score was 17.1. Female gender, unemployment, and marital status had statistically significant associations with depression. Depression is common in this group of Iraqi HD patients and its prevalence is comparable to the results of similar studies in other societies [41].

Depression is common among hemodialysis patients. Furthermore, similar reports from many developing countries such as Egypt are scarce. This might be due to cultural and social concerns. This study is intended to address this important issue. Donia, Zaki, Elassy, and Elbahaey [42] conducted a cross-sectional study was conducted at the dialysis unit of the Urology and Nephrology Center, Mansoura University, Egypt. Data of 76 chronic hemodialysis patients (mean age 43.2 ± 15 years; 54 males and 22 females) were retrieved. Psychiatric interview and psychometric assessment of depression and HRQoL (using an Arabic-adapted Beck Depression Inventory II and Short Form scale, respectively) were performed. Findings revealed that depression was diagnosed in 58 patients (76.3%). Of them, 18 (23.7%), 15 (19.7%) and 25 patients (32.9%) were suffering from mild, moderate and severe depression, respectively. Depressed dialysis patients group was comparable to the non-depressed group except for a higher prevalence of peripheral neuropathy (46.7vs.11.5 %; p=0.034) and a less frequent use of iron therapy (52.7 vs. 86.7%; p=0.017). Except for role limitation due to physical problems, all HRQoL aspects were significantly worse among the whole group of depressed patients compared to the non-depressed group. Depression is common among our Egyptian hemodialysis patients. It seems to adversely affect almost all aspects of HRQoL. Therefore, a regular combined nephrology/psychiatry approach should be central to the medical care of hemodialysis patients in order to accurately assess for depression among them. Moreover, large national studies to delineate the prevalence and impact of depression among Egyptian hemodialysis patients are needed.

A study was conducted which focused on the assessment of HRQoL of hemodialysis patients attending El-Minia University Hospital dialysis unit, determine the relation between HRQoL and some socio-demographic factors and clinical disorders and also to compare HRQoL between patients performing hemodialysis for less than and more than 5 years [43]. The study is a cross-sectional hospital-based study that included 170 hemodialysis patients; 81 males and 89 females, mean age 46.6 ± 14.6 years. In all 59.4 % were rural residents. Data were collected by a questionnaire which included demographic, social and medical data. Kidney Disease Quality of Life-36 (KDQoL-36) health survey was used for assessment of HRQoL. The results revealed that about two thirds (64 %) of the studied hemodialysis patients had physical and mental quality of life (QoL) scores below average level. HRQoL was lower in old, female, married, illiterate and non-worker hemodialysis patients. Hepatitis C positive (HCV), diabetic and anemic patients had decreased QoL scores. A longer duration of hemodialysis treatment was associated with reduced physical QoL. The most important socio-demographic factors affecting HRQoL were age, sex, education, occupation and marital status. The most important clinical disorders affecting QoL were anemia, HCV infection, sleep disturbances and diabetes. Increase awareness of hemodialysis patients and their caregivers about disabilities associated with hemodialysis treatment and educational programs to decrease the problems which the patients face and to increase the QoL.

Another research was carried out [44] in order to evaluate the physical (PCS) and mental (MCS) component summary scales in hemodialysis patients as compared to healthy subjects at a baseline and two years later. 130 patients on hemodialysis (mean age 40.6±8.1 years) were enrolled in the study. The short-form with 36 (SF-36) questionnaire was given every 6 months to hemodialysis patients. Results were compared to the general population and changes in QoL over time were determined. Mean PCS was 34±15.46 and mean MCS was 38.80±15.17 compared to the general population. There were significant decline in the PCS and MCS at baseline and two years later. There was no significant correlation between the causes of end-stage renal disease (ESRD) and the Quality of Life (QoL), except for diabetes mellitus as regards to MCS. High levels of serum albumin and hemoglobin was associated with high quality of life. Serum albumin was a good predictor for quality of life in this study. Adequacy of dialysis treatment in hemodialysis patients was determined by serum albumin, hematocrit, KT/V, and Urea reduction Ration (URR). Results showed the negative impact that ESRD and hemodialysis treatment have on self-assessed physical and mental health and it is important to treat all factors that induce hypoalbuminemia as well as anemia.

An analysis to the prescribed trends in haemodialysis patients and to assess QoL in haemodialysis patients with reference to their physical, psychological, social and environmental health dimension was done [45]. A cross-sectional study was conducted in patients undergoing haemodialysis at Dialysis centre of Tertiary Care Teaching Hospital, over a period of three months. Rationality of prescription was analyzed by comparing with WHO core drug prescribing indicators. WHOQoL-BREF questionnaire was used to assess the different domains of quality of life of haemodialysis patients. Data were analyzed using statistical methods such as Kolmogorov Smirnov (KS) test, unpaired t-test and Analysis of Variance, Pearson correlation coefficient, SPSS version 18 and 20. Results show that a total of 84 cases were analyzed during the study, of which 65 were males and 19 were females with a mean age of 53.89 ± 13.34 years and 39.05 ± 8.45 years, respectively. Analysis of WHO core drug prescribing indicators showed that the average number of drugs prescribed per patient was 4.73, percentage of drugs prescribed by generic name was 39.62%, percentage of patients with an injection prescribed was 100%, percentage of drugs prescribed from essential medicine list was 41.5% and none of the patient was prescribed with antibiotic. Anticoagulant agent (100%) was the most commonly used drug, followed by antihypertensive drugs (94%), ulcer protective, calcium salt, multivitamins, erythropoietin, insulin, antiplatelet, oral hypoglycaemics and statins. Patients on haemodialysis had a poorer QoL in all domains except for domain 4 which is environment. Domain 1 was highly correlated with domain 2 and moderately correlated with domain 3 and 4 with significant P value at 0.01. Current study provides valuable insight about the overall pattern of drug use profile in haemodialysis population. Heparin and amlodipine was the most commonly used drugs. The study also found that QoL was very poor; especially low score was seen with physical and psychological domains.

4. Discussions

The assessment of health-related QoL among patients with chronic illnesses is one area of current scientific interest. Health-related QoL studies can provide comprehensive and sensitive methods for communicating information on the burden of the disease and effectiveness of treatment if they are designed and implemented well. There is growing recognition of health-related QoL issues in ESRD patients undergoing hemodialysis. Despite a tremendous increase in knowledge and skills in the management of ESRD patients, such individuals particularly those treated by hemodialysis, remain ill. Impaired health-related QoL, dependence on others and poor rehabilitation all contribute to physical and emotional disabilities that may persist even in well-dialyzed ESRD patients [46].

The results of the literature review shown the evidence that patients with End stage of renal failure on hemodialysis have lower QoL compared to other healthy populations. In addition, the results gave a point by point portrayal of the QoL scores of hemodialysis patients and the effect of certain variables on their QoL. The quality of life of the HD patients has been affected due to many reasons such as variables like the patient's age, gender, work/occupation, educational attainment, adherence to medicine among others. The complications brought about by the hemodialysis in the lives of the patients put much restriction not only in the dietary area but as well as social and recreational activities, family, marital and lifestyle adjustments, economic pressure and other psycho-social issues. These challenges add more stress, pressure and anxiety to the HD patients that further affect their QoL.

The patients who suffer from the end-stage renal disease comprise a very specific group. Their life as they know it undergoes a radical change. The necessity to observe a diet and to control the amounts of the intake of fluids emerges. In the case of dialysis patients, the necessity to visit the dialysis station about three times a week for a few hours at a time becomes burdensome. The psychological problems which accompany dialysis treatments have many aspects.

This review provides a baseline related to dialysis and community QOL tools and scores in the Middle East countries. Having this baseline will enable other researchers to benchmark their findings with the findings from this systematic review.

The systematic review adds to the limited knowledge about QoL in dialysis patients in the Middle East and provides also an insight into QoL of a community sample. This review has shown that what people living in the Middle East value in life is not exactly what the tools capture and what people personally value in life could be different from other people in the same community.

It has demonstrated that the presence of another long term condition in dialysis patients and the presence of long term condition with the general population is also one consideration determining the QoL scores in both tools.

5. Conclusions

The study findings indicate hemodialysis severely interfere with different activities of patients. Hemodialysis is a renal replacement treatment that causes various psychiatric, economic, and psychosocial problems. In addition, strict diet and continuous treatment are other stress factors; people on dialysis continue to have many life changes. Quality of life is often compromised by fatigue, and challenges in planning meals and limiting fluids. In addition, patients' social and role responsibilities may be altered**.** Many authors and studies indicated that a large percentage of HD patients made the radical adjustment to this treatment in order to prolong their lives.

There are varied tools used in the different studies on QoL among hemodialysis patients and it likewise indicated the differences in the results from the different tools utilized, pointing that the tools measured QoL differently.

However, it also shows that QoL tools used had different subscales; consequently they have captured different aspects of the QoL of respondents. Given also that the total scores were different for each tool, researchers and clinicians need to be careful when choosing QoL tools for research and clinical practice. All tools should be culturally relevant and have well established validity and reliability tests. Depending on the type of population, researchers are advised to select disease specific tools if they are studying the QoL of patients and to select general tools if they are studying healthy people from the community. QoL tools used in clinical settings should be disease specific, short, easy to complete and score.

6. Other recommendations

In the light of the current study findings, it is recommended that this systematic review should be updated to include other countries with different population and hospitals.

Future researches should focus on getting a better matched dialysis and community sample in the Middle East. There is a need to do more research to compare QoL tools. Testing validity and reliability is not enough. QoL tools developed in other countries should be tested for cultural relevancy. Also, there is a need for a new QoL tool that is consistent with the culture and the religion of Muslim respondents and at the same time culturally relevant. Given that Muslim people accept their illness because it comes from Allah and consider it as a test from Allah, there is a need for more understanding of how Muslims perceive their illnesses and how they cope with their disease limitations.

Future researches on QoL in dialysis patients from the Middle East should focus on better ways of communication with participants such as face-to-face interviews, so participants will have the chance to elaborate more on their answers and confirm their understanding of the questions and researcher will have the chance to get in depth knowledge by asking respondents for their rationale for their answers and clarify issues related to QoL. They should also consider the use of the focus group approach to find out what is important and what to include in the newly developed QoL tools to make them culturally and religiously acceptable.

More researches need to be done to culturally adapt QoL tools to make them relevant to other cultures, religions, and countries.

Further researches must be done in this regard in order to review all possible forms of interventions adjusted to the needs of dialyzed patients and according to cultural customs

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