Association between health locus of control, Self-care and Self-efficacy in Patients with End Stage Renal Disease Undergoing Hemodialysis

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Abstract: The purpose of this research was to find out the association between health locus of control, self efficacy and self care abilities**. Methods:** This study is a descriptive, correlation study was done to 120 hemodialysis patients. The study was conducted at the Nephrology Hemodialysis Units of the Specialized Ain Shams Hospital, and Ain Shams University Hospitals. The data collection tools included: Interview questionnaire sheet, Multidimensional Health Locus of Control (MHLC) scale, The Chronic kidney Disease Self-Efficacy (CKD-SE) Instrument and Hemodialysis patients' self-care measurement scale. **Results**: the mean age of hemodialysis patients was 32.08 ± 7.66 and more than half of patients undergoing dialysis for 3 - <5 years. More half of the health locus of control and self care abilities, only less than half of them 48.3% have a complete self efficacy. There was high significant relation among health locus of control, self efficacy and self care abilities**.** and also between self efficacy and self care abilities. **Conclusions**: Hemodialysis patients with high locus of control have high level of self efficacy and desirable level of self care abilities.

Key words: Hemodialysis – Self efficacy – Self care – Health locus of control – Self care abilities

Introduction

Nowadays the most common way to treat advanced renal failure (ESRD) is hemodialysis. Hemodialysis led to increase longevity and survival in patients with chronic renal failure.About 400,000 people worldwide are suffering from chronic renal failure, of these, more than 300,000 are under hemodialysis treatment **Chilcot, Wellsted, and Farrington (2010).**

The prevalence of ESRD in Egypt increased from 225 (pmp) in 1996 to 483 (pmp) in 2004 and The prevalence rate of Hemodialysis (HD) was 414 patients per million populations (pmp). **Zahran (2011).**

Dialysis itself caused physical, mental and social problems of patients. As well psychiatric disorders such as anxiety, depression, fatigue and dizziness which involve these patients caused loss of motivation and desire to activity in them**. Royani, etal., (2013)**. Patients undergoing hemodialysis are often confronted with limitations in food and fluid intake; with physical symptoms such as itching and lack of energy; with psychological stressors such as loss of self-concept and self-esteem, feelings of uncertainty about the future, and feelings of guilt towards family members; and with problems in the social domain. **Heidarzadeh, Atashpeikar, and Jalilazar (2010)**. With regard to physical and psychological problems in hemodialysis patients, in all or some parts of their daily activities, they are dependent on others and in fact they do not have full self-care ability. **Narimani, (2008**) lifestyle restrictions can impact on patients' illness beliefs, sense of personal control leading to anxiety and depression, inhibiting coping, and adjustment patients with a sense of confidence in their ability to perform self-care behaviors are more likely to actually perform these tasks. Thus, individuals with high levels of self-care are better able to manage their ESRD. **Landreneau, Lee, and Landreneau.,(2010).**

Significant of the study

Patients undergoing hemodialysis are dependent for a lifetime on a particular device or technique to preserve their life and have numerous worries about self care, and also doubts about their ability to perform daily activities and normal life. Successful treatment of end stage renal disease (ESRD) depends on the patient compliance. Personal health locus of control about end stage renal disease was significantly and positively related to physical and social functioning, bodily pain, general health perception and the physical component score in hemodialysis. A higher personal control was also associated with a lower emotional response and a better understanding of the renal disease.

Self-care is associated with several advantages, it improves coping with or adjustment to illness, increases sense of wellbeing, improves symptom control, decreases risk of complication, increases control and autonomy, increases functioning. Self-efficacy has a positive effect on an engaging in health-promoting behaviors, motivation, thinking style, and state of emotional wellness and coping with life

restriction. High level of perceived self-care efficacy is related to more self-care practice.

Enhancing self-care self efficacy to diminishing the need for health care, facilitating patients' treatment adherence, enhancing functional heath status and quality of life of hemodialysis patients as well as health locus of control may help the patients to face their problems related to ESRD and evaluate in a positive way their quality of life and the status of general health, showing better psychological health and less somatic symptoms. So that this was aiming to Assess overall health locus of control, self efficacy and self care abilities among Patients with End Stage Renal Disease Undergoing Hemodialysis and assess association between health locus of control, self efficacy and self care abilities

Definition of terms

Health locus of control: beliefs about their own abilities to perform health behaviors will affect how they adjust to their chronic illnesses.

Self-efficacy: is the judgment of an individual toward his own abilities.

Self-care ability: is the capacity and power of people to meet their needs and related care.

Self-care self-efficacy: is defined as "the confidence a person has in his or her ability to perform relevant self care activities

Aim of the study

This study was aim to

▪ Assess overall health locus of control, self efficacy and self care abilities among Patients with End Stage Renal Disease Undergoing Hemodialysis.

▪ Find out association between health locus of control, self efficacy and self care abilities.

Research hypothesis

• Patients undergoing hemodialysis have a high level of health locus of control, self efficacy and have a desirable level of self care abilities

• Hemodialysis patients with high locus of control have high level of self efficacy and desirable level of self care abilities.

Study design

This study is a descriptive, correlation study

Setting

The study was conducted at the Nephrology Hemodialysis Units of the Specialized Ain Shams Hospital, and Ain Shams University Hospitals

Subject

Participants were purposively selected. The sample included (120 ESRD patients who had already been on hemodialysis at the two hospitals

The subject of this study included patients who met the following criteria:

• Agree to participate in this study
• Sex: both sex
• Age between 20 and 60 years..

• Undergoing hemodialysis for at least 1year.
• Having two or three sessions per week
• Having ability to perform self-care activities
• Not complain from other chronic physical disease
• Not complain from mental disorders

Field work

At the beginning, the researchers introduced themselves and briefly explained the study objectives to patients. The process of data collection was carried out in the period from June 2014 to the end of end of August 2014., the researchers attended Hemodialysis Units of the Specialized Ain Shams Hospital, and Ain Shams University Hospitals from 9.00 am to 3.00 pm for three days/ week to collect data.

Ethical consideration:

The ethical research considerations in this study included the following:

• The research approval obtains before conduct study

• Subjects are allowed to choose to participate or not participates 'voluntary participation' and they have the right to withdraw from a study any time without penalty.

• The researcher describes the objective and aim of the study to subjects.

• Maintain confidentiality and anonymity for every selected patient who involved on the study sample.

• Clarifying that all information will be used for scientific research only

Tools of data collection

• **Interview questionnaire sheet:**

It was developed by the researchers. It was divided into three parts, as the following:

1-Demographic Data: includes data about the general characteristics of the study sample such as gender, age, marital status, and level of education,

2- Present Medical History: includes data about the present medical history of the study participants such as the frequency of HD, duration of HD, and vascular access used.

3- Laboratory Data: this part includes laboratory investigations of the study participants such as BUN level, creatinine level, hemoglobin level, and calcium level.

2-Multidimensional Health Locus of Control (MHLC) scale

The Multidimensional Health Locus of Control (MHLC) scale is developed by **Wallston, et al., (1994)** The MHLC scale aims to measure variations in locus of control beliefs in relation to health conditions and assesses the extent to which a person believes that health status is influenced by one's actions, 'chance' and 'powerful others' (specifically 'doctors' and

'others'). MHLC consists of three different subscales: Internality (six items), Chance (six items), Doctors and Other (six items).

Scoring

Each items rated the degree of their agreement on a 6-point rating scale ranging from 1 (strongly disagree) to 6 (strongly agree).scores range from 18:108.higher score indicate higher belief in the specific health locus control.

Scoring systems in this study

Low health locus control	18 - <54
High health locus control	54 - 108

3- The Chronic kidney Disease Self-Efficacy (CKD-SE) Instrument

It is originally developed by **Lin (2011)** to assess the person confidence in his \her ability to overcome barrier in order to perform disease specific self management behavior. The Chronic kidney Disease Self-Efficacy (CKD-SE) Instrument consists of four subscale: Autonomy (8 items), Self-integration (7 items), Problem Solving (6 items) and seeking social support (4items).

Scoring

Each item was rated on 4 point scale ranging from 1 (least relevant) to 4 (most relevant) scores range from 25: 100.

Scoring in this study

No self efficacy	<25
Mild self efficacy	25 – 50
Complete self efficacy	+ 50

4- Hemodialysis patients' self-care measurement scale

This scale originally develops by (**Shintani Keiko, 2014**) to evaluate the degree of universal self-care requisites and health-deviation requisites. The scale consists of two subscales: universal self-care factor and health-deviation self-care factor.

The universal self-care factor: consists of 5 factors and 35 requisites. These factors include dietary regulation, stress prevention, food safety, exercise regulation and habit regulation.

Health deviation self-care: consist of 3 factors and 25 requisites. These factor include. Shunt preservation factor, therapeutic diet implementation factor, and the observations of care instructions factor.

Scoring

Each item requisite was rated on was rated on 4 point scale ranging

4 point = very applicable.
3 point = somewhat applicable.
2 point = minimally applicable
1 point = not applicable at all

Scoring in this study

Total scoring for universal self-care =140 points. classified as fallow

1: 35 = not applicable at all,

35: 70 = minimally applicable
70: 105 = somewhat applicable
105: 140 = very applicable

Total scoring for health deviation self-care = 100 points

1:25 =not applicable at all,
25:50 = minimally applicable
50: 75 = somewhat applicable
75:100 = very applicable

Pilot study:

The pilot study was conducted on 12 patients they are executed from the total sample in order ensure the clarity of questions, applicability of the tools and the time needed to complete them and perform the required modification according to the available resources.

Results of pilot study

Alternate two items in self care management scale in habit regulation.

reduce or stop drinking Alcohol and keep Alcohol intake low by Make time for prayer – social activity and Read books – watches movies.

Statistical design

An IBM compatible PC. Was used to store and analyzes the data and to present the important results calculations were done by means of statistical software. Package namely "SPSS" The statistical process used in the analysis included: The statistical process used in the analysis included: Simple frequency tables and Paired "t" test for comparing quantitative continuous data.

The statistical process used in the analysis included:

Non - significant (NS) if P value > 0.05

Results

Table (1) Shows the distribution of ESRD patients' demographic characteristics. The study included 66 males representing 55%, the mean age was 32.08± 7.66.Concerning to marital status 58.3% were married.

About the educational level 30.8% have secondary level of education.

Regarding to occupation 38.3% are employee and 31.7 are housewife.

It is observed from the table 75 % of patients have inadequate income.

Concerning to treatment history the table explain that the mean years of Hemodialysis experience was 29.8±44. Concerning to frequency of Hemodialysis 50% has two session / week. And 84 % of patients have 3 hour session. finally the table shows that 58.3% of patients undergoing dialysis for 3 - <5 years.

Table (2) shows laboratory investigations, mean serum albumin level was 4.0 ± 0.5 g/dl, mean serum phosphate 5.1±1.6mg/dl, mean serum calcium level 8.8±0.6 and haematocrit was 32.9±2.3.

Table (3-a): As observed from the table in response to internal health locus of control 50% and 45.8% agree that they are responsible for their health and whatever goes wrong with their health is their own fault. Concerning to chance sub items the table revealed that 32.5% and 31.7% of patients disagree that the health is greatly influenced by accidental happening and when they are sick, they have to let nature run its course meanwhile 30.8% agree and moderately agree that "when they become ill, it is a matter of fate and Even when they take care of myself, it's easy to get sick about the doctors sub items that table shows that 30.8% and 28.3% strongly agree to moderately agree that If they see an excellent doctor regularly, they are less likely to have health problems. Finally the table revealed that 30.8% of patients strongly agree that "other people play a big part in whether I stay healthy or become sick". Meanwhile 30% agree that the type of care I receive from other people is what is responsible for how well I recover from an illness.

Table (3-b): the table revealed that 63.3% of patient have high health locus control T= 39.72.

Table (4-a): As notice from the highest percent of patients explained that is most relevant for them "they are comfortable contacting their doctor at any time with questions about their medication", they are comfortable telling a physician that I have CKD and they can do whatever is necessary to have their questions about my CKD answered. They represent 66.7%, 57.5% and 55 % respectively. Regarding to self integration sub items the table shows that the most relevant for the patients were "they can participate in appropriate social activities and they can choose appropriate foods during social activities. They represent 58.3% and 40%. Concerning to problem solving sub items it is notice that 63.3 % of patient see that "they can find information about kidney disease from a variety of sources is least relevant for them. About the patient's response to seeking social support sub items, the table shows that 54.1% of patients see that "discuss questions and worries about the CKD with my family and/or friends" is least relevant for them.

Table(4-b) As noticed from the table (48.3%) of the patients have complete self efficacy. T = 29.250.

Table(5-a) table revealed that highest proration of patients very applicable for them, avoid artificial ingredients, keep fat low intake, drink water daily and keep salt intake low, they represent 71.6%, 68.3%, 66.7% and 66.7% respectively as related to dietary regulation sub items. About the food safety highest percentage 71.6 % were check calories and sodium content when buying food and Check for lack of artificial ingredients in processed or kneaded foods. Regarding to exercise regulation, they don't use a car

to go short distance; and exercise daily were the not applicable behavior among patients. it represent 73.3% and 57.5% concerning to stress prevention the very applicable behavior were Laugh away annoyances and When feeling defeated, take a rest and try again they represent 60.8% and 55 % of patient. In relation to habit regulation the very applicable behaviors were make time for prayer and read books – watch movies they represent 75% and 68.3%.

Table (5-b) it observed from the table 60% of the patients has desirable universal self care.

Table (6-a) The table shows that the very applicable behaviors among patients were, Avoid measuring blood pressure with the arm used for blood shunt, don't bear scratches on the skin they represent 100% and 83.3 %. Concerning to shunt preservation. As regard to therapeutic diet implementation very applicable behaviors were Keep to the prescribed diet for hemodialysis treatments, Keep to a physician's recommended food intake and Consume fruit according to a physician's advice.91.7, 75 and 75 respectively. Concerning to observation of care instruction the vey applicable behaviors were on specified days, measure the amount of urine produced, on specified days, preserve all urine produced during that day and always undergo hemodialysis on the set days. They represent equal percent 100%.

Table (6-b) as observed from the table 76.7 % have desirable level of health deviation self care. There was highly significant difference p =.000.

Table (7) the table shows that there was high significant relation among health locus of control, self efficacy and self care abilities. And also there was high significant relation between self efficacy and self care abilities.

Discussions

The hemodialysis regimen required to treat ESRD can be extremely rigid, requiring individuals to adapt to and cope with multiple acute and chronic stressors. Stressors for individuals on hemodialysis can be treatment such as dietary and fluid restrictions and ingesting handfuls of medications, or psychosocial in nature such as alterations in sexual function, changes in self perception, and fear of death. Individuals on center hemodialysis are typically connected to a machine three days a week for four or five hours at a time. They must adhere to the center's rigid schedule for use of the machine, and must adjust their lives around the dialysis schedule.

Socio- demographic characteristics of the study sample

The present study revealed that more half of the study sample were males and one third of the study sample in age group 40-50 years. in addition more half of the study sample were married. This result similar

to **Al-Garni (2007)** he assess of Health-Related Quality of Life Among End-Stage Renal Disease (ESRD) Adult Patients Undergoing Hemodialysis at the Eastern Region. He found that the majority fell between 37-51 years old. Half of the sample were males In addition, the majority of the sample were married.

The results explain that the highest percent of the study sample were employee and house wife and have inadequate income this may be expensive price of medication, transportation, in addition the most patients have part time work hours due to their illness.

This result is similar to **Nasiri, et al. (2013)** they determining stressful factors, coping methods and quality of life had been done in hemodialysis patients. They found that Most of the samples express that the income of all the family does not have enough living expense.

Concerning hemodialysis experience the result explain that half of the study sample have two sessions/ week highest proration of the patients have 3.00 hours/ session. This result is contradicting with **Sayed, et al., (2014)** they assess socioeconomic burden of hemodialysis on ESRD patients in suez canal cities & EL Arish. they found that more half of patients go to dialysis unit in 3 days per week. Half of patients stay for 4 hours per day.

Concerning to laboratory investigation the result shows that mean serum albumin level was 4.0 ± 0.5 g/dl, mean serum phosphate 5.1 ± 1.6mg/dl, mean serum calcium level 8.8 ± 0.6 mg/dl, and haematocrit was 32.9 ± 2.3.

These findings were similar by those of **Chiu, et al.,(2009)**, who found in their study that, laboratory data corrected serum calcium, mg/dl 9.4 ± 0.6, serum phosphorus, mg/dl 5.2 ± 1.4, serum parathyroid hormone, pg/ml 264 ± 176, serum bicarbonate, meq/La 27 ± 3, and serum albumin, g/dl 3.9 ± 0.5. Anemia was due to decrease amount of proteins intake which plays an important role in blood components which leads to decrease in the percentage of RBCs in total blood (haematocrit) and electrolyte disturbances due to decrease amount of fluid intake and diminished the normal filtration of the excretion that occurs only with dialysis.

Health locus of Control among patients with End Stage Renal Disease Undergoing Hemodialysis

The finding of this study denote that the highest proportion of patients have apparent level internal health locus control. This is notice in highest percentage of the study sample agree to strongly agree that, they are directly responsible for their health, and wrong with health is their fault. This may be due to they are used problem-focused strategies, and have a desirable self care abilities, they are realize change in

their life style, as well as they are accept diet, fluid, social restriction.

This result is similar to **Mane, and Shinde., (2014)** they stated that Life on dialysis (ESRD) shows similarities with other chronic disorders in that there are threats to autonomy, and changes in functional status. So the patients cope to maintain control in his life.

Also the result is consistent with **Paraskevi, (2011**) he examine health.

beliefs in ESRD patients and their relation to quality of life and mental health and found that regarding health beliefs, hemodialysis patients indicated a greater preference to the internal dimension focusing more on their own personal control to regulate their health condition.

This explanation is agreement with **Catherine (2011**) he assess stressors and coping among 50 hemodialysis patients and found that most common coping methods used by patients with ESRD, problem focused coping " include accepting the situation tried to keep the situation under control.

In assessing patients response to chance sub items the result explain that two third and half of patients strongly disagree to disagree that" when they are sick, they just plain luck" and" it seems that they health is greatly influenced by accidental happening "they may be due the patients have a internal locus of control and they have been experience role limitation due to physical problems while they are compliance with treatment. In addition all patients of hemodialysis realized that they are dependent on dialysis machine and family caregivers so that they are very careful to prevent deterioration in their health status and they are not dependent on external force.

This explained is consistent with **John, and Thomas (2013)** explained that patients with ESRD receiving hemodialysis evolving emotional and psychological state indicated that patient's became aware of a new set of circumstances: an uncertain future, demands of illness, dependence of machinery, medication, and healthcare provider.

As regard to external health locus of control (doctor and other) the finding of the present study clarified that more than four-fifths of the patients agree "that if they see an excellent doctor regular, they are less likely to have health problems. " this may be due to prevailing concept in Egyptian culture the professors doctors are more able to provide accurate diagnosis and offered medication which have less side effects. As well as treatment in health Insurance depend on decision from professor. This result consistent with **Al Nazly. et al.,(2013)** stated that patients used to talking the problem over with a professional person (such as doctors, nurse, minister, teacher, or counselor).

The result explain more half of the study sample disagree that the type of care they receive from other people is what is responsible for how well they recover from an illness. They may be due to the patients have a accurate knowledge about hemodialysis treatment and they are mature enough to know social support lessen the impact of illness only. This result disagreement with **Tilden, Nelson, & May., (2008)** explained that one of the primary ways of people to cope with chronic illness is by using social support. However; the role of social support in adaptation to chronic illness is unclear.

Level of Health locus of control among patients with End Stage Renal Disease Undergoing Hemodialysis.

The present study explained that the highest percent of patient have high health locus of control, this reflect the patient have been compliance with hemodialysis treatment.

This result is contradicting with **Coccossis, et al., (2008)** they found that the hemodialysis patients with more than 4 years of treatment have the lowest mean score, of health locus control while hemodialysis patients who had recently commenced treatment have the highest mean score of health locus control.

Self efficacy among patients with End Stage Renal Disease Undergoing Hemodialysis

The result of present study denote that highest percentage of the patients have a sense of autonomy, this may be due they are identify that the hemodialysis prolong their life, there is a significant reduction in quality of life, as well as they have been engage in active coping with limitation result from dialysis.

The result explain that the highest proportion of patients most relevant for them were asking care provider about their current condition, talking with physician about his disease and they can do whatever is necessary to have their questions about my CKD answered. They may be due to all patients have intense change in their daily life, unable to perform ordinary action, have uncertainty about the future, and they are worry about their job, and marriage. So that they are interested to know every things about hemodialysis to overcome complication of treatment as well as to decrease burden of care on their families.

The result is agreement with **Aziz Fini, et al., (2011)** explained that patients information about disease improved quality of life, enhanced self efficacy, confidence of care continuation, coping with disease and decreased disease symptoms.

This result in the same line with **Cassandra, (2009**) he explain one of the coping strategies' among patient with renal disease is maintaining positivity through gaining knowledge on disease relevant issue and life style modification.

About the self – integration the result explain that more than half of study sample they can participate in appropriate social activities. They may be due the patients have been adjust with their illness and have been engage in normal daily activities.

This result is contradicting with **Bapat, Kedlaya, & Gokulnath., (2009)** they assess physical and psychological stressor among hemodialysis they found that physiological changes that patients had experienced as the result of hemodialysis treatments, such as fatigue, lack of energy, and muscle cramps, restricted the lives of participants in family and social events.

The result shows that only quarter of study sample the most relevant for them adjustment to self management of their chronic kidney disease to fit a new situation this may be due to the new situation such as wedding, birth celebration and visit out- side home, they occur suddenly, the patients need to enjoy in spite of disease limitation as well as they dislike sympathy from other personnel.

This result and explanation similar to **Kaba, et al., (2007)** they explore problems experienced by patients on hemodialysis in Greece, and pointed out Grecian patients on dialysis realized they could not easily visit taverns and socialize with friends the same as they had before CKD because of dietary and fluid restrictions.

Concerning to problems solving sub items the results revealed that more than half of the study sample actively seek out necessary precautions to prevent worsening, this may be related to the most of patients are reliance on the family caregiver, suffering from restricted life, loss of freedom, in addition they complain from their physical symptoms negatively affected their ability to keep their jobs or switch to another job.

This result similar to **Moattari, et al., (2013)** they explain that self-efficacy can have great value because feelings of competency can have greatly impact a patients' mental status. This in turn, can affect their ability to overcome problems they encounter.

The result of the study explain that less than two third of the study sample reported that " they can find information about kidney disease from variety of sources " is less relevant for them this may be due to they have a trust relationship with treatment team and there a lack of in-services education at hospital. As well as the patient not have confidence in other sources such as brochure, internet and magazine. This result is disagreement with **(Sastaric, & Sprah., (2007** they review common psychosocial problems in cancer patients and their possible coping strategies, and pointed out that every cancer patient searches for the information about the identity, consequences and

causes of an illness, time line and the cure. These components of common sense representations tend to be reasonably stable over time and across different illness episodes.

Also the result disagreement with **Nasiri**, **et al., (2013**) they determining stressful factors, coping methods and quality of life among hemodialysis patients. They found that patients with problem-oriented coping method they addressing some issues such as searching for more information about disease.

As regard to seeking social support sub items the result revealed that half of the study sample the least relevant for them is discussion their questions and worries about chronic renal failure with their families and friends. this may be due to they have strong desire to lessen psychological impact of illness on their family, this result indicate that the patients use problems solving approach in coping with their illness as well as they aware by the disruption in family routine.

This result not consistent with **Vardanjani, et al., (2013**) assess association between depression, perceived social support, with treatment adherence behaviors of the patients on maintenance hemodialysis. They found that most of patients like to talk about their stressors to their families and are more adherences to diet and fluid restriction.

Level of self efficacy among patients with end stage renal disease undergoing hemodialysis

The result explain that high proportion of the study sample have complete and mild self efficacy this may be due to the highest percent of patient have high level of health locus control. They have autonomy to overcome restriction result from dialysis. This result denote that most of patient are adherence with treatment.

This result is similar to **Weng, et al., (2010**) they assess Selfefficacy, selfcare behaviors and quality of life of kidney transplant recipients. They found that most of patients have a complete self efficacy to perform self care.

This result is contradict with **Rayyani, et al., (2014**) they conducted study to assess self-care self-efficacy and its relationship to quality of life in hem dialysis patients in South-East of Iran. They found that showed that patients were moderately have self efficacy to perform self-care behaviors related to the illness.

Relationship between health locus of control and self efficacy

The result shows that there was highly a significant relation between health locus control and self efficacy among patient undergoing hemodialysis this may be due to the patients acknowledge that they are depend on dialysis machine long life, experience

complication during and after dialysis session. Furthermore they satisfied by their fate of illness.

This result is consistent with **Takeda, (2015)** he assess relationship between perceived self-efficacy, coping behavior, response to stress, and the health locus of control (HLC) among junior high school students who were hospitalized for renal disease. He found that a positive correlation was found between self-efficacy and HLC in the student with renal disease.

This result is disagreement with **Tang, & Kwok., (2004)** they assess the associations among self-efficacy, health locus of control, and psychological distress in 159 elderly Chinese women who had chronic physical illnesses.

They found that health control beliefs and general self-efficacy did not interact with each other, but each exerted their main effects on participants' level of psychological distress.

Universal self-care among patients with End Stage Renal Disease Undergoing Hemodialysis

The finding of this study revealed the highest percentage of the patients undergoing hemodialysis have been adherence to diet restriction, they very careful to avoid artificial ingredients, check sodium, calories content, keep fat and salt low this may be due to the adherence with general guide lines for managing complication from hemodialysis such as Increased feeling of thirst, High blood pressure, difficulty breathing, uremia and Weak, painful, weak bones. this result is consistent with **Gica balaga**, (**2012)** he assess self-efficacy and self-care management outcome among 50 patients undergoing hemodialysis Patients were able to adjust to their diet whenever they were ill and were able to follow their diet while away from home or even when stressed or troubled. They limit their intake of high sodium content foods such as canned goods, cured meat and fast foods and intake of high potassium foods such as oranges, peanuts, avocados and potatoes.

This result is contradicting with **Ahrari, Moshki, and Bahrami.,** (**2014)** they assess relationship between the social support and adherence to dietary and fluid restrictions in 237 hemodialysis patients eastern region of Iran they found that most of the patients have had a moderate rate of non adherence to dietary and fluid restrictions.

About the exercise regulation the result explain that highest percentage of patients have sedentary life style, less than three quarter of the study sample Use motor vehicle (bus, care,train) than walk even for short distance also half of patients they did not practice physical exercise at all.

This may be related to complication hemodialysis as well as patients are afraid from practice exercise, they said they preserve their

physical ability to their work. This result is similar to **Girija, & Radha., (2013)** they found that hemodialysis patients are significantly less active than healthy, sedentary individuals and a low intrinsic motivation has been identified as a major barrier to prescribing exercise in their study.

Concerning to stress prevention and habit regulation the result explained that high frequency of the patients the very applicable for them were make time for prayer and use a humor (laugh away annoyances and insult) this may be due "accepted the dialysis because very little could be done" as well as praying give them feeling of strength, fairness, rest. Furthermore laugh in stressful situations lessen the severity and give pushing to continuing in the life.

This result is similar to **Parvan, et al., (2015)** they evaluate the coping strategies to stress among patients undergoing hemodialysis (HD) and peritoneal dialysis (PD) at the Imam Reza Educational-Medical Hospital they found among the 10 most frequently used components, the highest coping strategy in both groups was "Prayer and trust in God and one of helpfulness coping strategies 'is tried to keep a sense of humor.

Also this result in the same line with **Cinar, Barlas, & Alpar., (2009) and Welch, & Austin, (2007)** they found hemodialysis patients hemodialysis patients western countries preferred coping strategy that was turning to religion. Additionally humor in one type of coping with stress among hemodialysis patients. The result shows that more than half of the study sample very applicable for them reading books – watching movies and take rest and try again when they feeling defeated, this reflect the patients have been adjusted with their condition and resume their life with disease limitation.

Health-deviation self-care among patients with End Stage Renal Disease Undergoing Hemodialysis

The results of the present study revealed that the patient have been adherence to treatment guidelines " they are very careful to undergo hemodialysis on the set day, carry out the doctor order regarding measure and preserve urine specimen, and consume medicine at specified time " this may be due to they are accepting situation, facing complication of dialysis, gaining support from health team and their families additionally they are realize that the adherence associated by good quality of life.

This result is similar to **Llana, Remor, & Selgas, (2013) they** determine the relationship between adherence, emotional state, depression, anxiety, and perceived stress, and health related quality of life (HRQOL) in renal patients undergoing dialysis**.** They found patients on peritoneal dialysis

reported higher general adherence to treatment than hemodialysis patients

Also this result similar to **Al-Khattabi, (2014)** he identify the prevalence of adherence to hemodialysis attendance, medications, fluid restrictions, and diet restrictions among hemodialysis patients at governmental kidney centers in Makah city in Saudi Arabia**.** He found that nearly half of patients were adherent to dialysis sessions. The highest adherence rate was for diet restriction and the lowest was for attendance to dialysis sessions.

This result is contradicting to **Chironda, et al., (2014)** examine the relationship between perceived physical health and level of adherence to hemodialysis among 85 ESRD patients. They found that more half of their study sample missed most of the sessions and only 1.2% attain high score level of adherence.

Concerning to therapeutic diet implementation the most of patients are adherence to diet they "keep prescribed diet, consume fruit and food according to doctor order. this may be due to they identify the risk of non adherence such as uremia,muscle aches, poor healing of wounds poorly controlled blood pressure and excessive thirst.

This result is disagreement to **Hashemi, et al., (2015)** they assess adherence to dietary regimens among patients receiving hemodialysis they found that most patients had poor dietary adherence. Also this result is not accordance with **Shailendranath**, **Ushadevi**, & **Kedlaya., (2014)** they assess Impact of Knowledge, Attitude and Behavior among maintenance hemodialysis Patients for adherence to dietary regimen. They found that 80% of patients have moderate scoring to diet adherence.

Regard to shunt preservation all patient instructed by no tight sleeves, no watch, bracelet, nothing to hinder circulation and avoiding measuring blood pressure with arm used for blood flow, It is observed from the result the most patients continue to keep elevated to reduce swelling/bruising, signs of infection could be pain, swelling, draining, warmer than other extremity and do not scratch on their skin this may be they need to decrease possibility of infection this may be due to the patient follow doctor guidelines. As well as the patient perceive a shunt is an access for maintaining life.

This result is similar to **Atashpeikar, Jalilazar, & Heidarzadeh (2011)** they assess self care ability among hemodialysis patient they found the two third of patient have desirable self care abilities regarding vascular access. About the therapeutic diet implementation the result reflect the most of patients have been adherence to diet restriction this may be due to the patient avoid complications such as fluid overload, increase urea, bone disease, and weight gain.

This result is disagreement with **Kugler**, **Maeding**, & **Russell**., (**2011**) compared non-adherence (NA) to diet and fluid restrictions between adult US and German hemodialysis patients, they found that most of patients in both group have non adherence to diet restriction

Level of self care abilities among hemodialysis (universal – deviation)

The result shows that more than half of study sample have desirable self care regarding universal and health deviation self care. This may be due to most of patient have a strong desire to minimize complication of dialysis as well as they are keen to assume daily living activities.

Table (1) Socio demographic characteristics and medical history of patients with End Stage Renal Disease Undergoing Hemodialysis under study

Items	No	%
Gender		
Male	66	55
Female	54	45
Age		
20 - 30	20	16.7
30- 40	25	20.8
40- 50	40	33.3
+ 50	35	29.2
Mean ± SD 32.08± 7.66		
Marital status		
Single	15	12.5
Married	70	58.3
Divorced	26	21.7
widowed	9	7.5
Educational level		
Illiterate	32	26.7
Elementary	29	24.2
Secondary	37	30.8
University	22	18.3
Occupation		
Student	15	12.5
Employee	46	38.3
House wife	38	31.7
Don't work	12	10
Retired	9	7.5
Income		
Adequate	30	25
Inadequate	90	75
Years of HD experience	29.8±44	
Frequency of HD		
Two sessions/week	60	50
Three sessions/week	48	40
Four sessions/week	12	10
Duration of HD session		
3:00 hours/session	84	70
4.00 hours \ session	36	30
Average Years of Dialysis		
1 – 3 years	30	25
3 – <5 years	70	58.3
+ 5 years	20	16.7
Mean ± SD 29.8±44		

2-Means and standard deviations of laboratory findings

Items		Mean ± SD
Glomero-filtration rate GFR	(ml/min per 1.73 m^2)	33.4 ± 23.7
Serum albumin (g/dl)		4.0 ± 0.5
Hemoglobin concentration (mg/dl)		10 ± 2.3
Serum creatinine (mg/dl)		2.8 ± 1.9
Phosphate (mg/dl)		5.1 ± 1.6
Calcium (mg/dl)		8.8 ± 0.6
Parathyroid hormone (pg/ml)		229 ± 199
Dialysis urea		1.5±0.3
Haematocrit		32.9±2.3

Table (3-a): Health locus of control among patients with End Stage Renal Disease Undergoing Hemodialysis

	SD		MD		D		A		MA		SA	
Internal	**no**	**%**	**no**	**%**	**N0**	**%**	**N0**	**%**	**N0**	**%**	**N0**	**%**
If I become sick, I have the power to make myself well again.	8	6.6	11	9.2	12	10	40	33.3	17	14.2	32	26.7
I am directly responsible for my health.	12	10	10	8.3	22	18.4	60	50	6	5	10	8.3
My physical well-being depends on how well I take care of myself.	6	5	29	24.2	12	10	40	33.3	13	10.8	20	16.7
When I feel ill, I know it is because I have not been taking care of myself properly	0	00	11	9.2	23	19.2	45	37.4	9	7.5	32	26.7
Whatever goes wrong with my health is my own fault.	6	5	5	4.2	33	27.5	55	45.8	11	9.2	10	8.3
I can pretty much stay healthy by taking good care of myself.	0	00	0	00	10	8.3	10	8.3	30	25	70	58.4
Chance												
Often I feel that no matter what I do, if I am going to get sick, I will get sick.	22	18.3	19	15.8	25	20.8	25	20.8	9	7.5	20	16.7
It seems that my health is greatly influenced by accidental happenings.	10	8.3	12	10	39	32.5	21	17.5	20	16.7	18	15
When I become ill, it's a matter of fate.	9	7.5	20	16.7	25	20.8	37	30.8	15	12.5	14	11.7
Even when I take care of myself, it's easy to get sick.	8	6.7	14	11.7	30	25	19	15.8	37	30.8	12	10
When I am sick, I just have to let nature run its course.	10	8.3	30	25	38	31.7	18	15	24	20	0	0
When I stay healthy, I'm just plain lucky	32	26.7	8	6.7	12	10	24	20	16	13.3	28	23.3
Doctor												
I can only maintain my health by consulting health professionals.	30	25	15	12.5	15	12.5	23	19.2	19	15.8	18	15
If I see an excellent doctor regularly, I am less likely to have health problems.	5	4.2	10	8.3	20	16.7	14	11.7	34	28.3	37	30.8
Following doctor's orders to the letter is the best way for me to stay healthy.	16	13.3	14	11.7	18	15	16	13.3	24	20	32	26.7
Other												
The type of care I receive from other people is what is responsible for how well I recover from an illness.	36	30	13	10.8	18	15	20	16.7	16	13.3	17	14.2
Other people play a big part in whether I stay healthy or become sick.	23	19.2	12	10	28	23.3	10	8.4	10	8.3	37	30.8
Health professionals keep me healthy.	20	16.7	18	15	22	18.3	20	16.7	15	12.5	25	20.8

Table (3-b): Level of Health locus of control among patients with End Stage Renal Disease Undergoing Hemodialysis

Level of health locus control	No	%	Mean ± SD	T test
Low health locus control **18 - <54**	44	36.7	13.35± 18.87	**22.19**
High health locus control **54 – 108**	76	63.3	51.89±41.34	**39.72**

Table (4-a) Self efficacy among patients with End Stage Renal Disease Undergoing Hemodialysis

	least relevant		somewhat relevant		quite relevant		most relevant	
autonomy	No	%	No	%	No	%	No	%
I can accept having CKD	7	5.8	20	16.7	30	25	63	52.5
I am comfortable talking with a physician about his CKD	9	7.5	14	11.7	28	23.3	69	57.5
I can face the challenges of living with CKD	12	10	28	23.3	35	29.2	45	37.5
I am comfortable telling others that I have CKD	37	30.8	32	26.7	36	30	15	12.5
I can do whatever is necessary to have my questions about my CKD answered	15	12.5	20	16.7	19	15.8	66	55
I am comfortable contacting my doctor at any time with questions about my medication	17	14.2	30	25	24	20	49	40.8
I can comfortably ask providers about my current disease condition	0	0	21	17.5	19	15.8	80	66.7
I can actively share my experience of managing the CKD with others patients	10	8.3	19	15.8	29	24.2	62	51.7
self-integration								
I can adhere to my diet plan recommendations even when I eat out	10	8.3	38	31.7	28	23.3	44	36.7
I can choose appropriate foods during social activities	12	10	35	29.2	25	20.8	48	40
I can adjust the self-management of my CKD to fit new situations	26	21.6	38	31.7	26	21.7	30	25
I can make dietary changes when advised to do so by my provider	22	18.3	30	25	26	21.7	42	35
I can manage my CKD in order to stay healthy	10	8.3	38	31.7	28	23.3	44	36.7
I can participate in appropriate social activities	9	7.5	20	16.7	21	17.5	70	58.3
problem solving								
I can understand the meaning of relevant laboratory data	14	11.7	38	31.7	43	35.8	25	20.8
I can seek out information that explains CKD-related signs and symptoms	24	20	30	25	34	28.3	32	26.7
I can find information about kidney disease from a variety of sources	76	63.3	17	14.2	15	12.5	12	10
I can actively understand the risk factors associated with CKD	12	10	24	20	36	30	48	40
I can find resources needed to better control my CKD	41	34.2	19	15.8	38	31.7	22	18.3
I can actively seek out necessary precautions to prevent my CKD from worsening	0	0	20	16.7	30	25	70	58.3
seeking social support								
I can find help when I am feeling stressed	16	13.3	29	24.2	42	35	33	27.5
I can discuss my questions and worries about the CKD with my family and/or friends	65	54.1	17	14.2	18	15	20	16.7
I can ask family or friends for help when I am feeling helpless or frustrated	25	20.8	20	16.7	45	37.5	30	25
I can actively discuss my treatment plan with my family and/or friends to gain their support	46	38.3	28	23.4	33	27.5	13	10.8

Table(4-b) Level of Self efficacy among patients with End Stage Renal Disease Undergoing Hemodialysis

Level of self efficacy		No	%	Mean ± SD	T test
No self efficacy	< 25	21	17.5	3.67±8.05	41.646
Mild self efficacy	25 - 50	41	32.2	12.65±18.07	25.145
Complete self efficacy	+50	58	48.3	38.18±40.56	29.250

Table (5-a) Universal self-care among patients with End Stage Renal Disease Undergoing Hemodialysis

	Very applicable.		Somewhat applicable		minimally applicable		not applicable at all,	
	no	%	no	%	no	%	no	%
Dietary regulation	72	60	20	16.7	16	13.3	12	10
Do not eat late at night	70	58.3	36	30	14	11.7	0	00
Keep salt intake low	80	66.7	40	33.3	0	00	0	00
Do not full my stomach even I am hungry	64	53.3	35	29.2	21	17.5	0	00
Keep sugar intake low	68	56.7	31	25.8	14	11.7	7	5.8
Always drink water after the bath	50	41.7	24	20	22	18.3	24	20
Consume less-sweet foods	58	48.3	32	26.7	26	21.7	4	3.3
Eat home-prepared meals	70	58.3	36	30	14	11.7	0	00
Drink water daily	80	66.7	29	24.2	11	9.2	0	00
Always drink water after exercise	48	40	42	35	17	14.2	13	10.8
Keep fat intake low	82	68.3	33	27.5	5	4.2	0	00
Do not snack between meals	70	58.3	23	19.2	22	18.3	5	4.2
Avoid artificial ingredients(preservatives, chemical flavorings agents)	86	71.6	18	15	11	9.2	5	4.2
Food safety								
Check calories and sodium content when buying food	86	71.6	25	20.8	9	7.5	0	00
Check the nutrition information panel when buying food	50	41.7	30	25	24	20	16	13.3
Check the use-by date of food when shopping	46	38.3	19	15.8	29	24.2	26	21.7
Check for lack of artificial ingredients in processed or kneaded foods	86	71.6	18	15	11	9.2	5	4.2
Take care to eat a balanced diet	68	56.7	20	16.7	18	15	14	11.6
Exercise regulation								
Walk often	29	24.2	39	32.5	30	25	22	18.3
Do not use a car to go short distances	88	73.3	32	26.7	0	00	0	00
Use stairs rather than the elevator. Use stairs to climb one or two floors	42	35	31	25.8	15	12.5	32	26.7
Exercise daily(jogging,running, walking, radio aerobics,	15	12.5	14	11.7	22	18.3	69	57.5
Use the car, or bus rather than walk, even for short distances	87	72.5	5	4.2	28	23.3	0	00
Stress regulation								
If made to feel unhappy, attempt to calm down as soon as possible	42	35	36	30	33	27.5	9	7.5
Use methods to avoid getting angry	36	30	29	24.2	15	12.5	40	33.3
Laugh away annoyances and insults	73	60.8	15	12.5	24	20	8	6.7
Avoid arguing and stressful confrontations	55	45.8	35	29.2	18	15	12	10
Remember that each person is individual, and do not get too angry	34	28.4	31	25.8	22	18.3	33	27.5
If your health condition is pointed out by another person, take extra care	61	50.8	42	35	11	9.2	6	5
Express your opinions without offending other people	51	42.5	31	25.8	20	16.7	18	15
When feeling defeated, take a rest and try again	66	55	23	19.2	24	20	7	5.8
Avoid lying and insulting people, to keep the mind	56	46.7	31	25.8	13	10.8	20	16.7
Habit regulation								
Make time for prayer - religious activities	90	75	20	16.7	10	8.3	0	00
Read books – watches movies	82	68.3	30	25	8	6.7	0	00
Reduce or stop smoking	20	16.7	25	20.8	0	00	0	00
Practice safe sex	22	18.3	13	10.8	0	00	0	00

Table (5-b) Level of Universal self-care among patients with End Stage Renal Disease Undergoing Hemodialysis

Level Universal self-care	no	%	P
Undesirable	48	40	.000
Desirable	72	60	

Table(6-a)Health-deviation self-care among patients with End Stage Renal Disease Undergoing Hemodialysis

	very applicable.		Somewhat applicable		minimally applicable		not applicable at all,	
	no	%	no	%	no	%	no	%
Shunt preservation								
Keep the blood shunt area clean	88	73.3	32	26.7	0	00	0	00
Watching out for reddening pain or swellings	72	60	30	25	18	15	0	00
Avoid carrying heavy weights with the arm used for blood shunting	90	75	21	17.5	9	7.5	0	00
Avoid resting your head on the arm used for blood shunting	74	61.6	24	20	22	18.3	0	00
Avoid measuring blood pressure with the arm used for blood shunt	120	100	0	00	0	00	0	00
Do not bear scratches on your skin	100	83.3	20	16.7	0	00	0	00
Gargle every day in order to prevent colds	56	46.7	14	11.7	24	20	26	21.6
Maintain distance when talking with people who have colds	64	53.3	34	28.3	11	9.2	11	9.2
Wear a mask when colds are prevalent	76	63.3	18	15	11	9.2	15	12.5
Avoid rubbing the area of the blood shunt or applying hot towels	80	66.7	28	23.3	12	10	0	00
therapeutic diet implementation								
Keep to a physician's recommended water intake	75	62.5	25	20.8	20	16.7	0	00
Keep salt intake to within the limits prescribed by the physician	70	58.4	40	33.3	10	8.3	0	00
Keep to a physician's recommended food intake	90	75	25	20.8	5	4.2	0	00
Consume fruit according to a physician's advice	90	75	25	20.8	5	4.2	0	00
Keep calories to within the limits prescribed by the physician	72	60	36	30	12	10	0	00
Keep to the prescribed diet for hemodialysis treatments	110	91.7	10	8.3	0	00	0	00
Keep sugars(sweet things, rice)to a minimum	67	56.8	30	25	20	16.7	3	2.5
Consume plenty of foods containing vitamins B and C	77	64.1	27	22.5	11	9.2	5	4.2
observations of care instructions								
On specified days, measure the amount of urine produced	120	100	0	00	0	00	0	00
On specified days, preserve all urine produced during that day.	120	100	0	00	0	00	0	00
Avoid doing heavy work with the arm used for blood shunting	83	69.2	22	18.3	8	6.7	7	5.8
Avoid eating foods you are allergic to	96	80	10	8.3	5	4.2	9	7.5
Always undergo hemodialysis on the set days.	120	100	0	00	0	00	0	00
Consume medicine at times specified by the physician	98	81.7	22	18.3	0	00	0	00
Avoid immersing the biopsy wound in a bath until it is healed	78	65	23	19.2	19	15.8	0	00

Table (6-b) Level of Health-Deviation self-care among patients with End Stage Renal Disease Undergoing Hemodialysis

Level of Health-Deviation self-care	no	%	p
Undesirable	28	28.3	**.000**
Desirable	92	76.7	

Table (7) Relationship between locus of control with self efficacy and self care ability

Variable	R	T	P
Relation between health locus of control and self efficacy	.315	23.082	.000
Relation between health locus of control and self care abilities	.053	3.580	.001
Relation between self efficacy and self care abilities	.146	4.297	.000

This result in the same line with **Atashpeikar, Jalilazar & Heidarzadeh., (2011)** they assess self care ability among hemodialysis patient they found more half have desirable self care abilities in overall self-care ability.

Relation between locus of control and self care abilities

The result explained there was a positive relation between locus of control and self care abilities this may be due to patient have internal power to overcome complication of dialysis and decrease their dependency on other, as well as they usually struggle with life demons moreover they gain more power from religious activities.

This result is similar to **Shintani (2014)** assess the relationship between the components of hemodialysis patients' self-care and health locus of control**.** he found that self-care scores for dietary behavior, stress prevention, and confirmation of food safety were all significantly higher for external control than for internal control.

Relation between self efficacy and self care abilities

The result explain that there was a positive relationship Relation between self efficacy and self care abilities this may be due to that the patients have a motivation to improve their own health status, reduce stress and improving psychological wellbeing.

This result is similar to **Rahimi, et al., (2014)** they assess effect of self care education on self efficacy in 60 patients undergoing hemodialysis and found that here was a significant relation between level of self care and self efficacy, by increasing self -care, self efficacy is also increasing.

Conclusion

The present study concludes that Hemodialysis patients with high locus of control have high level of self efficacy and desirable level of self care abilities.

Recommendations

The present study recommends that

▪ Regular physical, psychiatric assessment and counseling for hemodialysis to promoting physical and mental health of these patients.

▪ Future research to describe the association between hemodialysis patient self-management behaviors, functioning and well-being.

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