



ISSN Print: 2664-6188  
ISSN Online: 2664-6196  
Impact Factor: RJIF 5.35  
IJCBB 2022; 4(1): 27-31  
[www.biochemistryjournal.net](http://www.biochemistryjournal.net)  
Received: 11-01-2022  
Accepted: 16-02-2022

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## The effect of dialysis on the psychological state of hospital entrance in the renal centers

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### Abstract

The end stage renal disease is a worldwide problem that effect on many population in different countries and ends with either transplantation or hemodialysis. Patients pass in the dialysis according to the stage of renal disease and varied from one to three times a week and from one year to more than five years (Crook, 2012).

**Aim:** To predict the effect of hemodialysis on the psychological state of patients and the development of these patients according to response to the hemodialysis

**Methods:** Cross sectional study of 200 individuals (130male and 70female) were selected. It occurred at Al-Hakeem hospital between Oct 2018 and March 2019. Data collection base on interview with patient by our research staff and the unite in the diabetic center at al Hakeem hospital.

**Results:** Data showed that hemodialysis patient had most patients were unable to read and write followed by those who are able to read and write and most of them were induce hemodialysis from less than one year and induce twice times of hemodialysis per a week. Also the data indicate that the majority of them suffer from Glomerulonephritis and had a bad a moderate psychological state that not talk, not respond to relative and doctor instruction

**Conclusion:** The main causes of End Stage Renal Disease (ESRD) were the infection of glomeruli and nephropathic hyperglycemia. Most of patients are uneducated which may play a role in incidence of ESRD

**Recommendation:** A further study should be conducted to evaluate the outcome of dialysis and its effect on the patients

**Keywords:** End stage renal failure, nephropathic hyperglycemia, transplantation, hemodialysis, nephrotic, nephritic, glomerular filtration rate

### Introduction

It is well known that the kidney had a crucial rule in regulation of body volume and electrolyte disturbances in addition to regulation of excretion of metabolic and drugs and toxin waste products. It had a role in activation of an inactive vitamin D in to active one <sup>[1-4]</sup>. Many glomerular and/or tubular kidney problems attached this filtration organ. Some of them are induce a nephrotic, nephritic while other ends with arenal failure. Regardless the reasons and its prognosis, the diagnoses base on laboratory investigations, renal functions test (glomerular filtration rate: urea and creatinine with urea to creatinine ratio), biopsy, tumor markers and ultrasound investigations and finally CT scan to discover whether or not there is an anomaly <sup>[3, 4]</sup>. End stages renal diseases could be treated by hemodialysis or it not worked could be ends with organ transplantation <sup>[5]</sup>.

### Chronic Renal Failure <sup>[2]</sup>

CRF is a serious long-term condition that affects the kidneys and causes an increased and gradual loss of kidney function, eventually causing kidney failure in the final stage. In Chronic Renal Failure, renal function drops to less than 25% of the normal level. In this disorder that occurs over a period of years, the kidney gradually loses its ability to filter waste of the blood and disposed of in the urine, and as a result accumulation of toxins and fluids occurs in the body, leading to few symptoms at first.

In fact, you may not experience any symptoms until most kidney function is lost.

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**Signs and symptoms of chronic renal failure** [6]

In addition to general fatigue, fatigue and activity, symptoms can include rare passage of urine, Apnea, Nausea, Muscle spasm, back ache.

**Causes of Chronic Renal Failure** [7-10]

Diseases that often cause kidney malfunction are increase the glucose concentration and high pressure of the blood, especially if they are not controlled by treatment.

Other conditions that cause chronic renal failure are glomerulonephritis, polycystic kidney disease, recurrent cystic spondylitis, recurrent renal vasculitis, some drugs taken excessively over many years can destroy kidneys, as well as exposure to mercury and lead. Long-term obstruction of the renal tubules due to prostate enlargement can also lead to chronic renal failure

**Complications of Chronic Renal Failure** [11-16]

Changes in the chemical and fluid balance (electrolyte and aqueous) due to renal failure can cause complications in virtually all organs of the body, including the heart and nervous system.

Similarly, if potassium levels increase in the blood (because the kidney cannot get rid of excess potassium), it can cause cardiac arrest.

**Diagnosis of Chronic Renal Failure** [17-20]

- Blood tests to measure levels of minerals and salts (eg sodium, potassium, chloride, bicarbonate, calcium, magnesium, and phosphorus)
- Kidney function tests (such as urea, nitrogen and creatinine in the blood)
- A complete census to identify red blood cells (to detect anemia)
- 24-hour urine collection (creatinine and protein detection)
- Glomerular filtration rate and creatinine clearance

**Treatment of chronic renal failure** [21, 22]

Chronic renal failure occurs and when it increases, the function of renal completely impaired and you need to be a kidney or dialysis or kidney transplant.

**Dialysis** [23]

The dialysis could be hemodialysis and peritoneal dialysis: The peritoneum (membrane surrounding the organs of the abdomen) acts as a filtration device instead of the kidneys. It can be performed several times a day and the fluid changes every 4-6 hours. Blood is usually purified by removal a waste products and toxic materials as urea, creatinine and others

**Study design**

A study was conducted at the hemodialysis units (HDU) of AL-Hakeem hospitals in Najaf city between the November 2018 to January 2019.

Patients were selected who were available at the time of interview. A verbal permission was taken from these patients and/or their relatives. A questionnaire was prepared and included a general history, family diseases, drug regimen, and socioeconomic condition. A urea, creatinine,

blood glucose level were measured and data were analyzed statistically using SPSS program version 20.

**Target patients**

Patient who are selected were diagnosed by the senior as they suffer from end stage renal failure and referred to the hospital for dialysis as they progressed in renal problem from mild, moderate in to ESRD at which the ends with hemodialysis at Al-Hakeem hemodialysis center. They induce hemodialysis from two to three times a week at average of 3-4 hours per session

**Sample size**

Two hundred volunteer were chosen (130) male and (70) female) depending on that the incidence of chronic renal failure in Iraq was 20% (According to Iraqi Renal Registry report).

**Inclusion criteria**

Those included in this study are patient age ranged between (10-60) years who are under the hemodialysis through the arterio-venous fistula (AVF) in hemodialysis units.

**Exclusion criteria**

Those excluded in this study are: Peritoneal dialysis patients as they were very few patients also, Patient with below 10 years and above 60.

The question form was designed according to criteria of WHO scale [24]. It include the socio-demographic properties like (Age, sex, weight, height, Residence, Marital, Occupation promoters, year of education, Duration of hemodialysis and how many times for each of hemodialysis). The urinary infection is considered for 5 leukocytes per high power field in the urine culture.

Part two included items that focused on four domains: physical, social, psychological and level of independence

**Statistical analysis**

The data were analyzed by SPSS and the p value  $\leq 0.05$  was regarded to be significant in statistic session.

**Aim**

1. To determine the incidence of hemodialysis among patients of end stage renal disease
2. To identify renal problems that may lead to ESRD that eventually ends with hemodialysis.
3. To determine the association of socioeconomic factors with ESRD.
4. To determine the distribution of psychological state among patient of hemodialysis

**Results**

Table (1) reveals that those above sixty years represent more than thirty percent, the male was more than sixty five percent. More than fifty percent was married and about forty percent was not educated, five % had earned a university degree, and 1% were postgraduates, with regard to occupation, more than twenty percent was without a job. More than half of the patient was make dialysis less than a year and most of the total sample was perform the dialysis two times a week.

**Table 1:** Socio-Demographic property of the patients.

	Variable	No	Percent
Age/year	10-19	9	4.5
	20-29	26	13
	30-39	14	7
	40-49	44	22
	50-59	45	22.5
Gender	60-69	62	31
	Male	130	65
Marital state	Female	70	35
	Married	106	53
	Divorced	24	12
	Widow	12	6
Level of education	Single	58	29
	Unable to read and write	83	41.5
	Read and write	43	21.5
	Primary school	27	13.5
	Intermediate school	19	9.5
	Secondary school	16	8
	Collage school	10	5
Occupation	Post-graduate	2	1
	Retired	25	12.5
	Privet work	44	22
	Functionless	46	23
	Housewife	38	19
	Employed	29	14.5
Period of hemodialysis	More than two	18	9.0
	< 1 year	115	57.5
	1-2 year	36	18
	2-3 year	29	14.5
	> 3 year	16	8
Hemodialysis frequency	Other (longer time > 5 year)	4	2
	1/WK	24	12
	2/WK	136	68
	3/WK	40	20

In regard to kidney disease, the glomerular renal disease were found to be a main cause of end stage of the disease (39.5%), followed by Diabetic Nephropathy (DN) 31%

which contributed to about third of the cases, hypertension 18.5% and rest other. Obstructive neuropathy were about 2%, renal stones about 4% of the sample (Table 2).

**Table 2:** Types of the renal diseases

	Primary disease	No.	Percent %
1	Glomerulonephritis (GN)	79	39.5
2	Diabetic Nephropathy (DN)	62	31
3	Polycystic Kidney disease (PKD)	10	5
4	Renal Stone	8	4
5	Hypertension (HTN)	37	18.5
6	Obstructive uropathy (OU)	4	2
	Total	200	100

The psychological state of the quality of life for these patients had greatly affected. The prevalence of depression (mild, moderate and sever) while in this group was 85%. Forty eight percent of the total patients had a moderate

depression (96 patients) were not talk to their relatives or medical staff and not obey the doctor instructions and not take medications), while 5% had severe depression (Table 3).

**Table 3:** The psychological state of patient of hemodialysis.

	Psychological state	No.	Percent%
1	Good psychological state (sleep, rest, talk and others)	30	15
2	Mild depression (not talking)	32	16
3	Moderate depression (not talk, not respond to relative and doctor instruction)	128	64
4	Severe depression (aggressive behavior)	10	5
	Total	200	100

Most of cases of depression reported were among the young patients (More than 35 years-old) and was higher in male than female, Functionless and retired were 23% married

patients (10%). There was no statistical variation between educated and non-educated patients (Table 4).

**Table 4:** Distribution of bad psychological state among patient of hemodialysis.

	Variable	No.	Percent%
1	Patient aged more than 35	51	53.121
2	Female	13	13.54
3	Functionless and retired	22	22.9
4	Married	10	10.416
	Total	96	100

Patient were classified according to the awards in to those resident in the clear award from the hepatitis (77%) at which the room, instruments, hemodialysis devises and other were clear from hepatitis and those of room contain an infected instrument and devises (23%) (Table 5)

**Table 5:** Distribution of hepatitis state among patient of hemodialysis

	hepatitis infection	No.	Percent%
1	Positive hepatitis	46	23
2	Negative hepatitis	154	77
	Total	200	100

## Discussion

Chronic kidney disease represent more than 12% of the adult population in the world wild. The chronic kidney disease (CKD) usually progressed in deterioration until ends with end stage renal disease (ESRD). Ironically there is increase in cases of renal disease in Iraq and could reached to about two hundred thousand of Iraqi adults [25, 26].

Many of these ESRD patients reached to a level that their life could be ended without a hemodialysis and this increase to more than 9.1% in Egypt and 29.9% in Thailand [27, 28].

More than fifty percent (53%) were engaged, this was proved the same of Diepenbrock *et al.*, he found that out of 140 dialysis patients in Kelantan, more than three quarter were married [33], also, Rima revealed that more than sixty percent were have a partners [34]. forty one percent of dialysis patients were not educated [34]. Around nineteen of the total sample were housewives, Rima *et al.* showed the same of our finding [34], while AL-Jumaih *et al.* (2011) showed that forty three percent were retired [35] and Chen *et al.* found that more than three quarters didn't work (36). Many countries chowed that glomerulonephritis, elevated glucose and cardiac output as a causes of ESRD [37, 38].

More than fifty seven were on hemodialysis for less than one year. AL-Jumaih *et al.* (2011) said that that the time limit of on dialysis was five years in patients [35]. Finally, sixty eight percent of patients were on dialysis more than one time per year. Rima indicated most of his sample were make a dialysis about three times every seven days [34, 40].

Depression is the a major problem in patients with renal problems in Iraq and most of them showed non cooperatively with treatment and committing to the routine medical visiting [39].

In this study, eighty five percent of the total patients showed a severe depression. This is agreed with a Pakistani study [43].

According to the Iraq mental health survey, the incidence of disorders due to depression is 7.2% (45) which similar to other countries; Saudi Arabia, Egypt, and Sudan and it occurred more in young patients more than 35 years old [46-48].

Sixty-eight of the total patients showed a twice to three visiting to the hemodialysis center per a week (Table 1).

## Conclusions

- 1-The most regarded reason of (ESRD) was the glomerulonephritis and diabetic nephropathy was the second one.
- 2-most of patients are uneducated which may play a role in incidence of ESRD

## Recommendation

A further study should be conducted to evaluate the outcome of dialysis and it effect on human life

## Acknowledgements

Many appreciation staff of Al-Hakeem hospital especially the manager.

Funding's: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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