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A Cross-Sectional Study of Health Assessment and Pain Severity in Hemodialysis Patients

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Abstract

To assess the health status and severity of pain among patients undergoing hemodialysis. This cross-sectional study was conducted among patients receiving hemodialysis to evaluate their health status and pain severity. A self-administered health assessment questionnaire was used to collect information regarding participants' overall health, while pain intensity was measured using the Visual Analogue Scale (VAS). Eligible participants included individuals currently undergoing hemodialysis treatment. After obtaining informed consent, the questionnaires were distributed to the participants for completion. The survey consisted primarily of closed-ended questions, and the collected data were analyzed using quantitative methods. The findings were subsequently presented in the form of tables, charts, and figures to facilitate interpretation. A total of 150 subjects participated and out of which 48.0% (a frequency of 72) of them male and 52.0% (a frequency of 78) of them were female. To make the study more specific and particular the subjects were included above the age of 30. Concluded results are that the patients at the age of 30 to 45years were affected more. They had problem in performing daily life activities as per questionnaire parameter. Parameters, it is concluded that hemodialysis patients are suffering from Arthralgia and intact daily life activities. The conclusion shows that most of the patients had musculoskeletal pain.

Keywords: Pain, Intact Daily Life Activities, Renal Failure

Introduction

Hemodialysis is a restorative strategy to expel liquids and waste item from the blood or the filtering the blood of a man whose both kidneys are not working successfully regularly called essentially dialysis or kidney dialysis. Hemodialysis includes the essential objective to restores the intracellular and extracellular liquid condition that is the trade mark or nature of typical kidney work. Musculoskeletal scatters affect the practical status of patients. (1,2)

HD patients have been accounted for to have hoisted torment levels and weakened useful status. One of the principal self-presumed practical status (incapacity) measures known as Health Assessment Questionnaire (HAQ), it is utilized broadly worldwide. HAQ has been managed and approved for end renal stage patients and unending rheumatic sicknesses and it has additionally been utilized for patients with immune system ailments. (3,4)

By utilizing a dialyzer, the patient's blood is pumped outside the body by a counterfeit pump which ordinarily Comprises of fine systems of semi porous Membranes. The liquids and solute diffuses over the layer and the Dialysate streams towards outside these systems. Heparin ought to be given

before the methodology to keep blood from coagulating in the dialyzer. Access are by utilizing seldinger Arteriovenous fistula and Implantable join method focal catheter and Tunneled catheter (1) Risks of hemodialysis are Muscle cramps, Bonedisease, Amyloidosis (5,6)

Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage. There are several ways to categorize pain. One is to separate it into acute pain and chronic pain. Acute pain typically comes on suddenly and has a limited duration. It's frequently caused by damage to tissue such as bone, muscle, or organs, and the onset is often accompanied by anxiety or emotional distress.(7,8)

Chronic pain lasts longer than acute pain and is generally somewhat resistant to medical treatment. It's usually associated with a long-term illness, such as osteoarthritis. In some cases, such as with fibromyalgia, it's one of the defining characteristic of the disease. Chronic pain can be the result of damaged tissue, but very often is attributable to nerve damage.(9,10)

Both acute and chronic pain can be debilitating, and both can affect and be affected by a person's state of mind. But the nature of chronic pain -- the fact that it's ongoing and in some cases seems almost constant makes the person who has it more susceptible to psychological consequences such as depression and anxiety. At the same time, psychological distress can amplify the pain.(11,12)

Material & Methods

Study Design

Cross sectional study design.

Setting

Data was collected from Jinnah postgraduate medical center (JPMC) Karachi.

Sampling Technique

Convenient non probability sampling technique.

Sample Size

A sample size of 150 patients.

Duration of The Study

The duration of study was 6months, June to November.

Sample Selection

Inclusion Criteria

- Patients of both genders male and female.
- Patients going through the procedure of hemodialysis.
- Patients of age 30years above

Exclusion Criteria

The following criteria those were unwilling to participate.

1. Patients who were not going through from hemodialysis procedure.
2. Patients of the age of 29years or less.
3. Patients with mental illness who may give irrelevant information.

Data Collection Method

A face to face interview conducted and with an informed consent form.

Data Collection Instrument

HAQ (Health assessment questionnaire and VAS (Visual Analogue Scale) were used.

Data Analysis Procedure

Data is to be analyzed by using Statistical test for social sciences (SPSS), version20 were used for statistical analysis of the collected data. Descriptive statistics frequency, percentage and Chi-square test were used for analysis.

Budget

20,000Rs

Ethical Approval

- Subject were informed before the filling the questionnaire about research.
- Permission was taken from all subjects for the use of data for research publication.
- All the particular information of the subjects was kept confidential.

Results

After the completion of survey and filling of the questionnaire, about 150 subjects showed up. The structure of questionnaire was set under several major divisions which made it intimate for the study to focus on demographic data. A total of 150 subjects participated and out of which 48.0% (a frequency of 72) of them male and 52.0% (a frequency of 78) of them were female. A demographic data also based on frequency, duration. To make the study more specific and particular the subjects were included above the age of 30years.highest percentage in patientsage of 30 to 45 years.

When the participants were asked about that you can stand up from a straight chair, a frequency of 62 (41.3%) said that with much difficulty and 40 (26.7%) said with some difficulty and 38(25.3%) unable to do, a frequency of 10(6.7%) without any difficulty.

When the participants were asked about get in and out of bed u can, a frequency of 54(36.0%) said with much difficulty and 45 (30.0%) said unable to do. a frequency of 42(28.0%) said they can do with some difficulty; a frequency of 9 (6.0%) can do without any difficulty.

When the participants were asked can u cut your own meat, a frequency of 73 (48.7%) said they do with much difficulty, a frequency of 38 (25.3%) said they unable to do,28(18.7%) said they do with some difficulty, 11 (7.3%) said they do it without any difficulty.

When the participants were asked that u can raise up a glass or full cup to your mouth, a frequency of 74 (49.3%) said they do with some difficulty, a frequency of 46(30.7%) said they can do with much difficulty,26(17.3%) said they do without any difficulty, 4 (2.7%) said they unable to do.

When the participants were asked about that u can dress yourself, including shoelaces and buttons, a frequency of 26(17.3%) said they unable to do ,21 (14.0%) said they can do without any difficulty and57 (38.0%) said they had some difficulty and 46(30.7) said they had much difficulty.

When the participants were asked about that u can shampoo your hair a frequency of 57 (38.0%) said they can do with some difficulty, 46(30.7%) said that they can do with much difficulty, 26 (17.3%) said they unable to do, 21 (14.0%) said they can do without any difficulty.

When the participants were asked that u can lopen a new milk cartoon, a frequency of 2(1.3%) said they unable to do, a frequency of 25 (16.7%) said they can do without any difficulty,80(53.3%) said they do with some difficulty, 43 (28.7%) said they do with much difficulty.

When the participants were asked that you can walk outdoors on flat ground, a frequency of 11(7.3%) said they unable to do, a frequency of 16 (10.7%) said they can do without any difficulty,69 (46.0%) said they do with some difficulty, 54 (36.0%) said they do with much difficulty.

When the participants were asked that u can climb up five steps, a frequency of 47(31.3%) said they unable to do, a frequency of 6 (4.0%) said they can do without any difficulty,31(20.7%) said they do with some difficulty, 66 (44.0%) said they do with much difficulty.

When the participants were asked that which device usually use for the activities like dressing (zipper pull, button hook, etc) ,a frequency of3 (2.0%),built up or special utensils a frequency of 4

(2.7%) and crutches frequency of 44 (29.3%),special or built up chairs frequency of 8 (5.3%) and a frequency of 68 (45.3%) use wheelchair, a frequency of 23 (15.3%) use cane walker.

When the participants were asked for you mostly need help from another person for which things, a frequency of 3 (2.0%) for dressing and grooming need help from another person, a frequency of 57 (38.0%) for arising and a frequency of 9 (6.0%) for eating, a frequency of 81 (54.0%) need help from another person for walker.

When the participants were asked that u can wash and dry your body, a frequency of 35(23.3%) said they unable to do, a frequency of 5 (3.3%) said they can do without any difficulty,37(24.7%) said they do with some difficulty, 73 (48.7%) said they do with much difficulty.

When the participants were asked that u can take a tub bath, a frequency of 4(2.7%) said they unable to do, a frequency of 30 (20.0%) said they can do without any difficulty,68(45.3%) said they do with some difficulty, 48 (32.0%) said they do with much difficulty.

When the participants were asked that you can get on and off toilet, a frequency of 18(12.0%) said they unable to do, a frequency of 6 (4.0%) said they can do without any difficulty,59(39.3%) said they do with some difficulty, 67 (44.7%) said they do with much difficulty.

When the participants were asked that can you reach and from above your head bring down a 5pound object (such as a bag of sugar), a frequency of 10(6.7%) said they unable to do, a frequency of 25 (16.7%) said they can do without any difficulty,69(46.0%) said they do with some difficulty, 46 (30.7%) said they do with much difficulty.

When the participants were asked that you pick up clothing from floor with bend down, a frequency of 30(20.0%) said they unable to do, a frequency of 7 (4.7%) said they can do without any difficulty,32(21.3%) said they do with some difficulty, 81 (54.0%) said they do with much difficulty.

When the participants were asked that u can open car doors, a frequency of 2(1.3%) said they unable to do, a frequency of 27 (18.0%) said they can do without any difficulty,69(46.0%) said they do with some difficulty, 52 (34.7%) said they do with much difficulty.

When the participants were asked that u can open previously opened jars, a frequency of 0(0%) said they unable to do, a frequency of 26 (17.3%) said they can do without any difficulty,61(40.7%) said they do with some difficulty, 63 (42.0%) said they do with much difficulty.

When the participants were asked that u can turn faucet on and off, a frequency of 6(4.0%) said they unable to do, a frequency of 21 (14.0%) said they can do without any difficulty,59(39.3%) said they do with some difficulty, 64 (42.7%) said they do with much difficulty.

When the participants were asked that you can run errands and shop, a frequency of 20 (13.3%) said they unable to do, a frequency of 6 (4.0%) said they can do without any difficulty,41(27.3%) said they do with some difficulty, 83 (55.3%) said they do with much difficulty.

When the participants were asked that you can get out of a car, a frequency of 6(4.0%) said they unable to do, a frequency of 36 (24.0%) said they can do without any difficulty,72(48.0%) said they do with some difficulty, 36 (24.0%) said they do with much difficulty.

When the participants were asked that which aids or devices you mostly use for the activities such as, elevated toilet seat with a frequency of 21(14.0%), a frequency of 13 (8.7%) bathtub seat use and long handle appliances for reach 43 (28.7%), a frequency of 2 (1.3%) use bathtub seat and a frequency of 61 (40.7%) long handled appliances in bathroom, a frequency of 10 (6.7%) jar opener (for jars previously opened).

When the participants were asked that you need help from another person for which things, a frequency of 3(2.0%) for hygiene, a frequency of 97(64.7%) for reach and a frequency of 15(10.0%) said they need help for griping and opening things,80(53.3%) said they do with some difficulty, 35 (23.3%) said they need help for errands and chores.

When the participants were asked that to what extent are you able to carry out your everyday physical activities such as carrying groceries, moving a chair, walking, climbing stairs, usually a frequency of 25(16.7%) and moderately a frequency of 56 (37.3%), a little 56(37.3%) and not at all a frequency of 13 (8.7%) carryout everyday physical activities.
When the participants were asked about health, a frequency of 126(84.0%) very well and a frequency of 24 (16.0%) very poor health.
When the participants were asked about currently experiencing the level of pain, a frequency of 2(1.3%) had no pain, a frequency of 46 (30.7%)had mild pain and 75(50.0%) had moderate pain<a frequency of 27(18.0%) had severe pain.
Concluded results are that the patients at the age of 30 to 45years were effected more. they had problem to perform daily life activities like pick something, grip, climb up stairs, lift objects, dress up their self in health assessment questionnaire parameter. Patients having moderate pain in visual analogue scale.

Table 1: Gender of participants

Gender	Frequency	Percentage
Male	72	48.0
Female	78	52.0

Table 2: Problem in activities of daily life

Problems	Frequency	percentage
1.Dress yourself, including shoelaces and buttons?		
Unable to do	48	32.0
Without any difficulty	10	6.7
With some difficulty	55	36.7
With much difficulty	37	24.7
2.Shampoo your hair		
Unable to do	26	17.3
Without any difficulty	21	14.0
With some difficulty	57	38.0
With much difficulty	46	30.7
3.Stand up from a straight chair		
Unable to do	38	25.3
Without any difficulty	10	6.7
With some difficulty	40	26.7
With much difficulty	62	41.3
4.Get in and out of bed		
Unable to do	45	30.0
Without any difficulty	9	6.0
With some difficulty	42	28.0
With much difficulty	54	36.0
5.Cut your own meat		
Unable to do	38	25.3
Without any difficulty	11	7.3
With some difficulty	28	18.7
With much difficulty	73	48.7

6.Raise up a glass or full cup to your mouth		
Unable to do	4	2.7
Without any difficulty	26	17.3
With some difficulty	74	49.3
With much difficulty	46	30.7
7.Open a new milk carton		
Unable to do	2	1.3
Without any difficulty	25	16.7
With some difficulty	80	53.3
With much difficulty	43	28.7
8.Walk outdoors on flat ground		
Unable to do	11	7.3
Without any difficulty	16	10.7
With some difficulty	69	46.0
With much difficulty	54	36.0
9.Climb up five steps		
Unable to do	47	31.3
Without any difficulty	6	4.0
With some difficulty	31	20.7
With much difficulty	66	44.0
10.Devices or aids that you usually use for any of the above activities		
Devices used for Dressing (buttonhook, zipperpull,etc.)	3	2.0
Built up or special utensils	4	2.7
Crutches	44	29.3
Special or built up chair	8	5.3
Wheelchair	68	45.3
Cane walker	23	15.3
11.Dressing and grooming	3	2.0
12.Arising	57	38.0
13.Eating	9	6.0
14.Walker	81	54.0
15.Wash and dry your body		
Unable to do	35	23.3
Without any difficulty	5	3.3
With some difficulty	37	24.7
With much difficulty	73	48.7
16.Take a tub bath		
Unable to do	4	2.7
Without any difficulty	30	20.0
With some difficulty	68	45.3
With much difficulty	48	32.0
17.Get on and off the toilet		
Unable to do	18	12.0
Without any difficulty	6	4.0

With some difficulty	59	39.3
With much difficulty	67	44.7
18.Reach and get down a 5 pound object (such asa bag of sugar) from above your head?		
Unable to do	10	6.7
Without any difficulty	25	16.7
With some difficulty	69	46.0
With much difficulty	46	30.7
19.Bend down to pick up clothing from floor?		
Unable to do	30	20.0
Without any difficulty	7	4.7
With some difficulty	32	21.3
With much difficulty	81	54.0
20.Open car doors		
Unable to do	2	1.3
Without any difficulty	27	18.0
With some difficulty	69	46.0
With much difficulty	52	34.7
21.Open previously opened jars		
Without any difficulty	26	17.3
With some difficulty	61	40.7
With much difficulty	63	42.0
22.Turn faucets on and off		
Unable to do	6	4.0
Without any difficulty	21	14.0
With some difficulty	59	39.3
With much difficulty	64	42.7
23.Run errands and shop		
Unable to do	20	13.3
Without any difficulty	6	4.0
With some difficulty	41	27.3
With much difficulty	83	55.3
24.Get out of a car		
Unable to do	6	4.0
Without any difficulty	36	24.0
With some difficulty	72	48.0
With much difficulty	36	24.0
25.elevated toilet seat	21	14.0
26.Bathtub bar	13	8.7
27.elongated-handled tools for reach	43	28.7
28.Bathtub seat	2	1.3
29.elongated-handled tools in bathroom	61	40.7
30.Jar opener (for jars previously opened)	10	6.7
31.Hygiene	3	2.0
32.Reach	97	64.7

33.Griping and opening things	15	10.0
34.Errands and chores	35	23.3
35.To what extent are you able to carry out your everyday physical activities such as climbing stairs, walking, moving a chair carrying groceries		
Mostly	25	16.7
Moderately	56	37.3
A little	56	37.3
Not at all	13	8.7
36.Health		
Health Very well	126	84.0
Health Very poor	24	16.0

Table 3. Please draw a vertical line perpendicularly across the horizontal line at the location that best describes the level of pain that you are currently experiencing.

		Frequency	Percent
Valid	No pain	2	1.3
	Mild pain	46	30.7
	Moderate pain	75	50.0
	Severe pain	27	18.0
	Total	150	100.0

Discussion

The study was based on the common musculoskeletal disorders among hemodialysis patients.

The study includes that common musculoskeletal disorders is also discussed in which their questions were related to health status and activities such shampoo your hairs, dress yourself, cut your own meat, raise up a full cup to your mouth, hold up from a straight chair, climb up five steps, which walking aids usually use, hold up from a straight chair lower down to upraise the clothing from ground effects on their musculoskeletal system.

There were 150 samples which included the patients of 30 above age. The responses included the health status, hygeiene, activities, reach, and pain or discomfort or ache in different part of body and which level of pain experiencing and frequency. Different study shows that long term hemodialysis causes different musculoskeletal disorders and joint pain

The studies conducted in this study the sample size taken 144 hemodialysis patients, 87 patients (60.4%) had musculoskeletal manifestations. The researcher use Health Assessment Questionnaire scores in his study and for measuring the physical disability for measuring the pain intensity the visual analogue scale use. In their results the patients had joint pain and the most common site was knee joint highest percentage, followed by back, shoulder, hip joint, elbow, wrist, small joints, cervical pain, and finally ankle joint and foot pain in less percentage. (13,14)

In this study I also use HAQ (health assessment questionnaire) and VAS (visual analogue scale) for measuring the physical disability and measurement of pain intensity. Musculoskeletal system involvement a common problem that limits the physical functions of the patients and develop disabilities of renal failure who are having hemodialysis from long-term hemodialysis.

Another study, the researcher uses the visual analogue scale to find out the musculoskeletal pain in chronic kidney patients who are not undergoing through dialysis. They observe the patients at

different stage in 3months.They conclude that the patients are suffering from chronic pain and musculoskeletal pain which are associated with co-morbities like hyperuricemia and with calcium x phosphate levels in early and chronic kidney patients end renal stage. (9,15,16)

Another study, they done the radiography of the patients its mean they had the x-rays of the patients and labs of the patients. The conclusion of the study is that the musculoskeletal system involvement is still common in hemodialysis patients required more prevention and attention by the physicians for the treatment of hemodialysis patients because of that the patients had limited physical functions which limited the quality of life. (10,17)

Another study, the researchers use the physical activity questionnaire to assess the health status and physical activity status of the patients who are going through the process of hemodialysis. Conclusion of that study is that forever patient there should be physical activity programme. Advice needed for all patients who are having hemodialysis. (11,18)

Health assessment questionnaire to assess the patient capability to perform daily life activities.

Mostly patients require 3 to 5 hours of dialysis 3days /week, as per condition patients have hemodialysis every day the procedure done within 3 to 5 hours that's also the reason of musculoskeletal disorders because when the patients are having that procedure they are in supine position for around 3 to 5 hours so it's also the cause of musculoskeletal pain in hemodialysis patients. (19,20)

My study will helpful for the patients of hemodialysis who are having musculoskeletal pain. I found that the majority of the patients are not doing exercise for physical fitness. When the patients are having this type of procedure they have to do exercises for their better quality of life, with that they will had a comfort zone.

Conclusion and Recommendations

Moderate physical activities can cause pain in some musculoskeletal parts of the body. So depending on these parameters, it is concluded that hemodialysis patients are suffering from joint pain and discomfort, numbness, of body such as neck, lower back, hips and ankle. The conclusion shows that most of the patients had pain in performing daily life activities.

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