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Research Article

**A DESCRIPTIVE RESEARCH ON DEMOGRAPHIC FACTORS  
ASSOCIATION WITH MORTALITY, MORBIDITY AND  
QUALITY OF LIFE (QOL) OF HEMODIALYSIS PATIENTS**<sup>1</sup>Dr. Shahzad Shahid, <sup>1</sup>Dr. Umair ul Hassan, <sup>2</sup>Dr Uzma Atta Bhutta<sup>1</sup>Mayo Hospital Lahore<sup>2</sup>Women Medical Officer, DHQ Hospital, Dera Ghazi Khan**Abstract:**

**Objective:** Numerous factors are involved in the QOL (Quality of Life) of the patients undergoing dialysis. We aimed to determine the social and economic effect on the patients experiencing hemodialysis on regular basis.

**Methods:** Our research was descriptive which was carried out at Allied Hospital, Faisalabad (Nephrology Department) from October 2016 to September 2017. We included every patient experiencing routine MHD (Maintenance Hemodialysis) from a period above three months. All cases under three-month dialysis duration, dementia, cognitive impairment, non-Urdu speakers and active psychosis were not made a part of the research. A pre-designed form was used for the laboratory and demographic data collection. Four groups were made out of the total sample on the basis of monthly income, education, treatment funding source and employment. Two years follow-up was planned and carried out in the patients for the determination of QOL about mortality rate.

**Results:** Research sample included 135 patients. We compared their monthly income, education, treatment funding source and employment (p-value under 0.05). Better status was found in high-income groups (P-value 0.039); whereas, sexual function and social status were better in the low paid participants with respective P-values of 0.029 and 0.04. Low-income group also had better social functioning, more pain, kidney disease and related disease issues. Kidney disease was well dealt with the patients being funded by their own family (P-value 0.007). Staff encouragement, the satisfaction of the patient and emotional well-being was better in an educated group than lower educational groups. Mortality was not affected by QOL.

**Conclusion:** Quality of life of the patients was affected by socioeconomic factors such as employment, education, funding source and monthly income. All these parameters affected the QOL of the kidney patients. Mortality of the dialysis patients was not affected by QOL.

**Keywords:** Quality of Life (QOL), Hemodialysis, Economical Factor and Mortality.

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**INTRODUCTION:**

Sustaining of life is very difficult in the absence of renal replacement treatment as it is very expensive. Pakistan spends very less on health sector than developed nations, as its annual budgetary allocation is very meagre including neighbouring countries [1 – 5]. In the allocated amount the majority of the funds are spent on preventive disease programs and infectious diseases such as tuberculosis (TB), typhoid, cholera, malaria, gastro and dengue. Another major portion goes to maternal and neonatal health which causes major mortalities. Chronic diseases (hypertension, diabetes, CKD “Chronic Kidney Diseases” and MHD “Maintenance Hemodialysis” take very less in the budgetary allocations. The public sector is providing free dialysis service at Punjab level but 30% – 40% of patient are managed [6]. Remaining CKD patients are funded by other sources such as NGOs or welfare organizations.

Majority of the literature at international level targets the QOL effect on dialysis patients; whereas, social and economic factors are not catered in terms of mortality and QOL of dialysis patients. Numerous factors are involved in the QOL (Quality of Life) of the patients undergoing dialysis. So, we aimed to determine the social and economic effect on the patients experiencing hemodialysis on regular basis.

**METHODS:**

Our research was multi-centric descriptive which was carried out at Allied Hospital, Faisalabad (Nephrology Department) from October 2016 to September 2017. We included every patient experiencing routine MHD (Maintenance Hemodialysis) from a period above three months. All cases under three-month dialysis duration, dementia, cognitive impairment, non-Urdu speakers and active psychosis were not made a part of the research. A pre-designed form was used for the laboratory and demographic data collection. Four groups were made out of the total sample on the basis of monthly income, education, treatment funding source and

employment. Our employed instrument was self-reported instrument known as “KDQOL” specifically designed for the kidney and dialysis patients [7]. Its subscales included signs, kidney disease effect & burden, cognitive function, work status, social interaction quality, sleep, sexual function, dialysis staff encouragement, social support, role-physical, physical function, general health perception, pain, role emotional, emotional wellbeing and fatigue/energy. Urdu translation of the KDQOL was employed for low educational groups [8]. We made three groups of the total research sample on monthly income basis; whereas, two groups for education more or under ten years.

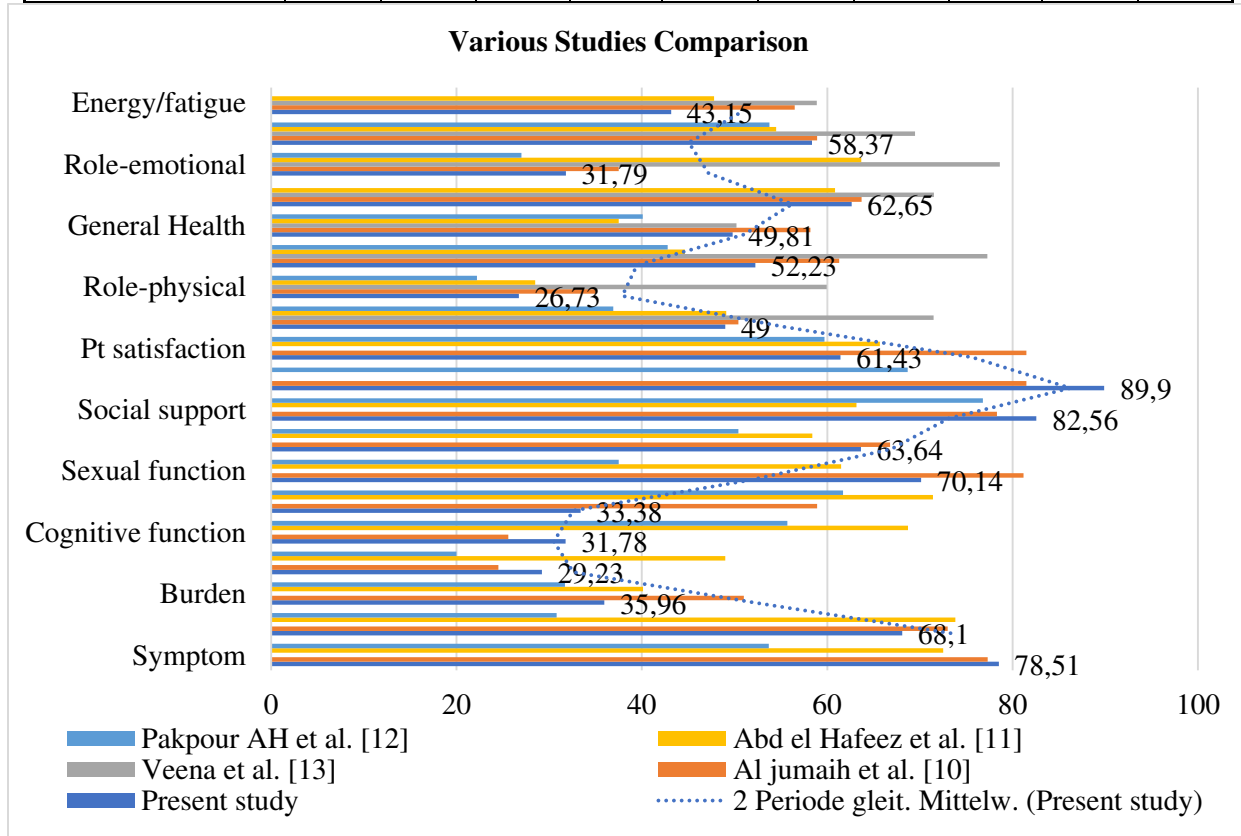
Dialysis expenditure source was categorized into four groups such as family support, self-support, public hospitals and sponsored by someone. Two years follow-up was planned and carried out in the patients for the determination of QOL about mortality rate. SPSS was used for outcomes analysis. Outcomes were shown in Mean, SD, Frequency and Percentage. Chi-Square and ANOVA test was employed ( $P = 0.05$ ).

**RESULTS:**

The research sample included 135 patients. We compared their monthly income, education, treatment funding source and employment ( $p$ -value under 0.05). Better status was found in high-income groups ( $P$ -value 0.039); whereas, sexual function and social status were better in the low paid participants with respective  $P$ -values of 0.029 and 0.04. Low-income group also had better social functioning, more pain, kidney disease and related disease issues. Kidney disease was well dealt with the patients being funded by their own family ( $P$ -value 0.007). Staff encouragement, the satisfaction of the patient and emotional well-being was better in an educated group than lower educational groups. Mortality was not affected by QOL. Detailed outcomes analysis has been made in the given tables and graphs.

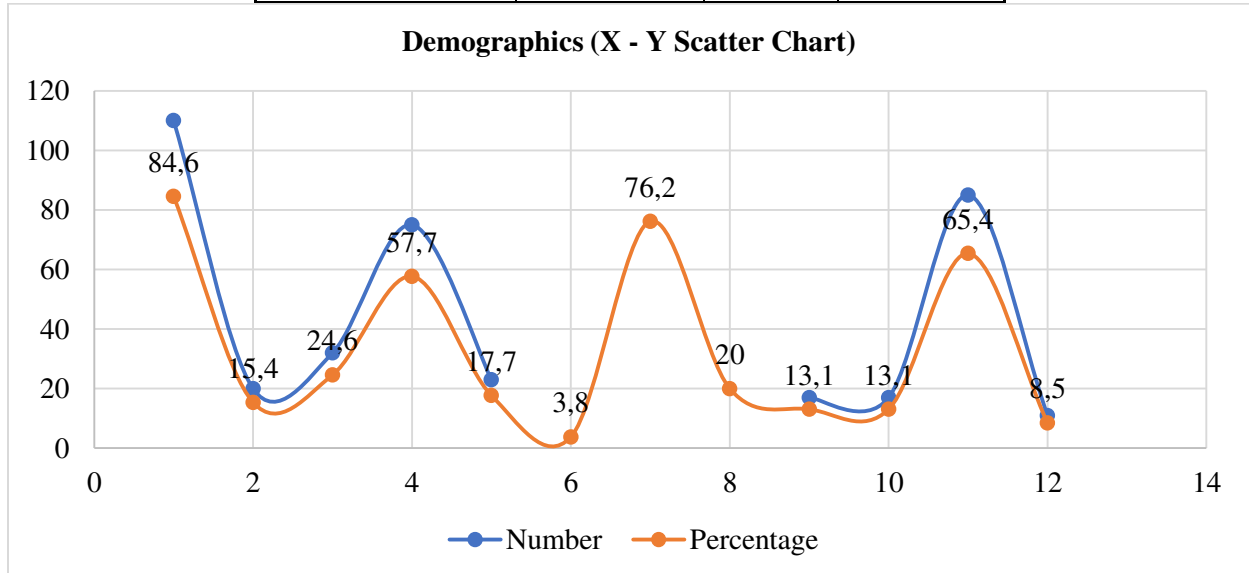
**Table – I:** Showing comparison of HRQOL of the present study and international studies

| Sub-scale            | Present study |       | Al Jumaih et al. [10] |      | Veena et al. [13] |       | Abd el Hafeez et al. [11] |      | Pakpour AH et al. [12] |      |
|----------------------|---------------|-------|-----------------------|------|-------------------|-------|---------------------------|------|------------------------|------|
|                      | No            | %     | No                    | %    | No                | %     | No                        | %    | No                     | %    |
| Symptom              | 78.51         | 14.36 | 77.3                  | 16.3 | 0                 | 0     | 72.5                      | 11.5 | 53.7                   | 24.2 |
| Effect               | 68.1          | 21.01 | 73                    | 33.5 | 0                 | 0     | 73.84                     | 13.6 | 30.8                   | 21.8 |
| Burden               | 35.96         | 25.88 | 51                    | 30.7 | 0                 | 0     | 40.13                     | 26.6 | 31.7                   | 25.1 |
| Work status          | 29.23         | 33.4  | 24.5                  | 35.2 | 0                 | 0     | 49                        | 38.3 | 20                     | 30.9 |
| Cognitive function   | 31.78         | 36.05 | 25.6                  | 9.5  | 0                 | 0     | 68.73                     | 13.7 | 55.7                   | 17.3 |
| Social interaction   | 33.38         | 23.16 | 58.9                  | 29.1 | 0                 | 0     | 71.4                      | 10.4 | 61.7                   | 18.2 |
| Sexual function      | 70.14         | 25.51 | 81.2                  | 23.3 | 0                 | 0     | 61.5                      | 23.1 | 37.5                   | 34.3 |
| Sleep                | 63.64         | 25.49 | 66.8                  | 24.4 | 0                 | 0     | 58.38                     | 15.9 | 50.4                   | 18.8 |
| Social support       | 82.56         | 23.47 | 78.3                  | 29.8 | 0                 | 0     | 63.17                     | 28.9 | 76.8                   | 22.1 |
| Staff encouragement  | 89.9          | 16.48 | 81.5                  | 26.1 | 0                 | 0     | 0                         | 0    | 68.7                   | 23.1 |
| Pt satisfaction      | 61.43         | 11.07 | 81.5                  | 26.1 | 0                 | 0     | 65.67                     | 17.9 | 59.7                   | 24.6 |
| Physical functioning | 49            | 25.56 | 50.4                  | 29.1 | 71.47             | 42.25 | 49.1                      | 27.3 | 36.9                   | 26.9 |
| Role-physical        | 26.73         | 36.59 | 35                    | 38.8 | 59.94             | 24.15 | 28.5                      | 32   | 22.2                   | 36.3 |
| Pain                 | 52.23         | 26.78 | 61.3                  | 34.8 | 77.28             | 22.79 | 44.65                     | 23.1 | 42.8                   | 27.5 |
| General Health       | 49.81         | 19.48 | 58.2                  | 25   | 50.2              | 19.05 | 37.5                      | 19   | 40.1                   | 11   |
| Emotional well-being | 62.65         | 22.9  | 63.7                  | 26.8 | 71.53             | 15.65 | 60.84                     | 10   | 0                      | 0    |
| Role-emotional       | 31.79         | 35.91 | 37.5                  | 44.6 | 78.62             | 38.2  | 63.67                     | 41.9 | 27                     | 21.1 |
| Social function      | 58.37         | 25.88 | 58.9                  | 29.1 | 69.48             | 24.14 | 54.5                      | 23.4 | 53.75                  | 22.7 |
| Energy/fatigue       | 43.15         | 22.64 | 56.5                  | 28.9 | 58.86             | 17.71 | 47.8                      | 14.5 | 0                      | 0    |



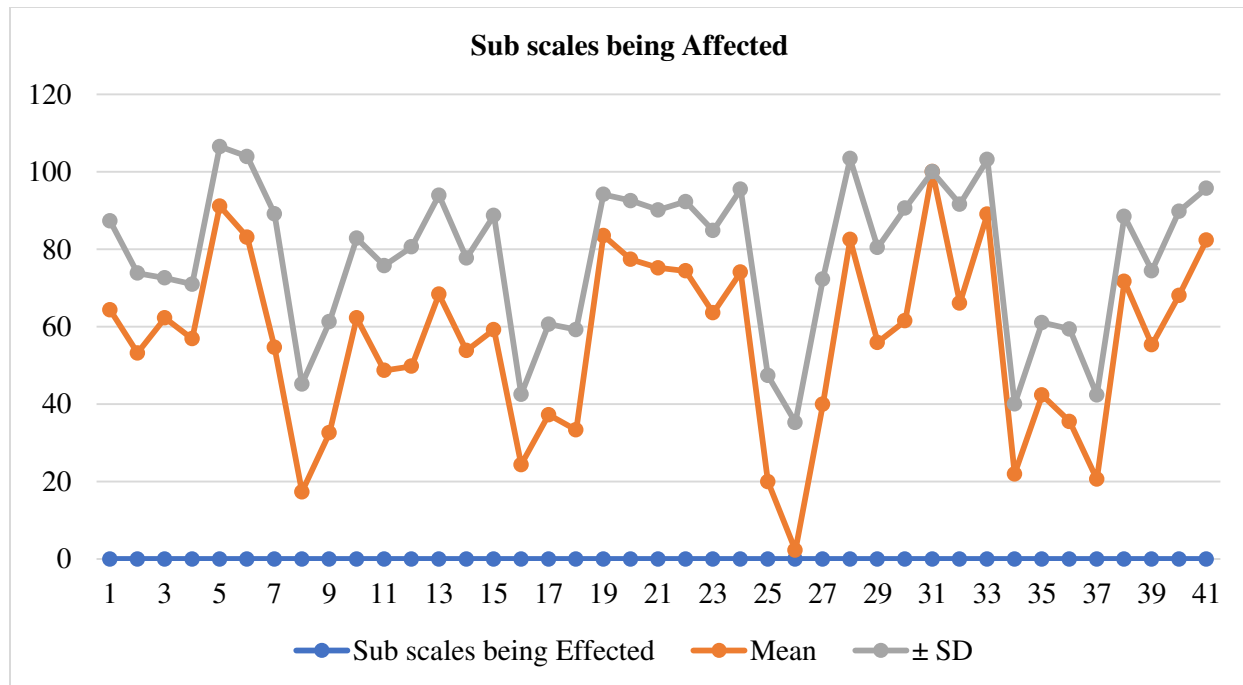
**Table – II: Demographics**

| Demographics      | Subgroups      | Number | Percentage |
|-------------------|----------------|--------|------------|
| Education (Years) | > 10           | 110    | 84.6       |
|                   | < 10           | 20     | 15.4       |
| Employment        | Employed       | 32     | 24.6       |
|                   | Unemployed     | 75     | 57.7       |
|                   | Housewife      | 23     | 17.7       |
| Income (Rs.)      | < 5000         |        | 3.8        |
|                   | 5000 - 25000   |        | 76.2       |
|                   | > 25000        |        | 20         |
| Funding           | Self           | 17     | 13.1       |
|                   | Family support | 17     | 13.1       |
|                   | Govt           | 85     | 65.4       |
|                   | Other          | 11     | 8.5        |



**Table – III:** Showing factors affecting QOL of dialysis patients

| Subscales being Affected      | Mean  | ± SD  | P-Value |
|-------------------------------|-------|-------|---------|
| Emotional well-being          | 64.36 | 22.97 | 0.045   |
|                               | 53.2  | 20.61 |         |
| Patients satisfaction         | 62.26 | 10.3  | 0.046   |
|                               | 56.9  | 14.06 |         |
| Staff encouragement           | 91.14 | 15.37 | 0.045   |
|                               | 83.13 | 20.79 |         |
| Work status                   | 54.69 | 34.45 | 0       |
|                               | 17.33 | 27.87 |         |
| Pain                          | 32.61 | 28.64 | 0.049   |
| Social function               | 62.27 | 20.54 | 0.027   |
|                               | 48.7  | 27.07 |         |
|                               | 49.78 | 30.81 |         |
| Quality of social interaction | 68.36 | 25.6  | 0.03    |
|                               | 53.83 | 23.87 |         |
|                               | 59.24 | 29.49 |         |
|                               | 24.38 | 18.13 |         |
|                               | 37.24 | 23.41 |         |
|                               | 33.33 | 25.9  |         |
| Symptom/problems              | 83.53 | 10.62 | 0.05    |
|                               | 77.38 | 15.16 |         |
|                               | 75.17 | 14.97 |         |
| Effects of kidney disease     | 74.41 | 17.86 | 0.015   |
|                               | 63.58 | 21.22 |         |
| Work status                   | 74.05 | 21.43 | 0.039   |
|                               | 20    | 27.39 |         |
| Social function               | 2.26  | 33    | 0.04    |
|                               | 40    | 32.28 |         |
|                               | 82.5  | 20.92 |         |
|                               | 55.93 | 24.51 |         |
| Sexual function               | 61.5  | 29.07 | 0.029   |
|                               | 100   | 0     |         |
|                               | 66.11 | 25.51 |         |
| Quality of social interaction | 89.06 | 14.08 | 0.012   |
|                               | 21.96 | 18.07 |         |
| Effect of kidney disease      | 42.35 | 18.7  | 0.007   |
|                               | 35.53 | 23.87 |         |
|                               | 20.61 | 21.79 |         |
|                               | 71.69 | 16.81 |         |
|                               | 55.33 | 19.1  |         |
|                               | 68.09 | 21.71 |         |
|                               | 82.39 | 13.35 |         |



### DISCUSSION:

Financing of patients is very important and determining factor. Almost 60.3% of Pakistani live under one dollar a day [9]. Life-threatening complications can be associated with poverty and its effects. Our QOL is comparable with the other countries such as Iran, Egypt, Saudi Arabia which is less than Singapore as it is a developed country [10 – 13]. At a later stage in Pakistan, patients are referred to nephrologist and dialysis is inaccessible [14]. People also have superstitions about dialysis and consider it as leading cause of death [15]. Critical patients are referred to specialists which causes mortality. Complications are also associated with the catheter-based dialysis initiation [16]. Free dialysis service is also limited in our country which can save a life but QOL is not improved [17, 18].

QOL is a strong mortality predictor in dialysis patients [19]. Higher morbidity and mortality cases are also linked with the improper management of the medical services. In this study, a number of patients were malnourished, anaemic and had inadequate dialysis. Before jumping to any final conclusion, it is important to study all the associated factors of morbidity and mortality. Aged patients were more prone to mortality than young. We also observed that high paid patients were better in QOL as they had a feasible access to kidney transplant and dialysis. These patients can bear the expenses of treatment. They can also manage their nutrition, metabolic profile and renal osteodystrophy [20, 21]. Social

interaction is better in low paid patients as they had more family members. Recreational activities are healthier in poor than rich.

Employment is also an important factor in the HD patient's QOL. Employed patients can bear their treatment expenses. These patients have also a regular office routine to keep themselves busy in productive activities, which improves QOL [22]. As the routine is busy so they feel more pain and disease symptoms because of fatigue factor than unemployed patients. Better social interaction and QOL was observed in the family or self-paid patients than government or NGO supported patients. These patients are also less dependent on others as they enjoy their family support [23]. Sponsored treatment cases were more affected as they need to work for the sponsors.

Disease and its modalities are better understood by educated patients. They can comprehend the technical terms, disease management and staff guidelines better than less or non-educated patients. Instructions related to medicine effects, salt and fluid restrictions are better understood by educated patients than non-educated patients. QOL is also improved with better counselling session of educated patients [24]. Fluid overload and malnutrition are often complained in non-educated patients [25].

### CONCLUSION:

Quality of life of the patients was affected by

socioeconomic factors such as employment, education, funding source and monthly income. All these parameters affected the QOL of the kidney patients. Mortality of the dialysis patients was not affected by QOL.

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