**A study of quality of life of patients on regular haemodialysis at Sohag University Hospital (2015)**

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**Abstract**

**Background:** Haemodialysis has a considerable impact on health related quality of life. Haemodialysis alters the life style of the patients and their families and interfere with their lives. It's important to assess QoL of patients on haemodialysis and determine factors that alters the QoL.

**Aim of the work:** The aim of this study was to assess QoL of patients on regular haemodialysis and determine some factors that affect the QoL.

**Patients and methods:** This was a cross sectional hospital based study targeted at total coverage of patients in haemodialysis unit at Sohag University Hospital (198 patients) from January to June 2015 using KDQOL-SFTM instrument. **Results:** Total number of the studied patients was 198. The mean age was 48.8 years and the mean duration of dialysis was 4.19 years, most participants were males (64.1%), married(73.3%), illiterate(53%), unemployed (82.3%), and a rural residents (77.8%), their monthly income ranged from 200-500 LE (48.5%). The most affected aspect was physical health component (PCS) which obtained the lowest scores, followed by mental component score (MCS) followed by kidney disease component summary (KDS) (95.28, 46.15, 90.04 consecutively). PCS, MCS, KDS scores were statistically significant higher in male gender, employed, higher family income and higher level of education. Scores were insignificantly affected by marital status. **Conclusion:** Quality of life of patients on haemodialysis at Sohag University Hospital was impaired especially in the physical and mental component. Female gender, older age, longer duration of dialysis, low level of education, un employment and low family income leads to impaired quality of life. Much attention should be paid to improve physical and psychological aspects of the patients.

**Key words:** quality of life, haemodialysis.

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**Introduction**

Restoration or at least preservation of the functioning and well being of the person remains the ultimate goal of health care. Health related quality of life is the functional effect of a medical condition and/or its consequent therapy upon a patient **(1).**

Measuring health related quality of life (HRQOL) is to quantify the degree to which the patient's life is affected by the medical condition or its treatment in a valid and reproducible way. These measurements can then be used as a baseline data that can be compared with the HRQOL of patients with different conditions or who receive different treatments **(2)**.  
 End stage renal disease (ESRD) is one of such chronic diseases leading to impaired quality of life, this occurs as a result of major disability suffered by the patient in different domains of life**.** Thanks tobetter patient care, advanced technology and medical progress, survival of ESRD patients has been anonymously improved nowadays. Moreover, the availability of various renal replacement therapies (RRT) has reduced the severity of symptoms and resulted in longer survival of ESRD patients **(3).**

End stage renal disease (ESRD) has became a worldwide public health problem **(4).** At the end of 2011, the estimated number of ESRD patients was 2,786,000 and continues to increase at a significantly high rate. 77.6% Of these 2,786,000 ESRD were undergoing dialysis treatment [haemodialysis (HD) or peritoneal dialysis (PD)]. At the end of year 2011, haemodialysis remained the most common treatment modality, (89% of all dialysis patients) **(5)**.

A progressive increase in the prevalence of ESRD has been reported In Egypt from 403 PMP (per million population) at year 2003 to 483 PMP at year 2004. In Sohag governorate the prevalence rate of ESRD was 276 PMP during year 2003 **(6).** Then the prevalence rate has increased to become 316 PMP during year 2010 **(7).**

Hemodialysis alters the life style of the patients and their family as a result of being costy, time-intensive and requires fluid and dietary restrictions. On the long run long-term dialysis may results in dependence on caregivers, loss of freedom. Major impacts of ESRD or its treatment includes eating habits, vacations, sense of security, employment, and the ability to enjoy life which end by disruption of marital, family and social life and reduced or loss of financial income**( 8)**, **( 9)**. So the physical, psychological, socioeconomic, and environmental aspects of life are negatively affected, leading to impaired quality of life **(10)**.

Accumulated data shows that HRQOL is not only affected and impaired by ESRD but it also influences dialysis outcomes. This means that measuring and evaluating HRQOL in hemodialysis patients is very important as it focus attention not only on how long but also on how well end stage renal disease (ESRD) patients live **(11).**

Benefits of Assessment of HRQOL includes not only planning the strategy of treatment of the patient but also judging quality of medical care, determining the efficacy of medical intervention and evaluating the psychological burden of chronic disease, and the effect of specific treatment **(12).** Several authors have suggested considering regular HRQoL monitoring a part of regular ESRD patient assessment and incorporating it into the continuous quality assurance and quality improvement systems **(13)**.

**Aim of the work:**

This study aimed to assess quality of life of the haemodialysis patients in Sohag University Hospital through assessing different domains of quality of life of the patients as physical, mental, social domains.

**Patients and Methods:**

A cross sectional hospital based study, targeted at total coverage of patients on chronic haemodialysis at Sohag University Hospital .

The period of study was from January to June, 2015.

Eligible criteria:

All adult patients of any age, whether males or females who were on regular haemodialysis at the haemodialysis Unit of Sohag University Hospital at time of study were asked to participate. The patient who accepted to participate in the study and gave a written consent (which is included in the questionnaire) were interviewed.

Accordingly the total number of patients on regular haemodialysis during period of study were 215 patients. Of them 198 were enrolled in the study and the rest refused to participate. The respondent rate was 92%.

Study tool:

An interview was conducted using a questionnaire. It included 2 parts; the first part included basic socio demographic data. The second part is the kidney disease quality of life short form questionnaire (KDQOL-SFTM) which comprised questions that cover quality of life (QOL) domains **(14).**

Demographic data and economic data included data about gender, age, residence, marital status, educational level, occupation, duration of dialysis, monthly family income and income satisfaction.

The KDQOL-SFTM is a multi-item measure developed for individuals with kidney disease and on dialysis. It consists of data about physical, mental health state of the patient and his(her) kidney disease:

a) Physical health components summary (PCS) included the following items: Physical functioning (10 items), role-physical (4 item), bodily pain (2 item) and general health (5 items)

b) Mental health component summary (MCS) included the following: Fatigue/energy (4 items), social functioning (2 items), role-emotional functioning (3 items) and emotional wellbeing (5 items).

c) Kidney disease component summaries (KDS) included the followingSymptom/problem list (12 items), effects of kidney disease on daily life (8 items), burden of kidney disease (4 items), cognitive function (3 items), work status (2 items), sexual function (2 items), quality of social interaction (3 items), sleep (4 items), social support (2 items), dialysis staff encouragement (2 items) and patient satisfaction (1 item).

The final item of the questionnaire was the overall health rating item asks respondents to rate their health on a 0-10 responses scale ranging from "worst possible (as bad or worse than being dead)" to "best possible health".

Scoring system:

The scoring procedure for the KDQOL-SFTM first transform the raw pre-coded numeric values of items to a 0-100 possible range, with higher transformed scores always reflecting better quality of life. Each item is put on a 0-100 range so that the lowest and highest possible scores are set at 0-100, respectively. Scores represents the percentage of total possible scores achieved. In the second and final step in the scoring process, items in the same scale averaged together to create the scale score.

Statistical analysis:

Then the collected data were subjected to statistical analysis using (SPSS – version 16). P-value is considered significant if less than 0.05.

P-value is calculated using Mann-Whitney test.

**Results:**

Total number of the studied patients was 198. As shown in table(1) the mean age was 48.8 years and the mean duration of dialysis was 4.19 years, most participants were males (64.1%), married(73.3%), illiterate(53%), unemployed (82.3%), and a rural residents (77.8%), their monthly income ranged from 200-500 LE (48.5%).

Table (2) shows the mean score for each domain of the KDQOL-SFTM instrument among studied population. It was found that generally the most affected aspect was physical health component summary (PCS) which obtained the lowest scores, followed by mental component score(MCS) followed by kidney disease component summary (KDS) (95.28, 46.15, 90.04 consecutively).

The lowest scores were in the scales of work status, general health and energy of the patients (20.95, 25.38, 32.68 consecutively), the highest scores were the social support, quality of social interaction and cognitive function (72.94, 76.36, 86.04 consecutively).

The effect of gender, marital status, income, level of education and work status on the three component summaries was shown in table(3). PCS, MCS, KDS scores were statistically significant higher in male gender, employed, higher family income and higher level of education. Scores were insignificantly affected by marital status.

As shown in table(4) a highly significant negative weak correlation between age and the PCS, MCS, KDS (p-value=0.000, r=0.3, 0.2, 0.2 consecutively). Also highly significant negative weak correlation between duration of dialysis and the PCS, MCS, KDS (p-value=0.000, r=0.2, 0.3, 0.3). There was highly significant positive weak correlation family income and PCS, MCS, KDS (p-value=0.000, r=0.1).

Also a highly significant strong positive correlation between KDS and MCS (p-value=0.000, r=0.8) as well as between KDS and PCS (p-value=0.000, r=0.8).

**Discussion:**

The current study gave a detailed description of QOL scores of patients on regular haemodialysis at Sohag University Hospital.

On comparing the scores of the three composites domains of the KDQOL-SFTM, it was found that the lowest score was seen in physical component summary (PCS) (mean score= 30.06) followed by mental component summary (MCS) (mean score= 46.15) and the highest score was the score of kidney disease component summaries (KDS) (mean score= 60.97). This could reflect people's ability to psychologically adapt to their situation over time. In line with the current study, the cross sectional study done in El-Minia, Egypt **(15)** and the study done

in Saudi Arabia **(16)** showed that PCS scores were lower than MCS and KDS scores (52.7, 54.1, 59.7 respectively). Also the study done in Egypt **(17),** the study done in Benin, Nigeria **(18)** all of them showed that PCS score was lower than MCS score and KDC score. In other words, despite the worsening of the physical health status, the mental health of dialysis patients is relatively preserved.

As regard Gender, it was found that in the current study men scored higher than women at the three main domains PCS, MCS and KDS with statistically highly significant difference.

These findings were in line with other studies in Egypt **(15), (19)** showed that men scored higher than women with statistically significant difference in the PCS and KDS scores while there is insignificant difference in the MCS score (p-value= 0.004, 0.001, 0.6).

This also agreed to study done in Saudi Arabia. **(16)** Men scored statistically significant higher than females in the three domains PCS, MCS, KDS domains (p-value= 0.000, 0.001, 0.001 consecutively)**.**

However the results of the current study were different from the study done in Egypt which showed no significant difference between men and women as regard all domains of quality of life. **(20)**

As regard Marital status, the current study showed that there was insignificant difference between married and unmarried patients as regard all aspects of quality of life. In line with the current study the cross-sectional studies done in Saudi Arabia**(21)** and in Chile **(22)** both showed insignificant difference between married and un married patients. However this was different from study done in Turkey **(23)** suggested there is better perception of quality of life among people living with other persons. Living with someone more strongly influences the perceived QoL.

In the current study education had a positive impact on quality of life as those who had educational level above secondary school scored higher with highly significant difference compared to those below secondary school education (p-value=0.000). In line with this a study in El-Minia, Egypt which revealed that a higher educational level was associated with higher PCS, MCS and KDCS scores. **(15)** Also the study in Alexandria, Egypt **(19)**, the study in Cairo, Egypt **(20)** and the cross sectional study in Saudi Arabia **(24).**

As regard Employment status the current study revealed that there was significant difference between employed and unemployed in quality of life as those who had job scored higher than those who were jobless and especially in the physical aspects as it showed very high statistically significant difference (p-value=0.000). While there is statistically insignificant difference between both groups as regard mental health component (MCS) while in the cross-sectional study done in china showed statistically significant difference between employed and unemployed as regards MCS scores only (p-value=0.05). **(25)**

As regard family income,the current study showed that patients whose monthly family income was higher than 1000 LE scored higher and had better quality of life with highly significant difference than those whose monthly family income was lower than 1000 LE (p-value= 0.001, 0.000).

In line with the current study, a study done in Saudi Arabia in which MCS and PCS scores were significantly higher among the higher income group. **(16)** The results of the current study were different from the study done in china in which no statistically significant difference was found between PCS, MCS, KDS mean scores when the patients were evaluated for monthly income**. (25)**

On doing correlation coefficient analysis in the current study it has been found a highly significant strong positive correlation between the three scales of quality of life (PCS, MCS, KDS) (P-value= 0.000, r= 0.8). This was in line with the study done in Saudia Arabia that showed moderate positive correlation between the three main scales of quality of life (PCS, MCS, KDS) (P=0.0001, r= 0.6) **(16).**

On doing correlation coefficient between age and the three main domains Physical component summary(PCS), Mental component summary(MCS) and Kidney disease component summary(KDS), the current study showed highly significant negative weak correlation between age of studied haemodialysis population and PCS, MCS, KDS (r=0.3, 0.2, 0.2 respectively, P-value=0.000).

In line with the current study the study done on 161 patients at Sheikh Khalifa Medical City in the UAE. the results showed Advanced age has been linked with the deterioration of physical activity(r = -0.3, p= 0.001 and r = -0.096, p= 0.26 consecutively). **(26)**

On doing correlation coefficient analysis between duration of dialysis and the three main domains; Physical component summary (PCS), Mental component summary (MCS) and Kidney disease component summary (KDS), the current study showed highly significant negative weak correlation between duration of dialysis and PCS, MCS, KDS (r= 0.2, 0.3, 0.3 respectively, p-value=0.000). In the same line with the current study, the study in Egypt which showed a negative correlation between duration of dialysis and PCS scores **(20).**

**Conclusion:**

Quality of life of patients on haemodialysis at Sohag University Hospital showed marked impairment especially in the physical and mental component. The lowest scores were in the scales of work status, general health and energy of the patients while the highest scores were the social support, quality of social interaction and cognitive function. Female gender, older age, longer duration of dialysis, low level of education were the most important factors associated with impaired life quality. Having a job and high family income had leaded better quality of life.

**Recommendations:**

- Great interest should be specified for assessing quality of life of patients with different chronic important diseases like diabetes, hypertension, cardiac, chest or other liver diseases to know the real size of the problem and what we need to improve these patients’ quality of life.

- The importance of health education programs in improving quality of life’s score of haemodilysis patients.

- Rehabilitation programswill help the patients with low PCS and MCS scores.

**References:**

1) Schipper H, Clinch J, Olweny C (1996). quality of life studies: definitions and conceptual issues. Quality of life pharmacoeconomics in clinical trials, 2nd edition.

2) Osoba D, Bezjak A and Brundage M. Analysis and interpretation of health related quality of life data from clinical trials. Eur J cancer 2005. 41(2): 280-287.

3) Hudson J and Johnson C. Chronic kidney disease In Applied therapeutics 2004. 8th ed. 32-31.

4) Rattanasiri S, Anothaisintawee T, Ingsathit A, Attia J and Thakkinstian A. Prevalence of chronic kidney disease: a systematic review and meta-analysis. Clin Neph 2009. 71(3): 244–254.

5) Jha V, Garcia G, Iseki K, Li Z, Naicker S and Plattner B. Chronic kidney disease: global dimension and perspectives 2013. 382(9888). 260–72.

6) Ali taha and Eman Abd El-Baset. Epidemiology of End Stage Renal Diseased pateients on Haemodialysis in Sohag Governorate, upper Egypt 2005. *JESN* 7(1): 35-46.

7) Ali Taha and Ahmed Fathy Hamed (2010). Epidemiology of End Stage Renal Diseased pateients on Haemodialysis in Sohag Governorate, upper Egypt: an update.

8) Lin C, Lee B and Hicks F. The phenomenology of deciding about hemodialysis among taiwanese. West J Nurs Res 2005. 27: 915-929.

9) Smeltzer S & Bare B. Brunner &Suddarth’s textbook of medical-surgical nursing. 3rd edition 2004.

10) Blake C, Codd M, Cassidy A and O'Meara Y. physical function, employment and quality of life in end-stage renal disease. J Nephrol 2000.13(2):142-149.

11) Lopes-Gresham B and Satayathum J. Worldwide Dialysis Outcomes and Practice Patterns Study Committee. Health-related quality of life and associated outcomes among hemodialysis patients of different ethnicities in the United States: the Dialysis Outcomes and Practice Patterns Study (DOPPS). Am J KidneyDis 2003. 41: 605-615.

12) Mapes D, curtin R, Schatell D and Hudson S. self management in patients with end stage renal disease: exploring domains and dimensions. Nephrology Nursing Jornal 2005. 32(4):389-395.

13) Kalantar-Zadeh K & Unruh M. Health related quality of life in patients with chronic kidney disease. Int Urol Nephrol. 2005. 37(2): 367-378.

14) Hayes D, Kallich D, Coons J, Amin N, Carter B and Kamberg C (1997). Kidney disease quality of life short form (KDQOL-SFTM) a manual for use and scoring. Published by RAND.

15) Nashwa N, Emad G, Khaled H & Marwa G. Health-related quality of life among hemodialysis patients at El-Minia University Hospital, Egypt J Public Health 2013. (21):193–200.

16) Al-Jumieh A, Al-Onazi K, Binsalih S, Hejaili F and AL-sayyari A . Arab Journal of Nephrology and Transplantion 2011.

17) Amer M, Wahba H, Raafat V and Refaat H. Study of QOL and functional level in Egyptian elderly on chronic hemodialysis treatment. Middle East J Age Aging 2011. 8(2):3–6.

18) Elhadji F, Jacques V, Ahmed T and Noriace E. Quality of Life of Chronic Haemodialytic Patients at Cotonou Teaching Hospital Benin. Open Journal Nephrolog 2014. (4): 131-141.

19) Samar A, sunny A , Zahira M , Hala S and Noha A. Cultural adaptation and validation of arabic version of KDQOL-SFTM in Egypt. BMC nephrology 2012. (13):170.

20) Heba S, Hanna M and Nagwa A. Health related quality of life among Egyptian patients on haemodialysis. j. med. Sci 2006. 6(3):314-320.

21) Bayoumi M, Ali A, Abdulkareem A, Mohammed A and Jamal A . Saudi J Kidney Dis Transpl 2013. 24(2): 254-259.

22) Guerra-Guerra V, Sanhueza-Alvarado O, Caceres-Espina M. Rev. latino-Am. Enfermagem 2012. 20(5): 838-846.

23) Sagduyu A, Senturk V, Sezer S, Emiroglu R and Ozel S. Psychiatric problems, life quality and compliance in patients treated with hemodialysis and renal transplantation. Turk Psikiyatri 2006. (17): 22-31.

24) Mandoorah Q, Faisal A, Sohaib M and Salem A. Saudi J Kidney Dis Transpl.2014

25) Sanjeev A, Mohiuddin C and Lin y. International Journal of Innovative Medicine and Health Science.2015 (4) :60-70.

26) Abdelbasit M and Kamal H. Self-care Self-efficacy and Quality of Life among Patients Receiving Hemodialysis in South-East of Iran. J Family Community Med 2013. 20(2): 106–112.

**Table (1): Socio-demographic characteristics of the studied Haemodialysis patients at Sohag University Hospital 2015.**

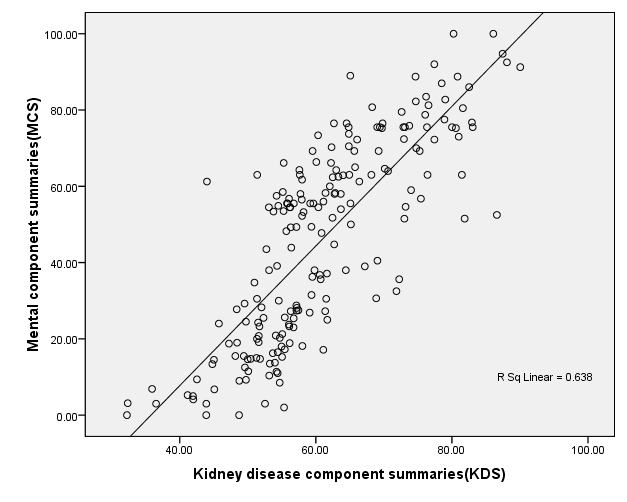
|  |  |  |
| --- | --- | --- |
| Percentage  % | NO  Total = 198 | Variable |
| 64.1%  35.9% | 127  71 | Gender  Male  Female |
| 22.2%  77.8% | 44  154 | Residence  Urban  Rural |
| 16.7%  73.7%  7.1%  2.5% | 33  146  14  5 | Marital status  Single  Married  Widowed  Divorced |
| 7.6%  48.5%  22.2%  21.7% | 15  96  44  43 | Family income  100-200 LE  200-500 LE  500-1000 LE  >1000 LE |
| 53%  6.6%  8.6%  31.8% | 105  13  17  63 | Educational level  Illiterate  Read & Write  Below 2ry school  Above 2ry school |
| 82.3%  9.6%  6.6%  1.5% | 163  19  13  3 | Occupation  No job  Employee  Skilled worker  Student |
| 48.8 ± 1.4 | | Age {Ẋ ± SD}(by year) |
| 4.19 ± 4 | | Duration of dialysis {Ẋ± SD}(by year) |

**Table (2): Mean scores for each domain of the KDQOL-SFTM instrument among studied population at SUH 2015.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| InterQuartile range | Maximum | Minimum | Median | Mean score  N=198 | Variable |
| 37.39 | 95.28 | 0 | 38.27 | 39.06 | PCS |
| 25 | 90.60 | 0 | 25 | 25.38 | General health |
| 50 | 100 | 0 | 40 | 43.23 | Physical function |
| 50 | 100 | 0 | 50 | 34.87 | Role-physical function |
| 22.5 | 100 | 0 | 45 | 52.85 | Pain |
| 43 | 100 | 0 | 52 | 46.15 | MCS |
| 16 | 100 | 0 | 52 | 47.73 | Emotional wellbeing |
| 100 | 100 | 0 | 100 | 54.20 | Role-emotional |
| 50 | 100 | 0 | 50 | 49.49 | Social function |
| 31.25 | 100 | 0 | 30 | 32.68 | Energy/fatigue |
| 14.97 | 90.04 | 32.24 | 59.26 | 60.97 | KDS |
| 14.60 | 100 | 27.50 | 85.40 | 83.03 | Symptom/problem list |
| 16.45 | 100 | 43.70 | 75 | 75.03 | Effect of kidney disease |
| 37.50 | 100 | 0 | 37.50 | 35.44 | Burden of kidney disease |
| 26.70 | 100 | 13.30 | 100 | 86.04 | Cognitive function |
| 50 | 100 | 0 | 0 | 20.95 | Work status |
| 33.40 | 100 | 20 | 80 | 76.36 | Quality of social interaction |
| 26.70 | 100 | 26.60 | 58.30 | 65.39 | Sleep |
| 16.70 | 100 | 0 | 66.6 | 72.94 | Social support |
| 15.62 | 100 | 0 | 50 | 55.36 | Dialysis staff encourgment |
| 40 | 80 | 0 | 40 | 39.94 | Patient satisfaction |

**Table (3): The impact of various patient characteristics on scores in the three composite domains of the KDQOL-SFTM instrument among studied haemodialysis population at SUH 2015.**

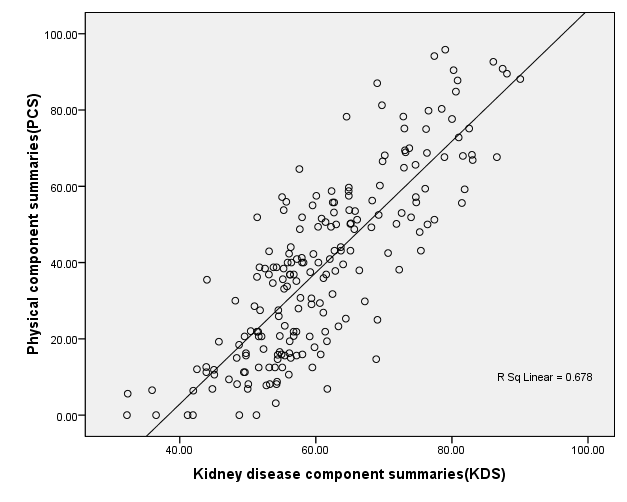
|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **PCS** | | **MCS** | | **KDS** | |
| Mean score | p-value | Mean score | p-value | Mean score | p-value |
| **Gender**  Male  female | 43.92  30.36 | 0.000 | 51.20  37.11 | 0.000 | 62.70  57.88 | 0.002 |
| **Income**  <1000LE  >1000LE | 35.96  50.22 | 0.001 | 42.57  59.07 | 0.000 | 59.05  67.92 | 0.000 |
| **Work status**  With job  jobless | 47.81  37.37 | 0.000 | 55.53  44.38 | 0.037 | 70.14  59.21 | 0.018 |
| **Marital status**  Married  unmarried | 39.02  39.16 | 0.908 | 47.23  43.11 | 0.357 | 61.46  59.61 | 0.315 |

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**Figure (1): Scatterplot demonstrating highly significant strong positive correlation between Kidney disease summary (KDS) and Mental component summary (MCS) scores of the KDQOL-SFTM instruments among studied Haemodialysis population at SUH.(r=0.80, p-value=0.000).**

**Table (14): correlation- Coefficent analysis between independentvariables(age , family income , duration of dialysis) and the three component summaries of the of the KDQOL-SFTM instrument among studied Haemodialysis population at SUH 2015.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| KDS | | MCS | | PCS | | Variables |
| p-value | r-correlation | p-value | r-correlation | p-value | r-correlation |
| 0.000 | -0.242 | 0.000 | -0.251 | 0.000 | -0.390 | Age |
| 0.000 | 0.171 | 0.000 | 0.169 | 0.000 | 0.137 | Family income |
| 0.000 | -0.386 | 0.000 | -0.313 | 0.000 | -0.286 | Duration of dialysis |

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**Figure (2): Scatterplot demonstrating highly significant strong positive correlation between kidney disease summary (KDS) and physical component summary (PCS) scores of the KDQOL-SFTM instruments among studied Haemodialysis population at SUH (r=0.82, p-value=0.000).**