

## Original Research Article

# Relationship between knowledge and treatment satisfaction with psychological well-being among haemodialysis patients: a single center study

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## ABSTRACT

**Background:** Haemodialysis (HD) patients are subjected to bio-psychosocial stress in many ways even after successful hemodialysis session. Therefore, this study was designed to survey on relationship between knowledge and treatment satisfaction with psychological well-being among haemodialysis patients.

**Methods:** This cross-sectional study included 100 HD patients who were referred to emergency dialysis unit, nephrology and transplant unit, National Hospital, Kandy during the year 2019. Data were collected using a self-administered questionnaire.

**Results:** Mean age of this study group was 45.17 (13.6) years; two dominant etiologies of chronic renal failure were diabetic nephropathy and hypertension accounting for nearly 61% of the study population. Only 19% of patients presented with emotional suffering and 40% of patients worried about their disease condition. However, majority of the patients satisfied with nursing care and nurses' co-operation while they are on HD treatment. Moreover, they confirmed nurses' co-operation helped to reduce their stress level. Further, knowledge on HD compliance ( $p=0.000$ ), satisfaction on nursing staff attitudes ( $p=0.001$ ), satisfaction on nursing staff concern about the health issues ( $p=0.001$ ) and worrying about the kidney disease condition ( $p=0.000$ ) had statistically significant association with mental stress in this study cohort.

**Conclusions:** The topic of stressors is very important among patients receiving dialysis, as these affect their psychosocial and physiological wellbeing. Thus, health care team is playing an important role in providing patients with effective psycho-social and physiological support.

**Keywords:** Haemodialysis, Knowledge, Treatment satisfaction, Mental stress

## INTRODUCTION

Haemodialysis (HD) is one form of renal replacement therapy (RRT) which has allowed longer survival of patients with end-stage renal disease (ESRD).<sup>1</sup> HD is associated with strong physical and psychological

stressors such as pain<sup>2</sup>, fluid restrictions<sup>3</sup>, and physical activity limitations, lack of self-care and mood disorders.<sup>4</sup> The relationship between health staff and patients with ESRD is a unique one. Because of that satisfaction with care and caregivers is an important part which can be directly affects to empower the quality of life (QoL).

There has been increasing interest in assessing psychological well-being in HD patients over the past few decades.<sup>5</sup> According to the previous studies researchers have been identified that, QoL is usually poorer among HD population than that in the age-matched general population due to typically high burden co-morbidity and complications of ESRD.<sup>6</sup>

Until 1963, the role of the nephrology nurses consisted mainly of palliative measures for ESRD patients. Over the years, this role included patient-centered education to enhance the patient knowledge on ESRD and HD. It makes sense to think that the well-informed patient is more adhere to the therapeutic regime. In addition to treatment adherence, international literature has shown that nurse-led education can, also, improve the health-related QoL.<sup>7</sup> The support received from health care workers has been delineated as potentially more influence than the support received from family members.<sup>8</sup>

As patients are unable to take care of themselves, nurses can make positive changes in the QoL through appropriate educational strategies using patient-centered education.<sup>9</sup> Because teaching patients to manage their chronic kidney disease (CKD) is an important part of preserving kidney function.<sup>10</sup>

CKD knowledge includes understanding how the kidneys function and identify symptoms associated with disease progression.<sup>11</sup> For example, patients need to be taught that maintaining appropriate blood pressure (BP), and taking their medication as prescribed, all work together to protect their kidney health.<sup>12,13</sup>

Lorig et al reported that enhancing knowledge, developing self-management skills and building confidence are considered to be important variables associated with improving outcomes, including health-related quality of life (HRQoL), among patients with chronic disease.<sup>14</sup>

There are limited studies in Sri Lanka about HRQoL among HD patients. Considering the importance of knowledge, satisfaction and QoL especially in vulnerable patients such as patients undergoing HD treatment, this study is carried-out to assess the knowledge and treatment satisfaction among HD patients who are attending to Emergency Dialysis Unit, National Hospital, Kandy and to explore its relationship with the psychological well-being.

## METHODS

This is a cross-sectional study using convenience sampling method conducted in between January 2019-March 2019 at emergency dialysis unit, National Hospital, Kandy. There were 100 HD patients who agreed to participate were included for the study. Informed written consent was obtained by signature or thumbprint prior to the collection of the data. This study was approved by the (AHS/ERC/2018/064) ethics review committee, Faculty of Allied Health Sciences, University of Peradeniya.

## Exclusion criteria

Patients who dialysis for acute kidney injury (AKI), on dialysis for <3 months and patients with known cognitive impairments or psychiatric disorders were excluded from the study.

## Study instruments

### General data questionnaire (GDQ)

This questionnaire divided into 3 parts; part A, part B and part C. Information on gender, age, marital status, educational level, employment status, monthly income were included in part A. Part B consist of etiology for ESRD, dialysis vintage, dialysis frequency, previous history of kidney transplantation, future plans of kidney transplantation, History of paracentesis, presence of abdominal swelling, appetite level and symptom free period after HD treatment like clinical characteristics of the patients. Patient knowledge on HD compliance, kidney transplantation, antihypertensive drug usage, psychological well-being and treatment satisfaction was assessed in part C.

Psychological well-being was assessed by 3 questions. Such as, "Are you suffering regarding your disease condition?", "Is the therapeutic relationship adequate to manage your mental stress?" and "Is hospitality management of the staff nurses' helpful to build positive thoughts regarding your disease condition?" And, treatment satisfaction was categorized by whether feeling good or bad while there on dialysis treatment.

## Data analysis

Data were analyzed using statistical package for social sciences (SPSS) version 20.0. Continuous variables were reported as means (mean±SD) whereas categorical variables are expressed as the number and the proportions. Relationship between categorical variables was analyzed by Chi-square test.

## RESULTS

The participant age ranged between 19 to 84 years with a mean age of 45.17±SD years. Seventy-three (73%; n=73) of the total sample were male. Thirty-five (35%; n=35) of the patients reported with diabetes mellitus as their etiological factor for ESRD. Most of the patients were married (77%; n=77) and unmarried group was (23%; n=23). The majority of the patients have studied until GCE O/L, GCE A/L or higher education (86%; n=86) and remaining participants (24%; n=24) had below O/L education. Thirty-four (34%; n=34) patients had monthly income between Rs. 10,000-25,000 and 40% (n=40) reported over Rs. 25,000. Moreover, highest number of patients were unemployed (74%; n=74) while remaining patients were employed (26%; n=26). Demographic and

clinical characteristics of the study sample were summarized in Table 1.

Association between socio-demographic factors with patients' emotional suffering, knowledge and treatment satisfaction showed in Table 2. There was a statistical significant association has found between age and the emotional suffering (p=0.023). Emotional suffering was more prevalent among 25-45 years old age group. Moreover, there were no any significant association find between other socio-demographic factors with patients' knowledge, emotional suffering and treatment satisfaction.

The relationship between patients' emotional suffering with knowledge, treatment satisfaction and symptoms include in Table 3. According to that, patients' emotional suffering had significant association with knowledge on HD compliance (p=0.000), satisfaction on nursing staff

attitudes (p=0.001), worrying about the disease condition (p=0.000) and co-morbidities such as abdominal swelling (p=0.028) and bedridden status (p=0.008). Among that, 77.8% (n=28) of patients who had adequate knowledge related to the disease condition were absence with emotional suffering.

Most of the study participants in this study were good physical and emotional status. According to the results, only 19% (n=19) of patients presented with emotional suffering and 40% (n=40) of patients worried about their disease condition.

However, majority of the patients satisfied with nursing care and nurses' co-operation. They confirmed nurses' co-operation helped to reduce their emotional suffering level. Occurrence of physical discomforts was much higher than that in the poor mental health study participants.

**Table 1: Demographic and clinical characteristics of the study sample (n=100).**

Characteristic	N (%)
<b>Age (years), mean (SD)</b>	45.17 (13.604)
<b>Dialysis vintage (months), mean (SD)</b>	11.72 (17.001)
<b>Gender</b>	
Male	73 (73)
Female	27 (27)
<b>Marital status</b>	
Married	77 (77)
Unmarried	23 (23)
<b>Educational level</b>	
Below O/L	24 (24)
Up-to O/L	33 (33)
Up-to A/L	31 (31)
Degree/diploma	12 (12)
<b>Occupational status</b>	
Unemployed	74 (74)
Employed	26 (26)
<b>Monthly income</b>	
<10,000	26 (26)
10,001-25,000	34 (34)
25,001-50,000	31 (31)
>50,000	9 (9)
<b>Etiology of ESRD</b>	
Diabetes mellitus	35 (35)
Hypertension	26 (26)
Glomerular nephritis	3 (3)
Polycystic kidney disease	2 (2)
Other	34 (34)
<b>Presence with emotional suffering</b>	
Yes	19 (19)
No	81 (81)
<b>Worrying about the disease condition</b>	
Yes	40 (40)
No	60 (60)

**Table 2: Relationship between socio-demographic factors with patients’ emotional suffering, knowledge and treatment satisfaction.**

Characteristic	Emotional suffering	Knowledge on HD compliance	Satisfaction on nursing staff co-operation	Satisfaction on nursing staff attitudes	Nursing staff concern about the health issues reduced stress
<b>Age</b>	0.023*	0.111	0.255	0.472	0.255
<b>Gender</b>	0.221	0.376	0.713	0.385	0.285
<b>Education</b>	0.444	0.291	0.630	0.190	0.291
<b>Marital status</b>	0.703	0.868	0.235	0.413	0.666
<b>Monthly income</b>	0.154	0.415	0.776	0.640	0.416

\*Significance attributed as p value <0.05

**Table 3: Relationship between patients’ emotional suffering with knowledge, treatment satisfaction and symptoms.**

Characteristic	P value
<b>Knowledge on HD compliance</b>	0.000**
<b>Nursing staff co-operation</b>	0.146
<b>Satisfaction on nursing staff attitudes</b>	0.001**
<b>Satisfaction on nursing staff concern about the health issues</b>	0.001*
<b>Worrying about the disease condition</b>	0.000**
<b>Abdominal swelling</b>	0.028*
<b>Bedridden</b>	0.008**

\*Significance attributed as p value <0.05; \*\*significance attributed as p value <0.01

**DISCUSSION**

A significant proportion of people around the world are suffering from CKD and undergoing HD treatment and it is simply associated with physiological and psychological stressors. This study was carried out in emergency dialysis unit, National Hospital, Kandy and aimed to assess the knowledge and treatment satisfaction and its relationship with the psychological well-being among HD patients.

Socio-demographic factors, includes, age gender, ethnicity, education, marital status and monthly income may also play a major role in express mental stress in dialysis patients. A study in Brazil revealed that there was significant association between poor mental health and lower household income and highest level of psychological stress reported among females than males.<sup>15</sup> But in this study, there were no any significant association found between socio-demographic factors with emotional suffering other than age (<0.005). And it is highest among males than females. That can be due to high participations of males in this study. However, a study in Pakistan revealed that, males showed more depression, anxiety as compared to females while women reported poor quality of life as compared to men.<sup>16</sup> In the present study, patients with abdominal swelling and bedridden had a significant relationship with their mental stress.

According to this study results, knowledge and treatment satisfaction are an important role in dialysis patients.

Knowledge on HD compliance, satisfaction on nursing staff attitudes, satisfaction on nursing staff concern about the health issues and worrying about the kidney disease condition had statistically significant association with mental stress in this study cohort. A cross sectional study from Italy showed that the overall satisfaction for quality of dialysis care was 48.4%.<sup>15</sup> But in this study 63% of HD patients satisfied with the nursing care. Nearly, similar results reported in Kenya, which is 67.8% of satisfaction level among HD patients in National Hospital, Nairobi.<sup>17</sup> Another study on “staff burnout and patient satisfaction with the quality of dialysis care” from Northern Italy found that, there was a statistical significant positive correlation between staff personal accomplishment and client satisfaction (p<0.01). Moreover, a significant negative correlation reported between staff emotional exhaustion and patient satisfaction (p<0.01).<sup>18</sup>

**Limitations**

There were some limitations in this research study. This study was a cross-sectional study with a limited number of patients and conducted only in one center. Moreover, exclusion of continuous ambulatory peritoneal dialysis (CAPD) patients is another limitation. Further studies on dialysis centers with a greater sample size and including CAPD patients are needed.

**CONCLUSION**

Based on the results of this study, knowledge on disease condition and treatment, patient satisfaction on nursing care, attitudes directly affect for mental stress among HD patients. It is suggested to conduct a study on dialysis patients with longer follow up period and assess the effect of mental stress periodically.

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