



# The influence of social support in hemodialysis patients : Family, Friend, Medical team

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## Background

- A number of patients with End-Stage Renal Disease (ESRD) have significant impairment in social support. Especially, the limited function of patients with hemodialysis (HD) prevents them from social activities and even makes them social withdrawal. Clinical problems such as nutritional status and HD adequacy, and psychosocial problems such as quality of life, anxiety and depression are associated with increased morbidity and mortality in HD patients. However, there are few studies of the factors affecting the social support in HD patients.
- The aim of the current study was to identify the clinical and psychosocial factors including quality of life related to impaired social support in HD patients.

## Method

- Study design:** Cross-sectional study in single center (Daegu Catholic University Medical Center)
- Study period:** Sep. 2013 ~ Oct. 2013
- Inclusion**
  - Patients of CKD stage V with hemodialysis (N=101)
  - age  $\geq$  20
- Exclusion**
  - acute kidney injury
  - hemodialysis vintage < 3 months
- Social support**  
Using Multidimensional Scale of Perceived Social Support (MSPSS)
- Psychosocial factors**
  - Quality of life  
using Euro Quality of Life Questionnaire 5-Dimensional Classification (EQ-5D)
  - Anxiety and Depression  
using Hospital Anxiety and Depression Scale
  - Cognitive disorder  
using Montreal Cognitive Assessment
  - Sleep disorder  
using Pittsburgh Sleep Quality Index
- Statistics Methods**  
Using logistic regression with backward selection

## Results

**Table 1. Demographics of Patients with End-Stage Renal Disease on Hemodialysis(N=101)**

Variables	Mean $\pm$ SD or n (n of patients = 101)
Age, years	57.1 $\pm$ 12.1
Male : Female (%)	55 (54.5) : 46 (45.5)
Height, cm	162.8 $\pm$ 8.3
Body Weight, kg	58.9 $\pm$ 10.2
BMI, kg/m <sup>2</sup>	22.1 $\pm$ 3.0
Duration of HD, months	36.2 $\pm$ 36.2
MSPSS_total	36.8 $\pm$ 9.3
MSPSS_family	14.79 $\pm$ 4.28
MSPSS_friend	10.44 $\pm$ 4.76
MSPSS_medical team	10.74 $\pm$ 4.39
Cause of ESRD (%)	
DM	53 (52.5)
HTN	22 (21.8)
CGN	12 (11.9)
others	14 (12.9)

n: number of patients, BMI: body mass index, HD: hemodialysis, MSPSS: multidimensional scale of perceived social support, DM: diabetes mellitus, HTN: hypertension, CGN: chronic glomerulonephritis

**Table 2. Psychosocial parameters of hemodialysis patients**

Variables	Mean $\pm$ SD, score (n of patients = 101)
EQ-5D	0.702 $\pm$ 0.19
HADS_Anxiety	6.11 $\pm$ 4.16
HADS_Depression	9.60 $\pm$ 3.95
MOCA	19.94 $\pm$ 6.96
PSQI	8.39 $\pm$ 4.61

EQ-5D: Euro quality of life questionnaire 5-dimensiona classification, HADS: hospital anxiety and depression scale, MOCA: Montreal cognitive assessment, PSQI: Pittsburgh sleep quality index

**Table 3. Clinical laboratory parameters of hemodialysis patients**

Variables	Mean $\pm$ SD or n (n of patients = 101)
SBP/DBP, mmHg	143.3 $\pm$ 22.4/78.6 $\pm$ 14.3
Kt/V	1.43 $\pm$ 0.57
URR, %	66.9 $\pm$ 11.9
nPCR, g/kg/day	0.81 $\pm$ 0.18
WBC, g/dL	6,100.9 $\pm$ 1,844.2
Hemoglobin, g/dL	10.1 $\pm$ 1.0
Protein/Albumin, mg/dL	6.8 $\pm$ 0.5/3.9 $\pm$ 0.3
Calcium/Phosphate, mg/dL	8.9 $\pm$ 0.7/5.4 $\pm$ 1.9
Fe, $\mu$ g/dL	70.3 $\pm$ 23.3
TIBC, $\mu$ g/dL	262.7 $\pm$ 64.6
Ferritin, ng/mL	243.3 $\pm$ 223.6
Intact PTH, pg/dL	335.2 $\pm$ 264.3
25(OH)D, ng/mL	16.4 $\pm$ 8.9
1,25(OH) <sub>2</sub> D, pg/mL	7.3 $\pm$ 3.6
Total cholesterol/TG, mg/dL	137.1 $\pm$ 33.0/122.6 $\pm$ 66.0
LDL/HDL, mg/dL	83.2 $\pm$ 28.5/41.8 $\pm$ 12.2
CRP, mg/L	4.3 $\pm$ 9.6

n: number of patients, SBP: systolic blood pressure, DBP: diastolic blood pressure, Kt/V: K-dialyzer clearance of urea, t-dialysis time, V-volume of distribution of urea, URR: urea reduction ratio, nPCR: normalized protein catabolic rate, TIBC: total iron binding capacity, PTH: parathyroid hormone, TG: triglyceride, LDL: low density lipoprotein, HDL: high density lipoprotein, CRP: C-reactive protein

**Table 4. Association with impaired social support and clinical and psychosocial factors using Pearson's correlation coefficient**

	r value	p value
Quality of life	0.332	0.001
Depression	-0.290	0.003
Anxiety	-0.372	<0.001
Serum creatinine	-0.270	0.007

**Table 5. Multivariate analysis of risk factors for impaired social support**

	95% CI	P value
Quality of life	0.615 ~ 19.799	0.037
Creatinine	-1.543 ~ -0.319	0.003

## Conclusions

- This study explored the determinants of high susceptibility to the impaired social support in HD patients. Especially, support from friends is the lowest among the social supports. We found that the impaired social support is associated with the quality of life and serum creatinine.
- Further study will be needed because of the possibility of different results depending on culture and ethnicity. As well as, we should consider the psychosocial interventions to improve the impaired social support.

