

## Original Article

## Depression Levels of the Hemodialysis Patients Living In Bingol City Center

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### Abstract

**Purpose:** This study was carried out to determine the depression levels and influencing factors in the patients continuing hemodialysis treatment in the province of Bingol.

**Method:** The study was performed with 65 patients treated in Bingol State Hospital Hemodialysis Unit. The questionnaire form used in the research is consisted of two sections. The first section of the form comprises the questions investigating socio-demographic features, and the second section comprises Beck Depression Scale (BDS).

**Findings:** 52.3% of the participants are male and 47.7% are female. 49.2% of the participants do not have social security. While there is a statistically significant difference between male patients' having social security and depression scale ( $p < 0.05$ ); there is not a statistically significant difference between marital status, occupation, income, living together, having someone for helping the care and smoking ( $p > 0.05$ ). According to this, 70.6% of the patients having severe depression do not have social security ( $p < 0.05$ ). There is statistically significant difference between social security and depression scale also in female patients as well as male patients; and it was observed that 78.6% of the female patients with severe depression and 72.7% of the patients with moderate depression do not have social security ( $p < 0.05$ ).

**Conclusion:** The results of this study show that the disease causes depression to a considerable extent in hemodialysis patient group. For that reason, regular psychiatric assessment is required for this patient group.

**Key words:** Hemodialysis, depression, socio-demographic features.

### Introduction

In hemodialysis patients, there is the possibility of a number of losses, such as, the loss of the physical abilities, cognitive abilities, family roles, sexual functions, and the functions of the kidneys, which is a vital organ (Cimilli, 1994). Factors such as having a strict diet program to be followed; taking too much time during dialysis hours, and fear of death are also factors that threaten the situation of psychological well-being (Kimmel, 2002, Kafkia, Vehvilainen-Julkunen & Sapountzi-Krepia, 2017). Hemodialysis application puts patients in a dependent position because of its characteristics. Constant dependence on the individuals other than of themselves and on certain equipment forms certain difficulties in patients (Kumbasar, 1999). These kinds of losses, becoming dependent by losing control over the life, some medications received, and the uremia itself, which could not

be treated adequately, can lead to depression (Tossani et al. 2005)

Depression is considered as the main psychological problem seen in hemodialysis patients (Finkelstein et al. 2002, Yazici et al. 2008, Vehvilainen-Julkunen and Sapountzi-Krepia, 2014). The incidence varies from 5% to 60% especially during the first 6 months of the treatment (Harrington & Brener, 1973, Levy et al. 2002).

This study has been carried out in order to detect the frequency of the depressive symptoms in hemodialysis patients in Bingol province; and to investigate the factors associated with the appearance of these depressive symptoms.

### Methodology

This study, which is descriptive, was conducted with 65 hemodialysis patients, who have voluntarily accepted to participate in the study

and were treated at Bingol State Hospital Hemodialysis Unit between 01 November 2015 and 01 January 2016. Official written permissions of the relevant institutions has been obtained before the investigation. The questionnaire formed by the researchers based on the literature has two parts. The first part of the questionnaire consisted of questions examining socio-demographic characteristics and the second part was consisted of Beck's Depression Inventory (BDI) questions.

The BDI scale was designed to contain the symptoms of depression. The scale consists of 21 symptom categories. Each symptom category consists of four "self-assessment" items. These items are scored in the range of 0 to 3, as: 0, 1, 2, 3. The highest score that can be get on the scale is 63. Validity and reliability studies on Beck Depressive Symptom Scale have been conducted by Buket Tegin in 1980 (Oner, 1987). The data were evaluated in the statistical program pack.

Averages were presented with standard deviation and  $p < 0.05$  was determined as the significance level. In statistical analysis, chi-square, t-test, and variance analysis were used as significance tests.

## Results

65 patients, who were treated at Bingol State Hospital Hemodialysis Unit, have participated in the study. 52.3% of the patients were males and 47.7% were females. The average ages for the patients were  $55.7 \pm 17.6$  years in males and  $58.5 \pm 16.5$  in females.

When the socio-economic statuses of the patients were examined; it was determined that 80.0% of the patients were married. 20.6% of males and 77.4% of females were illiterate.

When their working conditions were evaluated, it was found that, 97.1% of men and women have not been working in any job and 49.2% of them do not have social security. 73.9% of the patients were found to have low and very low income. The majority (84.5%) of the patients has been living with their family and almost all of them (96.9%) have an individual, who helps for their care. When examined that whether they were satisfied with the social support provided, 55.4% of the patients have declared that they were satisfied with the support (Table 1).

When the duration and frequency of the dialysis for the patients were examined, the averages for the male patients were  $3.6 \pm 3.2$  and for the female patients were  $4.7 \pm 3.7$  years, and the patients received dialysis treatment three days a week on average (Table 2).

Beck depression scale (inventory) was applied to the patients. According to the Beck depression scale, 47.7% of the patients had major depression. The rate of major depression was higher in males (50.0%) than in females (45.2%), however it was not evaluated as statistically significant ( $p > 0.05$ ). According to this scale, only 9.2% of the patients have no depression at any level. The average score for Beck Depression Scale was calculated as  $27.5 \pm 11.6$  in males and  $28.3 \pm 11.8$  in females and there was no statistically significant difference ( $p > 0.05$ ) (Table 3).

There was a statistically significant difference between groups of male patients' having social security and depression scale groups ( $p < 0.05$ ); and there was no statistically significant difference between depression scale groups and the marital status, work, income, living together, having an individual for helping the care, and smoking status ( $p > 0.05$ ). According to this, 70.6% of male patients without social security have major depression ( $p < 0.05$ ). When depression level is examined according to working status, all of the male patients having major depression do not have any job; and 70.6% of male patients with very low and low income have major depression, however this result is not statistically significant ( $p > 0.05$ , Table 4).

The socio-economic characteristics of female patients and their distribution according to the Beck Depression Scale groups are presented in Table 5. There was a statistically significant difference between their social security status and the depression scale group in the female patients, as it was the same for the male patients; and it was observed that, 78.6% of female patients without social security had major depression and 72.7% had moderate depression ( $p < 0.05$ ). There was no significant difference between the other features and depression scale groups ( $p > 0.05$ , Table 5).

**Table 1. Distribution of hemodialysis patients according to their socio-economic status**

Features	Male		Female		Total	
	No	%	No	%	No	%
<b>Gender</b>	34	52.3	31	47.7	65	100.0
<b>Marital status</b>						
Married	26	76.5	26	83.9	52	80.0
Single	8	23.5	2	6.4	10	15.4
Widow/divorced	0	0.0	3	9.7	3	4.6
<b>Education Status</b>						
Illiterate	18	52.9	30	96.8	48	73.8
Literate	16	47.1	1	3.2	17	26.2
<b>Work status</b>						
Has a job	0	0.0	0	0.0	0	0.0
Doesn't have a job	33	97.1	31	100.0	64	98.5
Retired	1	2.9	0	0.0	1	1.5
<b>Social security</b>						
Yes	21	61.8	12	38.7	33	50.8
No	13	38.2	19	61.3	32	49.2
<b>Income status</b>						
Low	24	70.6	24	77.4	48	73.8
Middle	10	29.4	6	19.4	16	24.6
Well	0	0.0	1	3.2	1	1.6
<b>Living together</b>						
With family	6	17.6	1	3.2	7	10.8
Alone	2	5.9	0	0.0	2	3.1
Spouse	26	76.5	26	83.9	52	80.0
Other	0	0.0	4	12.9	4	6.1
<b>Someone to help the care</b>						
Yes	32	94.1	31	100.0	63	96.9
No	2	5.9	0	0.0	2	3.1
<b>Smoking</b>						
Yes	14	41.2	2	6.5	16	24.6
No	20	58.8	29	93.5	49	75.4
<b>Satisfied with social</b>						
No	8	16.1	5	23.5	13	20.0
Yes	26	83.9	26	76.5	52	80.0

\*Chi-square test has been used.

**Table 2. Average and standard deviation values for dialysis**

Features	Male		Female	
	x	S	x	S
Age (year)	55.7	17.6	58.5	16.5
Years of dialysis	3.6	3.2	4.7	3.7
Frequency of dialysis (hours/day)	3.0	0.1	2.9	0.3
Year of diagnosis (year)	4.3	3.2	6.6	6.1

\* T test has been used for numerical variables.

**Table 3. Distribution of hemodialysis patients according to Beck Depression Scale**

Beck Depression Scale (BDI)	Male		Female		Total	
	No	%	No	%	No	%
Normal (0-10 points)	4	11.8	2	6.5	6	9.2
Mild Depression (11-16 points)	3	8.8	4	12.9	7	10.8
Moderate Depression (17-30 points)	10	29.4	11	35.5	21	32.3
Major Depression (31-63 points)	17	50.0	14	45.2	31	47.7
<b>Total BDI Points (x±S)</b>	27.5±11.6		28.3±11.8		27.9±11.7	

\* Chi-square test for categorical variables and t test for numerical variables have been used.

**Table 4. Socio-economic characteristics of male hemodialysis patients and their distribution according to the Beck Depression Scale Groups**

Socio-Economical status	Beck Depression Scale (BDI)							
	Normal (n:4) (0-10 points)		Mild Depression (n:3) (11-16 points)		Moderate Depression (n:10) (17-30 points)		Major Depression (n:17) (31-63 points)	
	n	%	n	%	n	%	n	%
<b>Marital status</b>								
Married	3	75.0	3	100.0	9	90.0	11	64.7
Single	1	25.0	0	0.0	1	10.0	6	35.2
Widow/divorced	0	0.0	0	0.0	0	0.0	0	0.0
<b>Education Status</b>								
Illiterate	0	0.0	1	33.3	2	20.0	4	23.5
Literate	2	50.0	1	33.3	4	40.0	4	23.5
Primary School	1	25.0	1	33.3	4	40.0	6	35.4
Secondary School	1	25.0	0	0.0	0	0.0	3	17.6
<b>Work status</b>								
Has a job	0	0.0	0	0.0	0	0.0	0	0.0
Doesn't have a job	4	100.0	3	100.0	9	90.0	17	100.0
Retired	0	0.0	0	0.0	1	10.0	0	0.0
<b>Social security</b>	P: 0.02							
Yes	4	100.0	3	100.0	9	90.0	5	29.4
No	0	0.0	0	0.0	1	10.0	12	70.6
<b>Income status</b>								
Very low	0	0.0	0	0.0	2	20.0	4	23.5
Low	2	50.0	3	100.0	5	50.0	8	47.1
Middle	2	50.0	0	0.0	3	30.0	5	29.4
Well	0	0.0	0	0.0	0	0.0	0	0.0
<b>Living together</b>								
With family	3	75.0	3	100.0	9	90.0	15	88.2
Alone	0	0.0	0	0.0	0	0.0	2	11.8
Spouse	1	25.0	0	0.0	1	10.0	0	0.0
<b>Someone to help the care</b>								
Yes	3	75.0	3	100.0	10	100.0	16	94.1
No	1	25.0	0	0.0	0	0.0	1	5.9
<b>Smoking</b>								
Yes	1	25.0	2	66.7	2	20.0	9	52.9
No	3	75.0	1	33.3	8	80.0	8	47.1

<b>Satisfied with social support</b>								
Not satisfied at all	1	25.0	0	0.0	3	30.0	2	11.8
Not very satisfied	0	0.0	1	33.3	1	10.0	0	0.0
Somewhat satisfied	0	0.0	0	0.0	0	0.0	2	11.8
Satisfied	2	50.0	1	3.3	4	40.0	12	70.6
Very satisfied	1	25.0	1	3.3	2	20.0	1	5.8

\* Chi-square test has been used.

**Table 5. Socio-economic characteristics of female hemodialysis patients and their distribution according to the Beck Depression Scale Groups**

Socio-Economical status	Beck Depression Scale (BDI)							
	Normal (n:2) (0-10 points)		Mild Depression (n:4) (11-16 points)		Moderate Depression (n:11) (17-30 points)		Major Depression (n:14) (31-63 points)	
	No	%	No	%	No	%	No	%
<b>Marital status</b>								
Married	0	0.0	4	100.0	9	81.8	13	92.9
Single	2	100.0	0	0.0	0	0.0	0	0.0
Widow/divorced	0	0.0	0	0.0	2	18.2	1	7.1
<b>Education Status</b>								
Illiterate	0	0.0	4	100.0	9	81.8	11	78.6
Literate	2	100.0	0	0.0	2	18.2	2	14.3
Primary School	0	0.0	0	0.0	0	0.0	1	7.1
<b>Work status</b>								
Has a job	0	0.0	0	0.0	0	0.0	0	0.0
Doesn't have a job	2	100.0	4	100.0	11	100.0	14	100.0
<b>Social security*</b>	<b>0.08</b>							
Yes	2	100.0	4	100.0	3	27.3	3	21.4
No	0	0.0	0	0.0	8	72.7	11	78.6
<b>Income status</b>								
Very low	2	100.0	0	0.0	3	27.3	4	28.6
Low	0	0.0	3	75.0	4	36.3	8	57.1
Middle	0	0.0	1	25.0	3	27.3	2	14.3
Well	0	0.0	0	0.0	1	9.1	0	0.0
<b>Living together</b>								
With family	2	100.0	4	100.0	7	63.6	12	85.7
Alone	0	0.0	0	0.0	2	18.2	0	0.0
Spouse	0	0.0	0	0.0	2	18.2	2	14.3
<b>Someone to help the care</b>								
Yes	2	100.0	4	100.0	11	100.0	14	100.0
No	0	0.0	0	0.0	0	0.0	0	0.0
<b>Smoking</b>								
Yes	0	0.0	0	0.0	2	18.2	0	0.0
No	2	100.0	4	100.0	9	81.8	14	100.0
<b>Satisfied with social support</b>								
Not satisfied at all	0	0.0	0	0.0	1	9.1	0	0.0
Not very satisfied	0	0.0	0	0.0	2	18.2	2	14.3
Somewhat satisfied	0	0.0	2	50.0	1	9.1	2	14.3
Satisfied	0	0.0	2	50.0	5	45.4	10	71.4
Very satisfied	2	100.0	0	0.0	2	18.2	0	0.0

\* Chi-square test has been used.

## Discussion

65 patients, who were treated at Bingol State Hospital Hemodialysis Unit have participated in the study. 52.3% of the patients were males and 47.7% were females. While the number of male patients is higher in the studies of Kuzeyli et al., the majority of the patients are female in the study of Kocer (Kuzeyli et al. 2004, Kocer, 2006).

When the socio-economical statuses of the patients are examined; it is observed that, 80.0% of the patients are married. Also in their study, Durmaz et al. have found that the majority of dialysis patients were married (Durmaz et al. 2008). On the other hand, while the divorce rate is 9.7% in female patients, the fact that there is no divorce in male patients is remarkable. 20.6% of males and 77.4% of females are illiterate and 49.2% of them have no social security.

The Beck Depression Scale was applied to the patients. According to the Beck Depression Scale, 47.7% of the patients had major depression. The rate of major depression was higher in males (50.0%) than in females (45.2%), however, it was not statistically significant ( $p>0.05$ ). According to this scale, only 9.2% of the patients have no depression at any level. The results of our study are consistent with the literature (Demirel et al. 2001, Cetinkaya et al. 2008). The average score of Beck Depression Scale was calculated as  $27.5\pm 11.6$  in males and as  $28.3\pm 11.8$  in females; and there was no statistically significant difference ( $p>0.05$ ). In their study, Baydogan and Dag have found that the depressive symptom scores of female dialysis patients were significantly higher than the scores of male patients (Baydogan & Dag, 2008). Although some of the studies investigating depression in dialysis patients suggest that male patients have a significantly higher level of depression than female patients, there are also results of the studies showing that there is no significant difference between genders regarding the level of depression (Astan, 2001).

While there was a statistically significant difference between groups of male patients' social security assessment and depression scale ( $p<0.05$ ); there was no statistically significant difference between depression scale groups and marital status, work, income, living together, having individuals for helping the care and smoking status ( $p>0.05$ ). According to this, 70.6% of the patients with major depression had

no social security ( $p<0.05$ ). There was a statistically significant difference between the social security status and the depression scale group for the female patients, as it was the same in the male patients. 78.6% of the women with major depression and 72.7% of the patients with moderate depression did not have any social security ( $p<0.05$ ). There was no significant difference between other features and depression scale groups ( $p>0.05$ ). There are also other studies that support the findings of our study. In the study of Celik and Acar, they have determined that the BDI scores of the married patients were higher than the single patients, however, the difference was not statistically significant (Celik & Acar, 2007). In the study of Sagduyu, it was concluded that age did not affect depression in hemodialysis patients (Sagduyu et al. 2006). And in another study, depression scores were found to be higher in subjects with low socioeconomic status than those with moderate and high status. This finding is similar to our study's findings (Watson et al. 1995). This might be because of the patient's chronic disease resulting in extra costs and loss of work and power.

## Results and Recommendations

This research has revealed that hemodialysis patients have the tendency of having psychological problems such as depression. Performing psychiatric evaluations, and if necessary, the initiation of psychiatric treatment programs on patients who are undergoing hemodialysis treatment, will both facilitate the psychosocial adaptation of patients and increase the success of treatment and the patients' quality of life. As the result; the frequency of psychiatric problems, especially depression, in hemodialysis patients, reduces their physical and social functioning. Along with the vicious cycle due to this situation, psychological problems and disability will gradually increase. And accordingly, the compliance with the treatment will deteriorate. The effects of mental disability on the morbidity and mortality indicators of chronic physical diseases should be investigated in long-term studies.

The socio-cultural conditions of our country, and the narrowed habitats for chronic patients, have been increasing the tendency for the depression. For this reason, we suggest physicians dealing with dialysis patients to monitor the emotional states of their patients more carefully and receive

professional help when necessary. We consider that, multi-centered similar studies will contribute much more to the control and treatment of dialysis patients.

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