



Relations between Depressive Symptoms and Quality of Life with Caregivers Burden in Hemodialysis Patients

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Abstract

Background: Chronic renal failure is among the chronic disease which due to persistence of the disease and long treatment process has various effects on the physiological, psychological, functional ability, lifestyle changes, and independence status of the patient and his family. This can cause symptoms of depression, change in quality of life and the burden feeling in caregivers.

Methods: This is a cross-sectional analytical descriptive study that was conducted in 2014 on the caregivers of hemodialysis patients. Research instruments were consisted of 4 parts: 1. demographic data check list, 2. Caregiver burden questionnaire, 3. , 4. Data were analyzed by SPSS statistical software and Pearson correlation coefficient tests. A *p* value of less than 0.05 was considered statistically significant.

Results: In this study, 74.4% of caregivers have moderate to severe depression score and did not have a good quality of life, 72.5% reported moderate to severe levels of caregiver burden. The results showed that there was a significant relationship between the three variables, quality of life, depression and caregiver burden in the caregivers of hemodialysis patients. **Conclusions:** Our results showed that more than half of the caregivers of hemodialysis patients had moderate to severe levels of caregiver burden, hemodialysis can also reduce the quality of life and psychological problems, depression in the caregivers of these patients. therefore it is worthy that health officials and nurses pay special attention to this issue by communicating with these patients and their caregivers.

Keywords: Depression, Quality of life, Caregiver Burden, Caregivers, Hemodialysis Patients.

Introduction

Chronic renal failure is an aggravated and uncorrectable state in performance of kidneys in which the ability of the body in controlling the metabolic and electrolytic balance undergoes severe deterioration, while the levels of urea increases significantly in the body(1). While kidneys are not able to perform their routine tasks due to failures, dialysis is used to get unnecessary liquids and wastes out of the body(2). The number of those afflicted with renal failure increases 2 folds every 7 years(3). Based on the statistics of 2008, some 16600 hemodialysis patients are under hemodialysis under 355 dialysis centers. Every year,

this number increases for 20 percent(4). Advancement of science and treatment technology along with longer life expectancy have resulted in longer life span for those afflicted with chronic renal failure. Chronic diseases are common around the world as a serious health and therapeutic issue. Due to the persistence of disease and treatment period, chronic renal failures are among chronic diseases which have great influence on physiological, mental and spiritual states and affect performance ability and change the life and independence pattern of the individual and his family (5). It will result in reduction of life standards, mental

and physical problems and limitation of recreational, social and occupational activities(6). On the other hand, the existence of such challenges usually makes the caregiver have a sense of fatigue, loneliness and failure due to lack of support, training and information (7).

During the course of the disease and her treatment, caregivers are those who have the highest degrees of involvement in looking after the patient and help him comply with the chronic disease (8). In those afflicted with chronic renal failures, family needs to undertake the required supportive and treatment functions for the patients at home and in outpatient centers, like dialysis centers of hospitals. This can influence their mental health in various extents and create the background for depression.

Depression is a mood disorder which shows herself with symptoms such as low mood, loss of the sense of joy and interest, loss of weight, insomnia, fatigue, sense of emptiness, psychomotor slowness, sense of guilt, and disability in focusing and thoughts of death(9). Depression is quite common in those afflicted with renal failure, however, symptoms of depression in the caregivers to the patients afflicted with chronic diseases is also very common. Caregivers to those afflicted with chronic diseases experience a lot of stress and anxiety (10) and this may result in negative symptoms of depression and anxiety.

Quality of life is a concept which covers health and performance, socio-economic and mental states, and the mental and spiritual moods of the family(11). Various studies conducted in different societies show that patients undergoing Hemodialysis have a low quality of life (12). The studies conducted on the caregivers to those patients also indicated a low quality of life for them, too(13). Little attention is also paid to the caregivers and all the attention is paid to the patient. Hospitalization of the patient and the other factors associated with that may result in higher levels of depression and lower quality of life in caregivers (14). Thus, studying the status of the patients and determining their requirements is of particular importance.

Caregiver burden is a general term used to describe the physical, emotional and economic costs of caregiving(15). Caregiver burden shows herself in the form of constant difficulty, anxiety, or negative experience due to providing caregiving by the caregiver (16).

Burden can be defined mentally and concretely. Mental burden is defined in the form of the changes and disorders caused in life due to caregiving. Mental burden has been defined as the reaction or view of the caregiver to caregiving experience (17).

Concerning the relationship between depression and quality of life with caregiver burden, various researches have been conducted among the chronic patients. A study titled “The relationship between signs of depression and anxiety and quality of life in baby sitter afflicted with Cystic Fibrosis” conducted by Driscoll et al. in the US, high levels of anxiety and depression and low quality of life was reported among the parents of such children(18).

Family is the best source to provide caregiving for Hemodialysis patients and family members experience a high level of tension and anxiety due to long process of renal failure, great side effects of treatment with dialysis, new needs and fundamental changes in the way of life (19). Identifying such pressures in the proper time in the caregivers plays a major role in improving their mental health. The majority of the researches conducted in this area have studied depression levels and quality of life in the patients. Considering the growing number of the elderly people afflicted with chronic renal failure who require caregiving and the existence of few studies in this field, the present research seeks to study depression and quality of life and determine their relationship with caregiving burden in the caregivers to hemodialysis patients.

Materials and Methods

This descriptive correlational study was conducted in 2014 with the goal of determining the relationship between signs of depression and quality of life with caregiving burden in caregivers to hemodialysis patients. The population included caregivers to those patients afflicted with renal failures who had resorted to hemodialysis units of Imam Khomeini Hospital of Jiroft (53 people) and 12 Farvardin Hospital of Kahnuj (16 people). On the whole, 69 patients were undergoing hemodialysis. After gaining permission from the authorities, the author resorted to hemodialysis units and studied all caregivers to hemodialysis patients through census method (a caregiver is someone who lives with the patient and plays the major role in looking after him/her). Once the research objectives had been described, the questionnaires were distributed among the caregivers. The questionnaires were completed while the author

was there to help them if they had any questions (as of those respondents who could not read the questionnaires, interviews were utilized to fill the forms).

Features of data collection tools

Research tools included demographic information checklist, Beck's depression questionnaire, quality of life questionnaire (SF36) and caregiver burden questionnaire. Demographic information checklist of the patients dealt with age, gender, marital status, education level, occupation, onset of the illness, period of dialysis, number of dialysis in a week, the ability of conducting daily tasks, and comorbidities (such as Hypertension, Diabetes, ...). Demographic information checklist of the caregivers dealt with age, gender, marital status, education level, occupation, income, governmental organizations' support, and the relationship with the patient.

1. Beck's depression questionnaire: this questionnaire was developed first in 1967 and has 21 questions which measure depression and they are graded from 0 to 63. Each question has 4 to 5 alternatives that one is chosen based upon the individual's personality. This questionnaire is one of the most common tools used to measure depression. Various extensive studies have been conducted about the psychometric properties (validity and stability) and the appropriate utilization of the test. A meta-analysis reported a correlational coefficient between 0.73 to 0.92 with an average of 0.86. This test has been utilized in various theses and it has been shown to have high levels of validity and stability (20).

2. quality of life questionnaire (SF36): it has 36 questions which measure eight aspects. These aspects include: general health, physical performance, physical pain, limited performance due to physical problems, social performance, a sense of freshness, mental health, and limited role due to mental problems. Each of these eight aspects of health gain a score from 0 to 100 where higher scores indicate a better condition. This questionnaire is one of the general tools designed to measure life quality associated with health. The stability and validity of its Iranian version has been verified (21).

3. caregiving tool has been designed and devised by Almesta et al. in 1996 (28). In a thesis titled "Investigating the relationship between social support and a sense of caregiver burden in mothers with premature infants hospitalized in the intensive care

unit for infants", the validity and stability of this tool was studied by a research team in Razi Nursing College of Kerman. The validity was reported to be 82%, while her stability was calculated to be 86% based on the internal correlation coefficient using Cronbach's alpha (22). Caregiving burden tool includes 22 items and studies the burden caused by looking after the patient afflicted with a chronic disease. The average score of the 22 items represents the total score of caregiving burden and higher scores represent high levels of caregiving burden. Total caregiving burden score can be divided into 3 levels: low burden (1.00 – 1.99), average burden (2.00 – 2.99), and high burden (3.00 to 4.00). Thus, a score of 22-43 represents low burden, a score of 44-65 represents average burden and a score of 65-88 is considered to be severe burden (29). This tool includes 5 scopes: 1) total pressure (8 items) which represents lack of freedom on the side of the caregiver and the pressure caused by caregiving, 2) loneliness (3 items) which represent limited social interactions and lack of specific times for the caregiver himself, 3) hopelessness (5 items) which includes loneliness and tolerating physical pain, influence of financial problems and a sense of injustice in life, 4) emotional involvement (3 items) which represents anger and a sense of shame due to the disease, and 5) environment (3 items) which represents lack of caregiving experience and lack of ability in managing the problems of the patient. Scoring system is based upon the Likert method (never, rarely, sometimes, and often respectfully 1,2,3,4) (23).

Data calculation method

Data analysis was conducted using SPSS 19. Descriptive statistics was utilized in the form of frequency tables and indicators such as average and standard deviation to describe demographic information, quality of life and caregiving burden. Inferential statistics in the form of Pearson's correlation coefficient was used to show the relationship between depression, quality of life, and caregiving burden. T test and Anova test were utilized to show the relationship between these variables and demographic information. The significance level for all these tests was 0.05.

Moral considerations

It was emphasized that the information would be secret and just used just for research purposes. There was no obligation for participating in the test and people were free to decide if they wanted to take part in the test or not.

Results

69 caregivers to those patients afflicted with renal failures who had resorted to hemodialysis units of Imam Khomeini Hospital of Jiroft (53 people) and 12 Farvardin Hospital of Kahnuj (16 people) were studied. Keeping in mind that 10 caregivers decided not to take part in the test and since 8 questionnaires were incomplete, thus 51 caregivers entered the research of whom 41 were from Imam Khomeini

Hospital, while the rest were from 12 Farvardin Hospital of Kahnuj. The minimum and the maximum ages of the patients were 22 and 87 respectively which give an average age of 53.07 with a standard deviation of 17.90. The minimum and maximum ages of the patients were 18 and 80 respectively which give an average age of 42.11 with a standard deviation of 14.78. Tables 1 and 2 represent the demographic information of the patients and caregivers.

Table 1) demographic variables of the patients

Patient's information		Frequency	Percentage	Average and standard deviation
Age		-----	-----	53.07±17.90
Gender	Female	22	43.1	-
	Male	29	56.1	-
Marital status	Single	12	23.5	-
	Married	34	66.7	-
	Widow	5	9.8	-
Occupation	Unemployed	38	74.5	-
	Government job	6	11.8	-
	Self employed	2	3.9	-
	Retired	5	9.8	-
Education	Illiterate	26	51	-
	Junior high school	15	29.4	-
	Diploma	7	13.7	-
	University	3	5.9	-
Number of dialysis in a week	Twice	7	13.7	-
	Three times	44	86.3	-
Special disease	No	9	17.6	-
	Blood pressure	17	33.3	-
	Diabetes	15	29.4	-
	Other	10	19.6	-
Years undergoing hemodialysis	-	-	-	3.12±2.68

An analysis of total score of caregiving burden and scopes (total pressure, loneliness, emotional involvement, hopelessness and environmental involvement) showed that 12 (23.5%) caregivers would report high levels of caregiving burden, while 25 (49%) reported average levels of caregiving burden and 14 (27.5%) had low levels of caregiving burden. Table (3).

Studying the depression score, it turned out that 74.4% of the caregivers would report average to severe depression scores (table 4). Studying the quality of life score of caregivers to hemodialysis patients, it turned out that 33.3% of the caregivers would report proper quality of life scores, while 66.7% were deprived of having a favorable quality of life. The average scores of caregivers to hemodialysis patients in caregiving burden, quality of life and depression are reported in table (5).

Table 2) demographic variables of the caregivers

Caregiver's information		Frequency	Percentage	Average and standard deviation
Age		-----	-----	42.11±14.78
Gender	Female	35	68.6	-
	Male	16	31.4	-
Marital status	Single	7	13.7	-
	Married	44	86.3	-
	Widow	-	-	-
Occupation	Unemployed	38	74.5	-
	Government job	5	9.8	-
	Self employed	6	11.8	-
	Retired	2	3.9	-
Education	Illiterate	12	23.5	-
	Junior high school	13	25.5	-
	Diploma	16	31.4	-
	University	10	19.6	-
Relationship with the patient	Spouse	18	35.3	-
	Sibling	10	19.6	-
	Parents	6	11.8	-
Enough income	Yes	13	25.5	-
	No	38	74.5	-
Under the governmental support	Yes	19	37.3	-
	No	32	62.7	-

Table 3) frequency and percentage of caregiving burden in hemodialysis patients

Level of caregiving burden	Frequency	Percentage
Severe	12	23.5
Average	25	49
Low	14	27.5
Total	51	100

Table 4) frequency and percentage of depression in caregivers to hemodialysis patients

Level of depression	Frequency	Percentage
Severe	19	37.3
Average	14	27.4
Low	18	35.3
Total	51	100

Table 5) average and standard deviation scores of caregivers to hemodialysis patients in caregiving burden, quality of life and depression tests

Caregiving burden and its scope	Average	Standard deviation
Caregiving burden	54.01	13.41
Total pressure	21.15	5.64
Loneliness	8.13	3.93
Hopelessness	12.52	4.06
Emotional involvement	5.72	2.50
Environment	7.47	2.35
Quality of life	43.14	15.96
Physical performance	42.27	26.97
Physical problems	46.08	24.96
Physical pain	43.62	33.10
General health	39.21	18.01
Mental problems	32.83	16.92
Social performance	54.41	32.29
Freshness	34.32	23.47
Mental health	45.27	24.37
Depression	23.94	11.25

The results indicated a relationship between three variables of quality of life, depression and the level of caregiving burden and caregivers to hemodialysis patients. There was a positive relationship between depression and caregiving burden ($p=0.002$, $r=0.424$), while a negative relationship was observed between quality of life and caregiving burden ($p=0.001$, $r=0-$

.442). A negative relationship was also observed between the score of depression and quality of life ($p=0.000$, $r=0-.602$). Table 6 represents the level of significance and relationship between variables of depression, quality of life, caregiving burden and her scopes.

Table 6) relationship and significance level between caregiving burden score and its scopes with depression and quality of life scores

Item	1	2	3	4	5	6	7	8
1 Depression	1							
2 Quality of life	-0.602**	1						
3 Caregiving burden	0.424**	-0.442**	1					
4 Total pressure	0.445**	0.410**	0.870**	1				
5 Loneliness	0.330*	-0.144	0.465**	0.435**	1			
6 Hopelessness	0.412**	-0.358**	0.767**	0.570**	0.307*	1		
7 Emotional involvement	0.202	-0.162	0.497**	0.440**	0.237	0.123	1	
8 Environment	0.399**	-0.391**	0.731**	0.571**	0.403**	0.601**	0.158	1

$p<0/01$ **, $p<0/05$ *

To determine the relationship between demographic variables and the score of caregiving burden, quality of life and depression, Anova and t tests were utilized. Based on the results, a significant relationship would exist between age ($p=0.046$), education ($p=0.013$) and income ($p=0.004$) of the patient and depression score. In other words, younger caregivers with university education and low income show higher scores of depression.

Based on the results, a significant relationship would exist between marital status ($p=0.027$), education ($p=0.012$) and income ($p=0.009$) of the caregiver and quality of life score. In other words, caregivers to single patients with university education and low income show unfavorable quality of life.

Significant relationships were also observed between the age of the patient and caregiving burden ($p=0.031$). This significant relationship was also observed between the type of the income and caregiving burden ($p=0.000$). Caregivers to male patients with low income have higher caregiving burden scores.

Concerning the relationship between demographic variables and caregiving scopes, it was shown that a relationship would exist between patient's gender and total pressure ($p=0.016$) and hopelessness ($p=0.004$). Caregivers to single patients gained higher scores in such scopes. A relationship exists between income and total pressure ($p=0.000$), loneliness ($p=0.022$), hopelessness ($p=0.039$), and emotional attachment ($p=0.003$). Patients with low income had higher scores in these scopes. No relationship was observed between other demographic variables of the patients and caregivers with depression, quality of life, caregiving burden and its scopes ($p>0.05$).

Discussion

The present research has studied the relationship between the signs of depression and quality of life with caregiving burden in caregivers to hemodialysis patients. Most of the researches conducted so far have been focused on the patient and not on the caregivers, spouses, or those who live them (24). This study indicated a significant relationship between the scores gained in three variables of quality of life, depression and caregiving burden in the caregivers to hemodialysis patients. Those caregivers who had a lower quality of life reported higher levels of caregiving burden and higher depression score.

We realized that 72.5% of the caregivers had average and severe caregiving burden, while 74.4% had average to severe depression and 66.7% of them had unfavorable life conditions.

Pardiso believes that due to the chronic nature and long treatment of chronic renal failure, some changes in the performance of the family is inevitable (25). The study conducted by Blasco and Sisto showed that caring for dialysis patients may result in a sense of pressure and have destructive effects on the life of the caregivers. Thus, social support and psychological interventions are required to improve the life of the caregivers and patients (26).

Chung et al. showed a significant relationship between depression levels in patients afflicted with heart failure and their families (27). High levels of depression were reported in patients with high levels of depression and a lower quality of life was observed among them. In a study conducted on caregivers to dementia patients, Jouling et al. showed that a significant number of them had high levels of depression and anxiety and also low quality of life over the 12 months of study (28).

In a research titled "caregiving burden and life quality of caregivers to hemodialysis patients", Belasco et al reported a significant relationship between caregiving burden and quality of life. They said that caregivers to hemodialysis patients would experience caregiving burden and this will influence their quality of life (10). In a research titled "the quality of the life of caregivers to patients afflicted with Multiple Sclerosis and the control group" conducted in Kuwait, Al-Shubaili et al. reported the lowest level of the quality of life compared to the normal population (29). The researches conducted by Matso et al. showed that caregivers to hemodialysis patients may carry a heavy burden as they have to play a major role in supporting dialysis patients (30). In a research conducted to study the quality of the life of caregivers to hemodialysis patients of Khoy, Habibzadeh et al. reported that 52.5% of the caregivers had average to low quality of life and 85% percent would consider the supports of the society improper, while 65% would feel the vacant place of fun and recreations in their life (31). In a research designed to investigate the caregiving burden and the associated factors in caregivers to hemodialysis patients of Gorgan, Abbasi et al. reported that 74.2% of the caregivers were suffering from caregiving burden (32).

Thus, understanding the personalities and the quality of the life of the patients and their caregivers plays a major role in planning and providing proper therapeutic interventions in order to enhance the quality of the life of the caregivers and patients.

Conclusion

Based on the results of the present research, we may conclude that hemodialysis will result in reduction of the life quality of caregivers and cause depression and other psychological problems in caregivers. It is therefore necessary to come up with care plans in order to increase the quality of life and the mental health of these patients. We may also conclude that paying attention to care needs in other caregivers to chronic patients may have positive results on mental health and life quality of them.

Limitations: some caregivers did not cooperate with us. We decided to give them the questionnaire in another time so that they could fill it better.

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