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Research Article

Relationship between Ineffective Attitudes and General Health in Patients with Chronic Renal Disease Undergoing Hemodialysis in a Hospital in Gorgan, Iran

Firoozeh Derakhshanpour[1], Zanireh Salimi[2], Farzaneh Shekhnejad[1], Najmeh Shahini[1], Mohammadzaman Kamkar[1]*

1.Golestan Research Center of Psychiatry, Golestan University of Medical Sciences, Gorgan, Iran
2.Psychiatry and Behavioral Sciences Research Center, Mashhad University of Medical Sciences, Mashhad, Iran
*Correspondence: Dr Mohammadzaman Kamkar, Golestan Research Center of Psychiatry (GRCP), Golestan University of Medical Sciences, Gorgan, Iran
Email:kamkar72@yahoo.com

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ABSTRACT

Background and objectives: Chronic kidney disease (CKD) is a major public health problem worldwide. Hemodialysis (HD) is the most common method of treating CKD. Dysfunctional attitudes play a major role in cognitive vulnerability and general health of HD patients. The aim of this study was to investigate relationship between dysfunctional attitudes and general health of patients with CKD undergoing HD.

Methods: This cross-sectional study was performed on CKD patients undergoing HD at a hospital in Gorgan, Iran during 2018. Overall, 126 patients (69 men and 57 women) aged 15-89 years old were enrolled via simple random sampling. Data were collected using the General Health Questionnaire-28 (GHQ-28), the Dysfunctional Attitude Scale-A (DAS-A) questionnaire and a demographic questionnaire. Collected data were analyzed by SPSS software (version 22) using the Kolmogorov-Smirnov test and Pearson correlation coefficient.

Results: The mean age of the participants was 54.9 ± 13.9 years old. Mean score of dysfunctional attitudes in HD patients was 26.32±9.9, which indicated dysfunctional attitudes. The mean score of GHQ-28 questionnaire was 26.77 ± 10.44, indicating low general health. There was a direct and statistically significant relationship between the score of dysfunctional attitudes and the GHQ-28 scores ($P<0.001$).

Conclusion: The results of this study showed a direct and significant relationship between dysfunctional attitudes and general health disorder in CKD patients undergoing HD.

Keywords: Dysfunctional attitudes; General health; Dialysis; Chronic kidney disease

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INTRODUCTION

Chronic kidney disease (CKD) is a global health problem defined as glomerular filtration rate (GFR) of below 60 ml/min per 1.73 m2 or presence of markers of kidney damage for at least three months (1, 2). Currently more than 400 million individuals have CKD in the world (3). The global prevalence of CKS was reported to be 13.4% (4). The prevalence of CKD was reported to increase by 19.6% in the past decade (5). Based on a meta-analysis, the prevalence of CKD in Iran was 15.14%, with a 1.7 times higher prevalence in females compared to males (6). A common treatment for CKD is hemodialysis, which has increased life expectancy in these patients but may interfere with their daily life activities (8-10). Reduced quality of life may result in mental disorders, including depression, malnutrition and increased mortality (11).

According to the World Health Organization (WHO), quality of life is the individual's perception of the status of life in terms of cultural and social values in line with personal goals, expectations, standards and desires (12). As HD patients might have different life expectations, they might have different perceptions about the quality of life (13). Patient attitudes is the core concept in HD patient management (14). Therefore, unsatisfactory quality of life might affect adherence to treatment in CKD patients (15, 16).

The prevalence of depression and anxiety is high among HD patients (17). Depression and anxiety can have negative effects on patient outcome by affecting patient follow up visits and behavior change (18). Therefore, it is important to assess dysfunctional attitudes in HD patients in predicting depressive disorders (19, 20). To the best of our knowledge, few studies have assessed the relationship between dysfunctional attitudes toward life and general health in HD patients. Therefore, the aim of this study was to assess dysfunctional attitudes of HD patients and their relationship with general health in a hospital in Gorgan, Iran.

MATERIALS AND METHODS

Subjects and design

This cross-sectional study was conducted on CKD patients undergoing HD in the Nephrology Department of the 5 Azar Hospital (Gorgan, Iran) in 2018. Sample size was calculated based on the findings of a similar study (21) considering the correlation coefficient of 0.26, type one error of 0.05 and type two error of 0.8. The sample size was calculated as 114 patients. Considering 10% drop-out, the sample size was determined as 126 patients. The study was approved by the Ethics Committee of the Golestan University of Medical Sciences (ethics code: IR.GOUMS.REC.1398.213). All patients (69 men and 57 women) signed a written informed consent before participating in the study. Recruitment of the subjects was performed based on simple random sampling.

The inclusion criteria were being diagnosed with CKD by a nephrologist, undergoing HD, age range of 15 to 89 years old, literacy and willingness to participate in the study. Exclusion criteria were positive history of severe psychotic diseases including psychosis, severe cognitive impairments as well as chronic diseases including physical disability, cardiovascular disease and severe skin disorders.

Data collection instruments included a demographic questionnaire, the 28-item General Health Questionnaire (GHQ-28) (22) and the 26-item Depression Anxiety and Stress (DASS-26) questionnaire (23). The questionnaires were filled for all subjects.

Study instruments

The demographic including patient age, gender, education level and place of residence and present and past medical

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history (duration of dialysis and dialysis frequency) were collected using the demographic questionnaire.

The GHQ-28 includes four subscales that assess the individual's psychological status during the past month. The subscales include physical symptoms, anxiety and insomnia, social performance disorders, and depression. Each subscale consists of seven questions that are scored based on a 4-point Likert scale. The total score can range from zero to 84 with higher scores indicating worst quality of life. The GHQ-28 subscale scores higher than six and the total score higher than 22 are considered abnormal. The questionnaire was validated on Iranian population with the Cronbach's alpha of 0.93 (24, 25).

The Dysfunctional Attitude Scale form A (DAS-A) questionnaire is a summarized form of the primary DAS-40 questionnaire. DAS-A items are scored based on a 7-point Likert scale (26). Total DASS-26 scores may range from 26 to a82 with higher scores indicating worst condition. The psychometric analysis of the DAS-A was assessed previously on Iranian population with Cronbach's alpha of 0.92(27).

Statistical analysis

Data analysis was performed using the Statistical Package for Social Sciences (SPSS) software (version 22). The Kolmogorov-Smirnov test was used to check the normality of data. The mean and standard deviation (SD) were used to describe continuous data. The Pearson correlation coefficient was used to assess the correlation between study variables. All statistical analyses were performed at statistical significance of 0.05.

RESULTS

The mean age of the patients was 54.9 ± 13.9 years. Table 1 shows the mean scores for dysfunctional attitude subscales of the study patients.

Table 1. The mean scores for dysfunctional attitude subscales among patients undergoing hemodialysis

Subscale	Score range	Mean ±SD
Perfectionism	4-28	4.40 ± 1.90
Need for others approval	5-35	6.01 ± 2.40
Need to satisfy others	4-28	2.80 ± 2.03
Vulnerability-Functional evaluation	13-91	13.07 ± 5.50
Total score	26-182	26.32 ± 9.90

Table 2 shows the mean score for GHQ-28 subscales in the study patients.

Table 2. Mean scores for GHQ-28 and its subscales among patients undergoing hemodialysis

Subscale	Score range	Mean ± SD	Severity
Somatic symptoms	0-21	7.16 ± 3.40	Mild
Anxiety and insomnia symptoms	0-21	7.02 ± 3.70	Mild
Social performance	0-21	9.07 ± 2.60	Mild
Depressive symptoms	0-21	3.52 ± 3.50	Minimum
Total score	0-84	26.77 ± 10.44	Mild

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The correlation between dysfunctional attitudes and general health based on the study categories is presented in table 3. There was a significant correlation between dysfunctional attitudes and GHQ-28 scores and dysfunctional attitudes (r=0.322, P<0.001). The correlation between dysfunctional attitudes and GHQ-28 was significant with male gender (r=0.30, P=0.011), residence in urban areas (r=0.30, P=0.004), illiteracy and primary school education level (r=0.59, P=0.001), 3-4 dialysis sessions per week (r=0.38, P<0.001), 1-3 years of dialysis (r=0.34, P=0.003), age of 31-34 years old (r=0.56, P=0.006) and age of 46-60 years old (r=0.39, P=0.004).

Table 3. Correlation between dysfunctional attitudes and general health among patients undergoing hemodialysis

Variable		Frequency (%)	Correlation	
			r	P-value
Gender	Male	69 (54.8%)	0.30	0.011*
	Female	57 (45.2%)	0.006	0.36
Place of residence	Rural	36 (28.6%)	0.166	0.34
	Urban	90 (71.4%)	0.30	0.004*
Education level	Illiterate or primary	30 (23.8%)	0.59	0.001*
	Primary graduate	52 (41.3%)	0.41	0.41
	Secondary	31 (24.6%)	0.30	0.10
	Diploma	6 (5.0%)	0.79	0.79
	Graduate and post-graduate	7 (5.3%)	0.59	0.29
Dialysis frequency	1-2 times a week	36 (28.6%)	0.55	0.10
	3-4 times week	90 (71.4%)	0.38	<0.001*
Dialysis duration (years)	0-1	10 (7.9%)	0.13	0.73
	1-3	72 (57.1%)	0.34	0.003*
	3-6	30 (23.8%)	0.23	0.23
	6-9	8 (6.3%)	0.52	0.18
	9-12	6 (4.8%)	0.54	0.27
Age (years)	15-30	6 (4.8%)	0.62	0.19
	31-45	23 (18.3%)	0.56	0.006*
	46-60	51 (40.5%)	0.39	0.004*
	61-75	38 (30.2%)	0.18	0.29
	76-90	8 (6.3%)	0.41	0.34

* Significant correlation

DISCUSSION

The findings of this study revealed that the mean score for dysfunctional attitudes was relatively low among HD patients, while all the DAS-A subscales were low for all patients. Similarly, the mean general health score of the subjects was less than half the achievable score. Our study findings indicated that dysfunctional attitudes and general health were significantly correlated in CKD patients undergoing HD. This finding indicates that the general health score increased with the increase in dysfunctional attitudes score, which was only significant among patients aged 31 to 45 and 46 to 60 years old.

In contrast to the findings of our study, a

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previous study showed that dysfunctional attitude scores were above medium in renal transplantation patients (28). The reason for this difference might be due to the difference between study participants. Unlike the patients in our study, the patients in the mentioned study were transplant patients who may have gone through more negative experiences and therefore reported higher attitudes compared to our study patients. The findings of our study also indicated that the mean general health score of the subjects was low, almost less than half the achievable score. Similarly, the mean score in all subscales of the GHQ-28 questionnaire were low among our subjects. Inconsistent with our findings, another study on HD and transplant patients showed that the mean general health score of the patients were higher than half of the maximum achievable score (29). This difference might be due to the difference in terms of subjects' education level as the participants in the mentioned study were mostly (82.2%) illiterate or had primary school education level, while only 23.8% of our subjects were illiterate or had primary school education. The findings of our study regarding the correlation between dysfunctional attitudes and general health was in line with the findings of previous studies on Iranian renal transplant patients (28, 30). We observed that the correlation between dysfunctional attitudes and general health was significant only among male patients, which is in agreement with findings of a study by Gutteling et al. (31). Furthermore, the correlation between dysfunctional attitudes and general health score was only significant among residents in urban areas, which is in line with the findings of some previous studies (32, 33). This could be due to the fact that rural patients generally have a better socioeconomic status and family support; therefore, they have less dysfunctional attitudes toward their health. In line with some previous studies, we observed that the correlation between dysfunctional attitudes and general health was significant in patients who were illiterate or had primary school education (34, 35). It is hypothesized that patients with a higher level of education may be more hopeful towards their treatment outcome and have a higher health level compared to patients with a lower education level. We also found a significant correlation between poor general health and dysfunctional attitudes among HD patients, which is in agreement with findings of previous studies (36, 37). We also observed a significant correlation between dysfunctional attitudes and poor general health scores among patients who were on HD 3 to 4 times a week. This finding was in line with the findings of a previous studies (38, 39). The high frequency of dialysis sessions might cause stress and increase dysfunctional attitudes in the patients. There was also a significant correlation between dysfunctional attitudes and poor general health in patients who were under HD for one to three years. This finding was in line with the findings of a previous study (38). Dialysis duration might affect psychological wellbeing of the patients and result in psycho-somatic disorders that may result in dysfunctional attitudes (40, 41). Furthermore, age range of 31-45 years and 46-60 years were significantly correlated with dysfunctional attitudes and poor general health, which is in line with findings of a previous study (32). It is possible that these patients may experience more frustration and hopelessness compared to patients in other age groups, as usually individuals are active and efficient.

One of the limitations of this study was lack of a definite diagnosis of depression, anxiety and stress as the DASS questionnaire was not designed to diagnose these mental conditions. Therefore, it is recommended to conduct further studies while considering presence of mental disorders and their relationship with dysfunctional attitudes among HD patients.

CONCLUSION

Our findings indicated a significant and

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positive correlation between dysfunctional attitudes and poor general health among CKD patients undergoing HD. Based on the results, there may an urgent need for behavioral interventions to improve attitudes of HD patients towards life and health.

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DECLARATIONS

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Not applicable.

Ethics approvals and consent to participate

The study was approved by the ethics committee of Golestan University of Medical Sciences, Gorgan, Iran (ethics code: IR.GOUMS.REC.1398.213). A written informed consent was obtained from all subjects prior to participation.

Conflict of interest

The author declares that there is no conflict of interest regarding publication of this article.

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