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The Prevalence of Anxiety among Patients Undergoing Hemodialysis at Khorramabad Hospitals

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ABSTRACT

Hemodialysis is the treatment of chronic renal failure that can increase patients' longevity, but the change in lifestyle and various treatments lead to numerous psychological problems such as anxiety in the patients. The purpose of this study was to determine the prevalence of anxiety in patients undergoing hemodialysis in Ashayer Shohada and Rahimi Martyr Hospitals in Khorramabad city. In this descriptive, analytical cross-sectional study, all eligible patients undergoing hemodialysis in Shohadaye Ashayer Hospital and Shahid Rahimi Hospital in Khorramabad (74) were studied. The data collecting tools include Spielbergers' anxiety questionnaire. Data analysis was carried out using chi-square tests, t-test, Pearson correlation and analysis of variance. The mean state anxiety score was 50.08(10.49) and the mean trait anxiety score was 49.24(11.52). About 44.5% of the patients had severe state anxiety and 40.5% had severe trait anxiety. The results of this study showed that women have higher levels of trait anxiety than men (p=0.014). The hemodialyzed patients in Khorramabad city were with high trait and state anxiety. Therefore, it is suggested that various methods of reducing anxiety in these patients should be used.

Keywords: Hemodialysis; Anxiety; Spielbergers

Introduction:

According to World Health Organization (WHO), chronic disease is a long-term, disabling disease with untreatable pathology, which is responsible for 60% of the world mortalities [1]. One of the chronic diseases, which is renal failure, is the progressive and irreversible degeneration of renal function, in which the body's ability to maintain the electrolyte and fluid disappears and leads to uremia and azotemia [2]. Hemodialysis, peritoneal dialysis and kidney transplant can be mentioned as treatments for renal failure [3]. Chronic renal failure is a life threatening disease, and these patients have to cope with these unique problems [4]. It is estimated that the number of patients undergoing hemodialysis will reach 3500000 by 2020 [5]. In Iran, the annual growth of patients undergoing hemodialysis has been announced as 15% [6]. These patients face many psychological problems such as depression and anxiety due to change in life style and type of treatment, which may lead to the patient's death in severe cases [7, 8]. Although hemodialysis as the main treatment of chronic renal failure increases the longevity of patients, it creates many psychological problems such as anxiety [9]. Hemodialysis influences various levels of patients' physical and psychological health,

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because these patients are dialyzed 3 times per week for about 4 hours at a time in the hospital, which affect their care planning, occupational and financial status, and self-confidence [10].

Duration of treatment and deficiency in support system activities of patients undergoing hemodialysis increases anxiety in them [11]. Anxiety disorders are accompanied by many consequences, and they are often chronic and resistant to treatment. Anxiety, like the pain, is a warning sign, and informs of an imminent danger, and it includes an unpleasant mental feeling, distress, tension, and ambiguous worry that is accompanied by shortness of breath, palpitation, sweating, headache, and restlessness. Anxiety is usually a reaction to danger, which internally, as a forbidden instinctive motivation, is close to be out of control, and threatens the person, and is along with the conflict in terms of origin [12]. According to studies, prevalence of anxiety among patients undergoing hemodialysis is 30 – 60% [13]. Moreover, prevalence of anxiety among patients undergoing hemodialysis in Iran is reported as between 20 – 60% [14]. In the study by Ahmadzadeh et al., frequency of anxiety in patients in terms of hemodialysis below one year, 1-2.5 years, and more than 2.5 years was 83.8, 70, and 83.3%, respectively [15].

Studies have shown degrees of depression, anxiety, and suicide beliefs in patients undergoing hemodialysis [16]. Considering significant increase in the number of patients undergoing hemodialysis in the country and presence of psychological diseases such as anxiety among these patients, as well as significance of epidemiological findings on improvement of psychiatric service delivery to these patients, it seems that more studies are needed regarding prevalence and level of anxiety, factors affecting incidence, and timely diagnosis of it. Therefore, the current research was conducted with the aim of investigating anxiety in patients undergoing hemodialysis in Shohadaye Ashayer Hospital and Shahid Rahimi Hospital, Khoramabad, and its relationship with some demographic factors.

Materials and Methods

This descriptive-analytical study was conducted as cross-sectional in hemodialysis unit of Khoramabad hospitals in 2014. Statistical population included all patients undergoing hemodialysis (qualified) in Shohadaye Ashayer Hospital and Shahid Rahimi Hospital (n = 74). Sample size was calculated based on the formula of mean estimation for the population. Probability of Type I error ($\alpha = 0.05$) and mean standard deviation (SD) obtained from previous studies using the same instrument used in this study (Spielberger Anxiety Test) was calculated to be approximately 18 [17, 18]. The accuracy value of study (d) was considered as 4.14 due to relatively large dispersion in the declared values of standard deviation and SD was considered as equal to 0.23. Finally, sample size was calculated as 72. Considering probability of sample attrition, 74 qualified samples entered the research. Participants were selected using convenience sampling method (census) based on the inclusion criteria of the study. Inclusion criteria included patient's tendency to participate in the research, minimum of 3 months after onset of dialysis, and lack of consumption of anti-anxiety drugs. Individuals with psychological history and those with familial history of these diseases, individuals with history of alcohol consumption or drug abuse were excluded.

The ethics committee of Lorestan University of Medical Sciences approved this study and it was started after obtaining permission from the Lorestan University of Medical Sciences and providing introduction letter to the head of Shohadaye Ashayer Hospital and Shahid Rahimi Hospital. Then research goals were explained to all participants, and following emphasis on their rights, written consent form for participation in the research was obtain from the patients. Data collection tool included a questionnaire for demographic data and Spielberger Anxiety Inventory.

Table 1: demographic characteristics and relationship with anxiety score among patients undergoing hemodialysis

Variable		Frequency	*p value*	Variable		Frequency	*p value*
Age(year)	18-39	13(17.6%)	0.13 a	**Duration of dialysis (years)**	1≥	9(12.2%)	0.28 a
	40-59	48(64.9%)	0.44 b		1-5	42(55.4%)	0.31 d
	>60	13(17.6%)			5≤	24(32.4%)	
Sex	Female	31(58.1%)	0.07 b	**Employment status**	Employed	12(16.2%)	0.12 c
	Male	43(41.9%)	0.09 b		Unemployed	62(83.3%)	0.45 e

[a] Pearson correlation test [b] Independent t test [c] ANOVA [d] Chi- square test

The questionnaire designed for measurement of demographic characteristics included age, gender, education, job, and duration of hemodialysis, which was completed by the patients at the beginning of the study. The second tool was Spielberger Anxiety Inventory including 40 items, 20 items measure State anxiety, and 20 items indicate Trait anxiety. Each item is scored based on Likert scale ranging from very low to high, and the score between one to four is assigned according to the provided answer. Lowest anxiety score is 20 and highest anxiety score is 80. Inverse score was considered for items 1, 2, 5, 10, 11, 15, 16, 19, 20, 21, 23, 26, 27, 30, 33, 34, 36, and 39. That is, very low or never options were scored as 4, and somehow was scored as 3, average was scored as 2, and high option was scored as 1. Following the summation of obtained scores, research units were classified into four groups including no or low anxiety (20-30), mild anxiety (31-42), moderate anxiety (43-53), and severe anxiety (54 and more) [19]. Spielberger Anxiety Inventory has been translated to various languages so far, and Mahram reported reliability in Trait and State anxiety parts as 90 and 91%, respectively, based on Cronbach's alpha in Iranian population [20].

Within the conducted studies for validity, mean of Trait and State anxiety and total anxiety was calculated; results of calculations were significant with of 95 and 99% confidence interval [21]. In order to analyze data, descriptive statistics including drawing tables were used. The analytical statistics of Kolmogorov-Smirnov tests, consistency tests of variances, Pearson correlation coefficient, independent T-test, and Chi-square were used.

Results

Results showed that 58% of samples were male and 42% were female, 2% were single, and 66% were married, and the remaining were widow and divorced. The mean age was 49.7 and the standard deviation was 10.8 years. The mean duration of hemodialysis was 3.48 years and the standard deviation was 2.22 (Table 1). According to independent t-test, there is a significant relationship between Trait anxiety and gender. That is, women showed higher level of Trait anxiety ($p = 0.014$). However, Pearson correlation test, one-way ANOVA and Chi-square test did not show a significant relationship between State and Trait anxiety and total anxiety score with age, hemodialysis duration, marital status, occupation and education (Table 2-3).

Discussion

Various studies have shown that all patients undergoing hemodialysis experience some degrees of anxiety.

Table 2: Frequency and standard deviation of anxiety among patients undergoing hemodialysis

Variable		Frequency	Min-Max	Mean(SD)
State anxiety	No anxiety to the least	1(1.4%)		
	Mild anxiety	17(23%)	28-65	50.08(10.49)
	Moderate anxiety	33(31.1%)		
	Severe anxiety	23(44.5%)		
Trait anxiety	No anxiety to the least	5(6.8%)		
	Mild anxiety	14(18.9%)	30-63	49.24(11.52)
	Moderate anxiety	25(33.8%)		
	Severe anxiety	30(40.5%)		
Total anxiety			58-125	99.32(21.77)

Table 3: Independent T-test results between State and Trait anxiety scores for both sexes

Anxiety		Mean(SD)	*t*	*p value*
State	Male	48.23(10.79)	1.85	0.074
	Female	52.65(9.64)		
Trait	Female	46.46(11.00)	2.53	0.014
	Male	53.09(11.27)		

In the current study, half of the patients experienced Trait and State anxiety. In the study by Ahmadzadeh et al., frequency of anxiety in patients in terms of hemodialysis below one year, 1-2.5 years, and more than 2.5 years was 83.8, 70, and 83.3%, respectively [15]. Moradi et al. (2015) showed that most patients undergoing hemodialysis experience average to high levels of anxiety [22]. Moreover, Barati et al. (2014) indicated that over half of patients experienced severe anxiety, which is not consistent with the current study [23]. In line with findings in the current study, Kanani et al. (2012) found that State anxiety was 46.9 in case group and 48.3 in control group before intervention [22].

Cukor et al. (2008) showed that patients undergoing hemodialysis with short and long-term treatment periods are vulnerable to depression and anxiety risk, and almost 20% of them experience anxiety. Theofilou (2011) indicated that anxiety level in patients undergoing hemodialysis is higher than patients with kidney transplant [17]. Mollahadi et al. (2009) showed that 63.9% of patients undergoing hemodialysis experience anxiety [25]. Rahimi et al. (2006) found that patients undergoing hemodialysis tolerate different levels of anxiety [18]. These patients face many psychological problems including anxiety due to change in life style and type of treatment. Duration of treatment and deficiency in support system activities of patients undergoing hemodialysis increases anxiety in

them [11]. Additionally, findings of this research revealed that women experienced higher levels of Trait anxiety compared to men, which is consistent with finding by Ahmadzadeh [15]. According to some findings, female gender is one of the risk factors for mood disorders. In addition, women under hemodialysis treatment are more probable to experience more psychological disorders such as anxiety compared to men because of lack of enjoyment of emotional and financial supports [27].

Small sample size is one of the limitations in the current research, and it is recommended that this research should be conducted in the future with larger sample size, and various methods of anxiety reduction should be used for these patients. Since timely diagnosis and appropriate treatment cause enhancement of quality of life and increased satisfaction in patients, thus finding useful solutions such as therapeutic and non-therapeutic methods (educational courses) as well as simultaneous delivery of psychiatric services in hemodialysis centres are recommended to reduce anxiety in patients.

Conclusion

Findings of current research showed that Trait and State anxiety level is high in patients undergoing hemodialysis. Furthermore, Trait anxiety is more prevalent in women, and this reason should be identified, and be solved. Overall, considering the fact that patients with chronic renal failure are treated by hemodialysis for long term, and anxiety is a common finding among these patients, quick and accurate diagnosis of psychological problems and their treatment seems necessary in these patients. Thus, it is required that anxiety reduction methods such as sport, music, consulting, stress management, emotional intelligence training, etc. be used for these patients.

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