Depression among hemodialysis patients: a cross-sectional study in southeast of Iran

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ABSTRACT

Background and aims: Mental disorders may negatively affect on the quality of life in hemodialysis patients and their response to treatment. The aim of present study was to examine the prevalence of depression and related risk factors in hemodialysis patients.
Methods: In this cross-sectional study, during June 2013 to September 2013, 217 patients with hemodialysis whom were admitted to Kerman hemodialysis center were examined. The depression level of patients was assessed using Iranian version of Beck Depression Inventory.
Results: The mean score of depression was 24.2±12.6 (range: from 2-59). Totally, 29%, 30% and 27.4% were reported as suffering from mild, moderate and severe level of depression, respectively. The results of the present study also showed that diabetic patients and patients with hypertension were significantly at a higher risk of depression.
Conclusion: Results of the present study indicates that depression is highly prevalent in hemodialysis patients. It is important that all patients with maintenance hemodialysis be frequently screened for signs and symptoms of psychiatric disorders such as depression.

Keywords: Mental disorder, Hemodialysis maintenance, End-Stage Renal Disease, Prevalence, Iran.

INTRODUCTION

End-Stage Renal Disease (ESRD) is a costly public health problem characterized by permanent kidney failure.[1,2] ESRD is mainly caused by diabetes, hypertension, obstruction of the urinary tract, hereditary lesions, vascular disorders, infections, side effects of polypharmacy or specific medications and severe kidney injury.[1,3] For ESRD patients, one of choices to survive is haemodialysis. [1,4,5] The main purposes of dialysis include removal of waste products of protein metabolism from poisons or

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toxins and excess water from blood, establishment or maintenance of the proper level of electrolytes, acid–based balance and instillation of medications (e.g., antibiotics), electrolytes, or other substances.[1,3]

As many other chronic diseases, ESRD may cause many psychological problems for affected patients. [4,6] In a study, Momeni et al. examined the prevalence of mood disorders in 160 patients undergoing hemodialysis and kidney transplantation using Hamilton's checklist in Shahrekord, Iran. [6] They found that approximately 79% of hemodialysis patients had some levels of depression. In another study; Saeed et al. examined the prevalence of depression in hemodialysis patients and their relatives. [7] They used Beck's Depression Inventory (BDI-II) and found the rate of depression equal to 75% and 33.4% in respectively patients and their relatives, respectively. They also reported that some demographic factors such as marital status, income and occupation could affect on the level of depression in hemodialysis patients. In an Iranian study, Ahmadzadeh and Mehdi reported the prevalence of depression, anxiety and psychosis in hemodialysis patients 50%, 12.2% and 0%, respectively. [8] Due to high prevalence of depression and anxiety, they recommended further studies in this area.

Depression is the most common mood disorder in hemodialysis patients.[4] Depression may negatively affect on the quality of life of hemodialysis patients and might increase their mortality rate.[4,6,9] However, depression is usually under-recognized and left untreated in dialysis patients.[4,8] For treatment, knowing the prevalence and risk factors of depression is necessary; however, there is a little research in this regard in Iran. So, the present study was conducted to examine the prevalence of depression and related risk factors in some Iranian hemodialysis patients.

METHODS

In this cross-sectional study which conducted from June 2013 to September 2013 in Kerman, southeast of Iran, a convenience sample of 217 hemodialysis patients whom were admitted to Kerman hemodialysis center were examined. The written permission was obtained from Deputy of Research and the Ethics Committee of the Kerman University of Medical Sciences. Inclusion criteria were: being on hemodialysis, the age of over 18 years old and having the ability to answer the provided questionnaire. Questionnaires were handed out by the researchers, alongside a letter with provided information about the aims of the study. Participants replied individually and returned the questionnaire to the researcher. Written consent letters were filled out by all respondents. The researchers ensured the participants that all data would remain anonymous and be kept confidential. Various instruments were used for data collection: 1. checklist of demographic data (including age, sex, marital status, job, level of education, years of hemodialysis and history of medical disorders) and 2. Iranian version of the Beck Depression Inventory (BDI).[10] The BDI is a 21-question multiple-choice self-report inventory. Each response is scored on a scale value of 0 to 3. Higher total scores indicate more severe depressive symptoms. A total BDI score of 0–9 indicates normal, 10–18 indicates mild depression, 19–29 indicates moderate depression, and 30–63 indicates severe depression.[11]

Continuous variables were presented by mean and standard deviation. Spearman correlation coefficient, independent t-test and ANOVA were applied for correlation and comparison. SPSS software (version 18.0) was used for data analysis and p-value less than 0.05 was considered as statistically significant.

RESULTS

From 217 patients, 124 (57.1%) were men. The mean age of the patients was 53.6 (range: 18-85) years old. The mean duration of hemodialysis was 3.8 (range: 1-22) year. From 217 patients, 75.1% and 50% had hypertension and diabetes, respectively. The mean score of depression was 24.2±12.6 (range: 2-59). In total, 29%, 30% and 27.4% were reported as having mild, moderate and severe level of depression, respectively.

Although mean depression score was higher in female patients than in male patients (25.3±12.3 vs. 23.2±12.9), the results of independent t-test did not show a statistically significant difference (P=0.220) (Table 1). Results of the present study also showed that mean depression score was higher in single patients compared to married patients (25.3±12.1 vs. 24.1±12.9), which the difference was not statistically significant (P=0.640) (Table 1). The mean depression score in patients with hypertension was higher compared to those without hypertension (25.4±12.9 vs. 20.1±11.6). By independent t-test, this difference was statistically significant (p=0.008). Results of this test also showed that mean depression score was significantly higher in diabetes patients compared to those without diabetes (26.6±13.5 vs 21.8±11.3; P=0.007) (Table 1).

Table 1: Number and percentage of different level of depression among the hemodialysis patients

Variables	Mild depression	Moderate depression	Severe depression
Men	24 (25.8%)	30 (32.2%)	32 (34.4%)
Women	33 (26.6%)	38 (30.6%)	35 (28.2%)
Married	56(31.1%)	67 (37.2%)	54 (30%)
Single	13 (35.1%)	11 (29.7%)	12 (32.4%)
With hypertension	42 (25.7%)	51 (31.2%)	51 (31.2%)
Without hypertension	17 (31.4%)	17 (31.4%)	12 (22.2%)
Diabetics	22 (20.5%)	37 (34.5%)	42 (39.2%)
Non diabetics	35 (31.8%)	35 (31.8%)	26 (23.6%)

Results of one-way ANOVA showed that mean depression score was significantly lower in patients with higher level of education compared to those with lower level of education, with no statistically significant difference (P= 0.249). Results of Spearman correlation test did not show a significant correlation between mean depression score and patients' age (P= 0.832). Results of this test also did not show a significant correlation between mean depression score and years of hemodialysis (P= 0.671).

DISCUSSION

The aim of the present study was to determine the prevalence of depression and its related risk factors in hemodialysis patients. According to the results of this study, 86.4% of hemodialysis patients reported some levels of depression. Findings also showed that diabetic and hypertension patients were at a higher risk of depression.

When a patient needs maintenance hemodialysis therapy, level of physical, mental, social and financial stress may increase significantly, leading to an increased chance of depression development in this group of patients. On the other hand, if the patient is the sole barer of the family, the fear of losing job, worsened financial difficulties, dependency on other family members for treatment and daily domestic expenses can exacerbate his/her depression.[12]

Previous studies on prevalence of depression in dialysis patients showed

various results depending on different measurement methods and instruments.[13-15] In a study in Shahrekord, Iran, Momeni et al. reported that 79% of hemdialysis patients had depression, lower than finding of present study.[6] The observed difference could be related to the difference in sample size of two studies (217 vs. 80) or different types of instruments used in two studies. The questionnaire used by Momeni et al. was Hamilton's checklist while we used BDI questionnaire for measuring the depression. In another study, Tanvir et al. examined the prevalence of anxiety and depression in hemodialysis patients.[12] Results of Tanvir et al. study showed that 52% and 42% of hemodialysis patients had some levels of depression and anxiety, respectively, which is lower than our findings.[12] This difference could be related to the difference in socioeconomic and demographics profile between Iranian patients and the patients in Tanvir et al. study.

In another study, Joshva et al. examined the prevalence of depression, fatigue and sleep problems in hemodialysis patients in India.[16] They used BDI and found out the prevalence of depression equal to 73% (59.7% reported mild and moderate level and 12.6% reported severe level) that was lower than the finding of the present study. They also showed that fatigue and sleep were prevalent in haemodialysis patients.[16] In addition, the rate of severe depression in our study was 27.4%, higher than the rate of severe depression in Indian patients. In another study, Pramiladevir et al. examined hemodialysis patients and their primary caregivers' level of depression.[4] They reported that 72% of their patients had some levels of depression which was lower than the findings of present study. They also

reported that ESRD, as a chronic condition, may affect on not only patients but also caregivers negatively.[4] They found the rate of depression about 46% in caregivers.[4]

In a large scale study in 2004, Lopez et al. examined the prevalence of depressive symptoms, physician-diagnosed depression and depression treatment by antidepressants in hemodialysis patients in 12 countries: Australia, Belgium, Canada, France, Germany, Italy, Japan, New Zealand, Spain, Sweden, United Kingdom and United States.[17] Inconsistent with our findings, Lopez et al. study showed that depression was highly prevalent in hemodialysis patients. They also reported that depression was underdiagnosed and undertreated in this group of patients.[17]

CONCLUSION

Results from the present study indicated that depression is highly prevalent in hemodialysis patients. This common mental disorder may negatively affect on the quality of life in patients and their response to treatment. It is important that all the patients on maintenance hemodialysis be frequently screened for signs and symptoms of psychiatric disorders such as depression. In addition, further research is recommended to investigate the relationship between depression and sleep quality, level of anxiety, social support and quality of life in hemodialysis patients.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interests.

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