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# ORIGINAL: Investigation of Suicide Risk in Hemodialysis Patients in Mazandaran Province (Northern of Iran) in 2019

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### ABSTRACT

**Introduction:** Hemodialysis as a common and vital method of treatment in kidney patients, despite maintaining the survival of patients can be a source of stress for them.

**Material and Methods:** In this descriptive-correlational study, which was conducted in 2019, 97 patients with chronic kidney disease under hemodialysis in the dialysis center of Imam Reza Amol Hospital entered the study with census method. Data were collected using demographic information form and The Nurses' Global Assessment of Suicide Risk (NGASR) instrument.

**Results:** The mean age of the patients in the present study was 53.2 years (SD = 13.18, CI95%: 50.54-55.85). According to the findings of this study, the mean risk of suicide in hemodialysis patients was 19.32.

**Conclusion:** According to the results of this study, the risk of suicide in hemodialysis patients was very high.

## Introduction

Hemodialysis as a common and vital method of treatment in kidney patients, despite maintaining the survival of patients can be a source of stress for them (1). Reports indicate that 55% of patients with chronic kidney disease have experienced the most difficult emotional experience in their lives (2). The results of the study showed that dialysis patients face many problems and limitations, such as job loss, financial problems, depression and poor quality of life (3). Also, factors such as lifestyle disorders, job and social status disorders in patients with chronic diseases such as patients with chronic renal failure can lead to early death and suicide in order to get rid of problems and limitations (4). A study of hemodialysis patients with chronic kidney

failure reported that of the 200 patients in the study, 70 had depressive symptoms and 43 had suicidal thoughts last month (5). In another study, the prevalence of suicidal ideation in patients referred to the dialysis ward was reported to be 10% (6). Suicidal thoughts are defined as a range of vague thoughts about ending one's life to the point of a complete suicide plan (7). Studies show that suicidal ideation can be a significant risk factor for suicide attempts and subsequent suicidal ideation (8). Suicidal ideation in people in a society is also one of the most important indicators of mental health in that society (9). Therefore, the importance of suicide risk and related thoughts is undeniable because suicidal thoughts can be considered a scale for assessing suicide intent (10). Suicide is one of the most important health problems in contemporary societies, and related behaviors are a complex phenomenon influenced by several biological, social, and psychological factors (11). Suicide causes people, families, communities and countries to face a lot of economic, social and psychological pressures (12). Therefore, it is important to assess the rate of suicidal ideation and risk factors that increase the risk of suicide because it not only saves a person's life but also prevents the unpleasant consequences that threaten the individual's family and society (13, 14).

A review of the available database showed that despite the importance of suicide risk in patients with chronic diseases such as chronic kidney disease under hemodialysis, it seems that only one study on the prevalence of suicidal ideation and its effective factors in hemodialysis patients in Iran was conducted in 2011 and no study has been conducted to investigate the risk of suicide in hemodialysis patients in Iran, so the present study was conducted to determine the risk of suicide in hemodialysis patients.

## Methods

In this descriptive-correlational study, which was conducted in 2019, 97 patients with chronic kidney disease under hemodialysis in the dialysis center of Imam Reza Amol Hospital entered the study with census method. The inclusion criteria in this study were: entry criteria based on the patient's eligibility for surgery, the ability to read Persian language. Alcohol and drug addiction, mental, emotional and verbal problems, decreased level of consciousness, gastrointestinal diseases such as peptic ulcer and recurrent gastric-intestinal contents and congestive heart failure were some of the criteria for elimination of the sample. The center has 150 covered patients, of which 35 patients were excluded from the study due to drug addiction, congestive heart failure (15 patients). The response rate of the study was 84.34%.

### Instrument
Data were collected using demographic information form (including age, gender, occupation, marital status, economic level and education), and The Nurses' Global Assessment of Suicide Risk (NGASR) instrument.

The NGASR was developed by Cutcliffe in 2004 and is an assessment tool developed for nurses, used to identify psychosocial stressors that are reported to be strongly linked with suicide risk (15). This scale has 15 items that total score is 25. Scores of 5 or less represent a low level of risk, 6–8 represent intermediate risk, 9–11 represent high risk and 12 or more represent very high risk. Validity and reliability of the scale was tested and approved in some previous studies (16, 17). At first the permission of using this scale was obtained from the developer of the scale. In present study this scale was translated to Persian language. Face validity was assessed by 15 patients that they were read and approved the translated version of this scale. Also the content validity was assessed and approved using 15 experts in nursing and psychiatric sciences. The reliability was calculated with Cronbach's alpha (α=0.807).

### Statistical analysis
The statistical package for social sciences, version 23.0 (SPSS Inc., Chicago, IL, USA) were utilized for data analysis. First

descriptive statistics for continuous variables were shown as means with standard deviation (SD) and n (%) for the categorical variables. The ANOVA statistical test was used to compare the suicide risk score between marital status, education level, economic status and job. Also an independent T-test was used to compare the suicide risk score between the sex groups and depression. The relationship between age and the dependent variable was examined by Pearson test. Statistical significance was set at $P < 0.05$.

### Ethical consideration

This study was approved by the ethics committee of Mazandaran University of Medical Sciences (IR.MAZUMS.REC.1398. 612). All the criteria of the Helsinki Treaty were used in this study.

## Results

The mean age of the patients in the present study was 53.2 years (SD = 13.18, CI95%: 50.54-55.85). The demographic characteristics of the patients are as described in *Table 1*. It should also be noted that on average, the patients participating in this study had a history of hemodialysis for 51 months and the history of depression in patients was 23 months.

According to the findings of this study, the mean risk of suicide in hemodialysis patients was 19.32 (SD = 5.4, CI95%: 18.22-20.43), that 87 (89.69%), 6 (2.2%), 3 (3.1%), 1 (1%) patients had a very high, high, medium and low suicide risk respectively. According to the analytical results, none of the demographic variables were significantly associated with patient suicide risk.

## Discussion

The aim of this study was to determine the risk of suicide in hemodialysis patients. In this study, the average risk of suicide among patients referred to the hemodialysis department of Imam Reza Amol Hospital was reported to be 19.32, that was similar to study of Chen and colleagues that reported the suicide risk in 21.5% of hemodialysis of patients (5). Loureiro et al. (18) also reported a suicide risk of 17.8% in their study, which was close to the present study. However, a study by Martiny et al. (2) reported a suicide rate of 11.6% in patients, and Zahedian et al. In their study reported a 6.7% suicide rate, which is lower compared to this study. Despite the relatively low risk of suicide in these patients, based on the available research, due to the importance of these thoughts, it is necessary to conduct more studies in this field.

The data obtained in the present study indicate that there is no significant relationship between demographic information and suicide risk in

**Table 1. Demographic profile of hemodialysis patients in the study**

| Characteristic | N (%) | Characteristic | N (%) |
|---|---|---|---|
| **Gender** | | **Work** | |
| Male | 44 (45.4) | Self-employment | 35 (36.09) |
| Female | 53 (54.6) | Employee | 4 (4.1) |
| **Economic Situation** | | Housewife | 46 (47.41) |
| Weak | 21 (21.6) | Unemployed | 6 (6.2) |
| Average | 62 (63.9) | Retired | 6 (6.2) |
| Good | 14 (14.4) | **Depression** | |
| **Education** | | Yes | 20 (20.61) |
| Up to diploma | 83 (85.6) | No | 77 (79.39) |
| BSc and MCs | 14 (14.4) | | |
| **Material status** | | | |
| Single | 11 (11.3) | | |
| Married | 83 (85.6) | | |
| Divorced | 3 (3.1) | | |

hemodialysis patients. In the study of Espahbodi et al. (6), there was no significant relationship between marriage and the severity of suicidal thoughts. However, in the same study, there was a significant relationship between suicidal ideation with age, gender, occupation and level of education. In the study of Zahedian et al. (19), there was a significant relationship between age and severity of suicidal thoughts. According to the contradictory results of existing studies, further research with large sample size and more detailed study is needed to identify different factors separately.

## Limitations and suggestions

One of the most important limitations of the research was the small sample size due to the lack of access to a wider community, which could limit the generalizability of the results of this study; Therefore, it is suggested that studies with a larger sample size be conducted in the future. Another notable limitation is the completion of tools by nurses, which may sometimes involve bias and human error, which was not controllable.

## Implications of the results

The results of the present study considered the risk of suicide of hemodialysis patients to be very high, which, despite the mentioned limitations, it is necessary to take a more sensitive look at it. Therefore, it is necessary to evaluate the risk of suicide in these patients continuously and in all parts of the country. Accurate information can help health managers make better decisions about improving the mental health of these patients. It is also a good idea to take a more sensitive approach to this issue in medical health units.

## Conclusion

According to the results of this study, the risk of suicide in hemodialysis patients was very high. Also, there was no significant relationship between patients' demographic characteristics and suicide risk.

## Conflicts of interest

The authors declare that they have no conflict of interest.

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