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Analysis of the Current Situation of Stigma Among Elderly Hemodialysis Patients and its Influencing Factors

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Abstract: *Objective:* To understand the current situation of stigma among elderly hemodialysis patients and to analyze its influencing factors. *Methods:* Convenience sampling was used to select 242 elderly patients undergoing hemodialysis in one of the two tertiary hospitals in Mianyang City. The survey was carried out from December 2022 to March 2023, with the Basic Information Questionnaire, the Social Influence Scale, and the Collaborative Social Support Scale. All influencing factors were analyzed by correlation analysis, univariate analysis, and multiple linear regression. *Results:* The average stigma score among elderly hemodialysis patients was 72.94 ± 9.58, and the influencing factors of stigma among elderly hemodialysis patients were determined to be social support and economic status ($P < 0.05$). *Conclusion:* The occurrence of stigma among elderly hemodialysis patients was at a moderate to high level, and the influencing factors were mainly economic status and social support. To reduce the occurrence of stigma in elderly hemodialysis patients, appropriate economic support from families and social support from medical personnel are needed.

Keywords: Stigma; Hemodialysis; Influencing factors

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1. Introduction

End-stage renal disease (ESRD) is a stage of chronic kidney disease (CKD) that causes total or near-total loss of renal function in patients [1]. The global prevalence of CKD is estimated to be 13.4% (11.7–15.1%), and the number of ERSD patients requiring renal replacement therapy is estimated to be between 49,020,000 and 70,830,000 [2]. ERSD patients mainly rely on hemodialysis to sustain life. However, prolonged hemodialysis brings about economic burden and psychological pressure to patients. As China is an aging society with a heavy burden of old-age pensions, this undoubtedly adds to the economic burden of elderly patients with ESRD. Hemodialysis causes nausea, vomiting, and skin itching, which negatively affects the patient's quality of life [3]. Stigma is defined as a negative emotion of being labeled, discriminated against, not being accepted by others, feeling lonely, unappreciated, and helpless after an individual becomes ill [4,5]. The understanding of factors

causing stigma in elderly hemodialysis patients can help clinically improve the degree of cooperation in the treatment of elderly hemodialysis patients and reduce the occurrence of stigma.

2. Objects and methods

2.1. Objects

From December 2022 to March 2023, a convenience sampling method was used to investigate hemodialysis patients aged 60 years or older in one of the two tertiary hospitals in Mianyang City, Sichuan Province. Inclusion criteria: (1) Age > 60 years old; (2) period of receiving hemodialysis treatment ≥ 3 months; (3) conscious and able to communicate normally; (4) consented. Exclusion criteria: (1) Patients with other diseases such as severe cardiovascular and cerebrovascular diseases, tumors in unstable stage; (2) ambiguous language, lack of comprehension, and mental disorders.

2.2 Methods

2.2.1 Research tools

2.2.1.1 General information questionnaire

The general information survey contained information on sexual age, gender, marital status, education level, place of residence, residential status, economic status, and so on.

2.2.1.2 Social impact scale (SIS)

The SIS scale was compiled by File and Wright [6] in 2000 and was translated and Sinicized by Pan et al. [7] in 2007. It is divided into four dimensions: social exclusion, social isolation, economic discrimination, and stigma. The scale scores range from 24–96, with higher scores indicating the degree of impact of social influence on the patient's stigma. The Cronbach's alpha coefficients were 0.850–0.90, and the correlation coefficients of each dimension were 0.280–0.660, which showed good reliability and validity.

2.2.2 Methods of investigation

The contents and purpose of this study were explained to the target hospital, and the hospital's consent was sought to contact the patients. The study issued questionnaires to patients and the researcher informed patients and their families of the purpose, content, and significance of this study. The relevant precautions were explained to the patients and those willing to participate were required to sign a consent form. During the process of the survey, the patient's privacy was protected and the information collected was not disseminated to the outside world. The questionnaires were distributed using the questionnaire star, and for patients who were illiterate and could not fill in the questionnaires alone, the questionnaire entries and the relevant options were read out to them by researchers or their families who filled in the questionnaires on the patient's behalf. A total of 245 questionnaires were recovered in this study, with 242 valid questionnaires and a valid recovery rate of 98.9%.

2.2.3 Statistical methods

The questionnaire data were exported to an Excel table and then imported into the SPSS 26.0 software for statistical analysis. Measurement data were used for statistical description and count data were described statistically by frequency and %. The scores of social support degree and stigma were correlated and analyzed by *t*-test, one-way ANOVA, multiple linear regression analysis, and other statistical methods. Results were considered statistically significant at $P < 0.05$.

3. Results

3.1. General information

A total of 242 patients were included from 61–83 years old, with an average age of 67.21 ± 3.67 years. The specific information is shown in **Table 1**.

Table 1. General information survey of elderly hemodialysis patients (n = 242)

	Category	Number	Proportion
Gender	Male	141	58.3 %
	Female	101	41.7 %
Age	61–65	96	39.7 %
	66–70	104	43.0 %
	71 >	42	17.3 %
Marital status	Married	146	60.3 %
	Unmarried/divorced/widowed	96	39.7 %
Level of education	Junior high school and below	132	54.5 %
	High school and above	110	45.5 %
Place of residence	Countryside	134	55.4 %
	City	108	44.6 %
Residence status	Living alone	70	28.9 %
	Not living alone	172	71.1 %
Economic status	No self-perceived financial hardship	75	31.0 %
	Self-perceived financial hardship	167	69.0 %
Appreciation of social support	Low support status	122	50.4 %
	Medium support status	99	40.9 %
	High support status	21	8.7 %

3.2. Morbid stigma score of elderly hemodialysis patients

The stigma score ranged from 49–95 points, and the total stigma score was 72.94 ± 9.58. The specific information is shown in **Table 2**.

Table 2. Sickness and stigma scores of elderly hemodialysis patients (n = 242)

Project	Scoring range (points)	Score (mean ± standard deviation, points)
Social exclusion	18–35	27.11 ± 3.98
Economic discrimination	6–12	9.02 ± 1.65
Social isolation	15–28	21.22 ± 2.92
Stigma	10–20	15.58 ± 1.86
Total SIS score	49–95	72.94 ± 9.58

3.3. Analysis of factors influencing the stigma of elderly hemodialysis patients

By taking the general information of elderly hemodialysis patients and comprehending the social support score as the independent variable and stigma score as the dependent variable, we determined that economic status and the degree of social support were the main factors affecting the stigma of elderly patients through univariate analysis and multiple linear regression analysis. The specific information is shown in **Table 3** and **Table 4**.

Table 3. Single-factor analysis of stigma in elderly hemodialysis patients (mean ± standard deviation, score)

Category		SIS	*t*/F	*P*
Gender	Male	71.01 ± 9.58	2.066	0.040
	Female	71.45 ± 9.41		
Age	61–65	72.75 ± 9.08	1.067	0.346
	66–70	72.34 ± 9.50		
	71 >	74.86 ± 10.79		
Marital status	Married	73.14 ± 8.82	0.383	0.702
	Unmarried/divorced/widowed	72.64 ± 10.67		
Educational level	Junior high school and below	76.26 ± 8.16	6.276	< 0.001
	High school and above	68.95 ± 9.67		
Place of residence	Countryside	75.15 ± 9.06	4.110	< 0.001
	City	70.19 ± 9.53		
Residence status	Living alone	74.51 ± 9.86	1.639	0.013
	Not living alone	72.30 ± 9.41		
Economic status	No self-perceived financial hardship	60.65 ± 4.85	-26.26	< 0.001
	Self-perceived financial hardship	78.46 ± 4.89		
Appreciation of social support	Low support status	78.82 ± 5.28	91.674	< 0.001
	Medium support state	68.34 ± 9.20		
	High support status	60.43 ± 6.50		

Table 4. Multiple regression analysis of stigma in elderly hemodialysis patients

Project	B	SE	β	*t*	*P*
Gender	-0.613	0.592	-0.032	-1.034	0.302
Age	0.603	0.401	0.045	1.502	0.134
Marital status	-0.799	0.744	-0.041	-1.073	0.284
Educational level	0.081	0.704	0.004	0.115	0.909
Place of residence	0.351	0.662	0.018	0.530	0.597
Residence status	-0.576	0.787	-0.027	-0.731	0.465
Economic status	12.018	1.003	0.581	11.978	< 0.001
Total PSSS score	-0.274	0.038	-0.359	-7.187	< 0.001
Constant terms	64.921	3.914	--	16.588	< 0.001

Note: $R^2 = 0.793$, Adjusted $R^2 = 0.786$, $F = 111.660$, $P < 0.001$; PSSS: Perceived stress scale

4. Discussion

4.1. Stigma among elderly hemodialysis patients is moderately high

The results of this study showed that the average stigma score of elderly hemodialysis patients was 72.94 ± 9.58, which was higher than the result of Chen [8], at 65.98 ± 10.75. This may be because the age of the target group was different in both studies. The reason for the occurrence of stigma in elderly hemodialysis patients may be that the process of hemodialysis causes the patients to feel nausea, and vomiting, causing the appearance of symptoms such as infection, anemia, debilitation, and malnutrition during the dialysis process.

4.2. Analysis of factors affecting the stigma of elderly hemodialysis patients

4.2.1. Economic status

This study showed that the higher the patient's economic status, the lower their stigma. Hemodialysis is the

life-sustaining dependence of end-stage renal disease, which requires a long time of treatment, and the high cost of hemodialysis requires strong economic support. Elderly people over 60 years old are in the state of retirement and have no source of income. Hence, they are faced with long-term requirements of hemodialysis, high medical costs, and increasing economic pressure. Therefore, the economic situation affects the stigma of elderly hemodialysis patients to different degrees, which requires assistance from the government and medical personnel. Government departments should provide relevant support policies to families with financial difficulties and at the same time improve the medical system to improve the efficiency of the medical institutions in serving patients. Family members should communicate with the patients promptly to discuss ways to reasonably reduce the economic pressure brought by hemodialysis and reduce the patient's stress. Medical personnel, should pay more attention to the psychological state of elderly hemodialysis patients, their daily behavior, emotional changes, etc., and implement necessary measures. All patients should be treated equally with no economic discrimination. Furthermore, medical personnel should actively communicate with the patients and address any psychological problems, and provide the necessary care to reduce the patient's stigma.

4.2.2. Social support

Based on the correlation analysis of social support and stigma, it was concluded that the lower the degree of social support, the greater the stigma. Social support mainly comes from three aspects: family, friends, and society, among which family support is the main source of patient support. Family members of patients should provide financial support to elderly hemodialysis patients so that they can adhere to hemodialysis treatment. Regular health education is provided to patients to explain relevant treatment modalities, disease prognosis, and related precautions to enhance patient awareness of their disease. In addition, this can reduce the patient's anxiety, worry, and stigma. Therefore, families and medical personnel need provide enough social support to help reduce the patient's stigma.

5. Conclusion

Stigma among elderly hemodialysis patients was determined to be at moderate to high levels, with economic status and social support being the main influencing factors. There are shortcomings in this study whereby the selection of people was geographical and was not representative. The use of convenience sampling and the limited sample size may lead to bias in the results, and there are fewer aspects involved in the influencing factors of stigma. Future studies should address other aspects of influencing factors that may cause stigma.

Disclosure statement

The authors declare no conflict of interest.

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