

The Effects of Nutrition Education on Mental Health of the Hemodialysis Patients in Maragheh, East-Azerbaijan, Iran

Zahra Moshtagh¹, Dr. Kazem Naeeni², Malihe Hamzezade³, Ali Arasteh⁴

¹Instructor, MSc of nursing ,Tehran Medical Branch , Islamic Azad University. Tehran, Iran

²Assistant Professor, Tehran Medical Branch ,Islamic Azad University. Tehran, Iran

³MSc of nursing Tehran Medical Branch , Islamic Azad University, Tehran, Iran

⁴Instructor, MSc Animal Science Department, IslamicAzad UniverSity, Bonab, Iran

Abstract: Background and Purpose: Due to the development of chronic diseases, including chronic renal failure, patients' quality of life and mental health is often below normal. Moreover, considering the importance of nutrition as an effective factor in quality of life and mental health of dialysis patients, nutrition education for these patients is of vital importance. This study was performed to develop a nutritional plan, training requirements in patients under hemodialysis and assessment of the effects of education on mental health of hemodialysis patients.

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1. Introduction

At the beginning of 21st century the biggest problem of medical societies is the growing outbreak of chronic diseases. The habits and hygiene behaviors to a great extent affect the infection and severity of these diseases (1). Because of their progressive process, chronic diseases such as chronic renal failure are often debilitating and despite many developments including hemodialysis and renal transplantation in the treatment of chronic renal failure, mental health as a big problem is threatened in this group of patients and is often lower than the normal range (2). The outbreak ratio of chronic renal failure in the world is 262 cases in one million people in a year and annually 8 percent is added to these cases (3 and 4). In Iran the growth of new cases of chronic renal failure is much high and equal to 22.30% annually (Najafi, 2006, p.15). Within the next five years this number will be doubled (the deputy of international communications supporting kidney patients, 2011). Occupational, financial, sexual, anaemia, mental and nutritional problems are among the main problems for these patients.(5) In Maslow's idea the people with good mental health have fulfilled their low level needs and don't have psychological disorders. So it can be concluded that securing physiological needs including nutrition can be effective in achieving mental health. Research in nutrition has showed that proper nutrition has a direct

relation with healthiness, thinking ability and improvement of people. In this respect, the issue of nutrition training to patients under treatment with hemodialysis is of special importance, because research has shown that beside renal transplantation and hemodialysis, considering nutritional plan is the most effective thing that can be done in order to reduce or eliminate the symptoms resulted from renal failure and so increasing the life of the patient. (6). So, in this case like any other educational program the realities related to nutrition should be taught to the patient with considerations about educational methods and show them how their nutrition should be and which parts of the program should be changed (7).

2. Materials and methods

The present research was quasi-experimental which was conducted on 40 patients affected by the final phase of renal disease, under treatment with hemodialysis that were chosen with a purposive method of sampling. The statistical population of this research was constituted of all male and female patients under treatment with hemodialysis with age range of 24-84 that were accepted in the hemodialysis unit of Bu Ali Sina Hospital in Maragheh, and six months had passed from the beginning of their first hemodialysis session. The

data collection instruments in this study was Goldberg's general health questionnaire (GHQ). This questionnaire includes two parts: first part is related to demographical information of patients including age, gender, level of education, marital status, occupation and residence. Second part is general health questionnaire of Goldenberg that includes 28 questions and it has four sub- criteria of bodily, anxiety, social performance disorder and depression symptoms. The sum of these four scores for these sub-criteria will provide a general score for the health of people. Questions 1-7 are related to physical signs, questions 8-14 are related to anxiety and questions 15-21 are related to social performance and question 21-28 are related to depression. Each question includes four items that are graded on a scale of 0-3 (never=0, normal=1, almost more than normal=2, much more than normal=3). Finally the final score was something between 0-84. Score 23 and more showed low mental health (Stora, 1386, p. 180). Scientific validity and reliability of the GHQ questionnaire was confirmed in national and international studies. Data collection method included gaining approval from health center of Maragheh and the head of hemodialysis unit and getting written agreement, the researcher gained access to the samples until there were enough samples for the research. It should be noted that after gaining the consent of the samples and explanation of the goals of the research they were asked to answer the questionnaires. Before completing the questionnaire the precise completion method of the questionnaire was explained to them. Before starting the education the researcher determined the mental health of the samples. The samples that had a low score of mental health (higher than 23) were chosen and were trained. Then, the educational content that was prepared by diet experts in the form of an educational plan from reliable scientific sources and was in accordance with the diet specific for these patients was distributed among them. Its content included identifying the type and the amount of the common and allowed food based on the usual diet used in Maragheh and also specifying unallowed foods for these patients. It was provided in a simple and comprehensible language and was offered in the form of educational class, educational booklet, educational pamphlet and CDs. The educational program was carried out in four two hour sessions twice a week and two months after the end of the program, the questionnaire was completed again by the samples. For the sake of data analysis, descriptive and deductive statistics and SPSS software were used. For deductive statistics the paired t test and for descriptive analysis mean, standard deviation,

statistical tables, frequency distribution tables and some diagrams were used.

3. Findings

In this study 40 patients under treatment with hemodialysis participated whose age range was between 24 and 84 with a mean age of 57.7. 67.5 % of the sample were male and 32.5% of them were females. 15% of the patients were single and 85% of them were married. 22.5% of them were retired, 10% were businessmen, 12.5% farmer and worker, 12.5% employees, 27.5% housewives, 2.5% physician and 7.5% were unemployed. 5% of them did not mention their occupation. 30 % of the patients were illiterate, 59% of them had finished guidance school, 12.5% had finished high school, 52% of them had a B.A and 2.5% of them had doctoral level educations. 57.5% of them lived in urban areas and 42.5% of them lived in rural areas.

The general mean value of mental health increased after the nutrition education compared to before that and a significant statistical difference was observed ($p < 0.01$, $t = 17.11$). The mean mental health score of patients reached from 38.5 before nutrition education (minimum 23 and maximum 67) to 23.67 (minimum 18 and maximum 46) after the nutrition education (diagram 1) and standard deviation was 11.08 before education compared to 7.211 after education (table 1). Also comparing the mental health scores for each of the four dimensions before and after education a significant statistical difference was observed (table 2).

4. Discussion and Conclusion

The hypothesis of this study was "nutrition education affects the mental health of patients under treatment with hemodialysis." Based on the above explanations and statistical analysis ($p < 0.01$) the hypothesis was confirmed and showed that nutrition education results in an increase in the level of mental health ($t = 17.11$).

The other aim of this research was to determine the effect of nutrition education on the mental health of patients under treatment with hemodialysis in Bu Ali Sina Hospital of Maragheh. The results show that the mean mental health before the nutrition education was 38.5 and after education was 23.15. Based on the results and using paired T test, a significant difference was observed before and after the education ($p < 0.01$). The results of the present study are in accordance with *Kozlovska's* results that showed that life satisfaction

and quality of life of dialysis people is to a great extent affected by having enough leisure time, independently doing daily activities, regular walking exercises, proper diet and living with other family members (8).

In relation with the other research aims in the areas of mental health amongst determining and comparing physical signs, anxiety, social performance and depression before and after nutrition education in patients under treatment with hemodialysis in BU Ali Sina Hospital in Maraghe in 2012, the following results were gained. The mean score of physical symptoms before feeding exercise was 9.95 and after that was 6.5. Based on the results and using paired T test a significant difference was observed before and after the education ($p < 0.0$, $t = 21.57$). The results of this study are in accordance with the results obtained by Aghakhani et al (2009) under the title of "the effect of nutrition education on the life quality of hemodialysis patients referred to Taleghani Hospital of Urmia ($p = 0.049$).

The mean anxiety score before the nutrition education was 11.5 and after the education it was reduced to 6.75. The paired T test showed that the anxiety score had a significant difference before and after the education ($p < 0.01$). The result of the present study are also in accordance with Cukorwhoshowed that anxiety outbreak in hemodialysis patients was

47.5% and concluded that diagnosis and treatment of anxiety has an important role in the improvement of life quality and treatment of these patients. And it is also in accordance with the research done by Soltan (2007) who mentioned that when the methods of fighting anxiety are taught to hemodialysis patients they better fight this diseases (9, 10).

The mean social performance score before nutrition education was 11.4 and after that it was reduced to 5/45. Paired T test showed that social performance score had a significant difference before and after the education ($p < 0.01$). The results of this study are not in accordance with Aghakhani et al (1388) under the title of "the effect of nutrition education on the life quality of hemodialysis patients referred to Taleghani Hospital in Urmia ($p = 0.043$). The mean depression score before the nutrition education was 5.57 and after education it was 1.97. Paired T test showed that depression before and after the education had a significant difference ($p < 0.01$). The results of this study are also in accordance with Dauarte (2009) in Brazil with the aim of the effect of cognitive-behavioral group therapy on the depression of dialysis patients showed that group therapy resulted in the improvement in the life quality of depressed patients, better sleeping and increase of social interactions and the mean test scores are reduced significantly after the educations (11).

Table 1. The results of paired T test for the effect of nutrition education on mental health

Mental health	Difference before and after education					t value	Level of freedom	Level of significance
	Mean difference	Standard deviation	Mean standard error	Confidence limits for difference 95%				
				Upper limit	Lower limit			
Before-after	15.03	5.55387	0.87814	16.801	13.248	17.110	39	0.000

Diagram 1. Comparing mental health before and after education

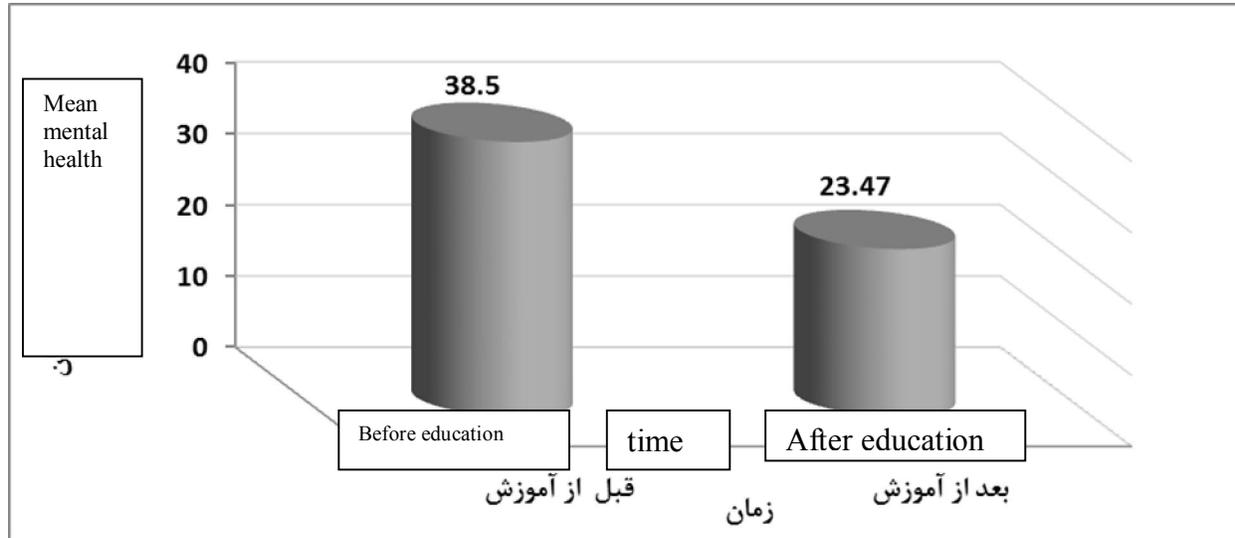


Table 2. Mean scores gained from different areas of mental health before and after nutrition education in units under study.

Mental health dimensions	Stage:	
	Before education	After education
Physical performance	9.95	6.5
anxiety	11.57	6.75
Social performance	11.4	5.54
depression	5.57	1.97

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