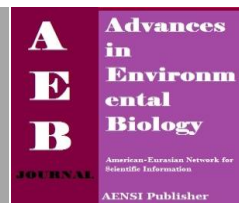




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The Impact of Cognitive - Behavioral Therapy on Pain in Patients Undergoing Hemodialysis in 22nd of Bahman Hospital in Nishapur

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ABSTRACT

Background: due to the incidence of renal failure and recognition of pain as one of the main problems in hemodialysis patients, this study aimed to evaluate the impact of cognitive-behavioral therapy in reducing pain. Method: This is a semi-experimental study [pre-test and posttest and tracking with the control group]. Therefore, 30 male were chosen as the participants out of the 145 patients on hemodialysis at 22 Bahman hospitals in the city of Nishapur. They had Chronic Pain confirmed by the Pain Beliefs Questionnaire of Williams and Thorne and were randomly selected and randomly divided into control [n = 15] and experimental [n = 15] groups. The results showed that group cognitive - behavioral therapy had no significant effect in reducing pain in patients undergoing hemodialysis compared with the control group [p<0.05]. Findings: The results indicated that group cognitive - behavioral therapy has not been effective in reducing pain in patients undergoing hemodialysis. On the other hand, group cognitive - behavioral therapy for pain relief in patients undergoing hemodialysis has not worked due to demographic character [p< 0.05].

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INTRODUCTION

Chronic kidney disease is one of the diseases that are not only put the physical health, but also other aspects of health at risk. Hence, comprehensive planning, and rehabilitation of these patients is unavoidable.

Currently, these patients who are not receiving renal can get rid of premature deaths innovative methods of treatment, such as dialysis. However, a wide range of physical, psychological, economic and social problems exist that affect the total quality of life. Hemodialysis in dialysis patients is currently prescribed as the most common and practical, easy recommends method but has different physical and nervous effects including headache, chest, and back, nausea and vomiting, hypotension, muscle cramps, itching, fever, chills, anemia, bone and joint diseases, cardio - vascular disease, infections, mental health problems, anxiety and depression. Thus, pain is one of the main problems in dialysis patients which should be considered. Approximately 70% of patients are in pain and other symptoms are seen at 5 to 10 percent of patients [1].

Over the last years medical professionals have tried to find detailed methods for relieving the pain. Today different psychological methods are used separately and simultaneously with medical methods to treat pain.

Many studies have shown the reliability of psychological methods [2]. Relieving the pain is important due to human reason and has many social, treatment and psychological advantages.

In spite of human attempts to get rid of pain during the history, getting rid of pain is inaccessible for us [3]. According to the researchers using the psychological treatment methods not only removes the pain but also the side effects of depression, nausea and others. Today the comprehensive sources of research show that although behavioral and psychological factors do not have significant effect on relieving the pain but they can be effective in removing the inability of patients due to pain. [5,6]. cognitive_behavioral approach of pain has shown that the psychological schemes mentioned below result in more severe experience of pain and being disabled due to the pain. Making the pain disastrous, avoiding pain, low efficiency, and weak understanding control on pain and using passive strategies [6]. Pain management is one of the important techniques in controlling pain and preventing it specifically the old pain which is considered by the professionals. On the other hand, introducing the gate control approach opened the way for using psychological methods of pain treatment and since 1960

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the findings have shown that these methods are effective in controlling the pain and psychological interventions along with other treatments can be effective in controlling pain [3].

Most people who suffer from these pains will face different problems during their lives such as physical and mental problems and low general health. Now, it can be said that there are many psychological interventions which all have experimental support [7]. One of these methods is cognitive behavioral treatment. This approach assumes that paying attention to emotional aspects of behavior results in curing which is based on the assumption of gate control. Gate control shows that perception of pain is the result of a complicated interaction between the incentives of pain receivers and intermediary elements such as natural motivation and emotional reactions [4]. The results of three analysis from 1983 to 2001 has shown that cognitive behavioral therapy could significantly affect the depression, pain, avoidance, anxiety and pain behavior [8]. According to high rate of kidney problems and its increase in the country and knowing pain as the main problem of the patients and since a few researches are done in this field so the present study can be a beginning point in studying the effect of cognitive behavioral method of treatment on reducing the pain in hemodialysis patients.

Methodology:

The present research method is semi experimental [pretest, posttest and following test on control group]. The population includes all the hemodialysis patients of 22nd of Bahman hospital in Nishaboor in 2014. The sample includes 30 female hemodialysis patients who had the criteria of entering the study. They filled William Thorn questionnaire and 30 of them were selected randomly and assigned to experimental and control groups. Then in 12 sessions for 70 minutes, the cognitive behavioral therapy was performed on the patients. This study is semi experimental and includes two groups of experiment and control. The control group did not receive any interventions. The questionnaires of William thorn was used in this study.

William and Thorn Questionnaire of Believes:

The questionnaire is based on believe in pain resistance by a test [9].the test includes 9 items and studied three components of pain resistance, ambiguity and mystical aspect of pain. Reliability of the test was determined as 0.80 by William Thorn. Asghari and colleagues [10] tested the validity of the questionnaire by factor analysis and reported Cronbach Alpha as 0.70 to 0.77.

Findings:

Table 1: Shows the mean and standard deviation of pain severity in both control and experimental groups in pretest, posttest and following test. Data are described in table 1. Two hypotheses of the study are described here.

significance	Chalky	SD	Mean	changes	Number	experimental group	
-.831	.608	3.929	2.10	12	15	Pre-test	pain severity
-.063	-.223	1.75119	.2000	6.00	15	posttest	
2.139	1.290	1.5776	.400	5.0	15	Following	
significance	Chalky	SD	Mean	changes	Number	control group	
-1.572	.389	1.687	.80	4	15	Pre-test	pain severity
-.541	-.970	1.52388	1.9000	4.00	15	posttest	
-1.388	-.719	1.1972	2.100	3.0	15	Following	

In table 1, the hypotheses are described. Here, two hypotheses are considered and the data were analyzed: The first hypothesis indicated that the group cognitive behavioral therapy is effective in hemodialysis patients. Independent t-test and analysis of variance along with other value were used to test the hypothesis. The results are presented in table below.

Table 2: The test of mean equality for pain pretest.

H1	Levene test		T	df	p-value	t-test	
	F	p-statistica				Confidence 95%	
						down	up
Accepting the equality of variance	9.568	.006	-.962	18	.349	-4.140	1.540
Rejecting the equality of variance			-.962	12.209	.355	-4.240	1.640

Results of the table above indicates that assuming mean equality is rejected based on Fischer test. In other words the calculated amount of Fischer value ($F_{0.95,1,18} = 9.568$) which is more than the same amount in Fischer table [$F=4.41$]. So, the null hypothesis that the variance of two groups is same is rejected with 95% confidence. The second row is used to evaluate the equality of means. Its value is $t=0.96$ which is less than the same value in t-student table [$t= 2.10$]. So with 95% confidence it is concluded that there is no significant difference between two groups. However, level of significance is more than 0.05 which approves the results. Accordingly, it is concluded that there is no difference between two groups in pain pre-test. After studying the

normality of the observations in postmaster, pre-test and following test, the second condition of equality of variances was measured by crochet test.

Table 3: Crochet test of pain management.

Internal effects	Chroiet Mokhli	K-2	df	sig	epsilon		
					Greenhouse 1	Hein-flat 1	Low limit1
repetitions	.184	28.772	2	.000	.551	.593	.500

In internal variance analysis of the tests it is assumed that there is hardly a correlation among all the variables. For significance test the Cheroet Mokhli, the K-2 is estimated and since it was significant the symmetrical hypothesis of the variance is rejected, in order to correct the weak point the epsilon method is used. in this method in order to organize the F ratio, first the p value and degree of freedom was multiplied by the epsilon. However, the Spss did the modification and the modified amount is presented in the table. Next table evaluated the linear effect. In fact in table 4 the linear relationship and second degree of scores in three tests is considered.

Table 4: linear relationship and second degree pain management in different stages.

	effect	sq	df	Sum ofsq	F	sig
repetitions	linear	.400	1	.400	.097	.759
	Second degree	1.200	1	1.200	.618	.442
Simultaneous and repetition effect	linear	22.500	1	22.500	5.466	.031
	Second degree	7.500	1	7.500	3.861	.065
error	linear	74.100	18	4.117		
	Second degree	34.967	18	1.943		

Results of the table 4 shows that there is no significant difference between the results of the tests and in other words the simultaneous effects are meaningful with 0.95 confidences. Table 5 studies the differences between the groups in three tests of pre-test, posttest and following test.

Table 5: Summary of factor analysis in repeated designs.

	sq	df	Sum ofsq	F	sig
fixed	93.750	1	93.750	12.120	.003
groups	7.350	1	7.350	.950	.343
error	139.233	18	7.735		

The results of the table above indicates that $F = 0.950$ with 1.18 df is less than the factor $F = 4.41$. so, with 95 percent confidence the scores of three tests do not have significant differences for two groups. According to the information, the hypothesis that group cognitive behavioral therapy is effective in reducing the pain of hemodialysis patients is rejected.

The second hypothesis said that "group cognitive behavioral therapy is effective in reducing the pain of the hemodialysis patients considering their demographic features". 2-k factor analysis is used to test the hypothesis.

Table 6: Summary of the one way ANOVA for studying the effect of treatment schema and demographic features of reducing the pain.

	sq	df	Sum ofsq	F	sig
Fixed coefficient	12.618	1	12.618	3.026	.089
groups	17.821	1	17.821	4.274	.044
Test type	1.600	2	.800	.192	.826
gender	4.391	1	4.391	1.053	.310
marriage	1.717	1	1.717	.412	.524
age	16.527	2	8.264	1.982	.150
income	9.498	2	4.749	1.139	.329
education	9.137	3	3.046	.730	.539
job	.079	1	.079	.018	.893
error	187.648	44	4.260		
total	287.250	59			

The results of the table above indicate that the significance level of all the mentioned points is more than 0.05 in all demographic features. Since the null hypothesis is meaningless, it is concluded that the second hypothesis is rejected with 95% confidence.

Discussion:

This research was done to study the effect of group cognitive behavioral therapy on reducing the pain in hemodialysis patients. This type of therapy helps the patients to have a new understanding of pain. In therapy session first the theories of determining and defining pain were discussed. The gate control approach was explained and the patients were informed of the cognitive factors [pain understanding], excitement factors,

activities and social factors which can be effective in reducing the pain. Therapist tries to recognize the inefficient thoughts of the patients and inform them about it. In the sessions, they gradually overcome their negative thoughts about future and replace them with more positive thoughts. A list of errors which led to negative understandings was reviewed and the patients are thought to recognize these thoughts and the anxieties along with them. Then cognitive reconstruction techniques are taught and the negative thoughts are replaced. Another goal of the therapy was to teach confronting skills for controlling the pain [11]. The first hypothesis indicated that group cognitive-behavioral therapy is effective in hemodialysis patients. But according to table 1, the hypothesis is rejected. This finding is same as the findings by Asghari [10], Ecclestone and colleagues [12] and is in contrast with the study of Tabatabaiee [13], Goli [14], Williams and Thorn [9], Naseri [15], Mehrbrian [16] and Golchin [17].

Ecclestone and colleagues [12] review the 52 studies since 1999 about reducing pain and depression in patients with chronic pain. The results indicated that the cognitive behavioral methods are not effective in physical disabilities. The results are same in the present research. Asgharimoghadam [10] showed that the cognitive behavioral method is not effective on physical disability but the results of the present research shows that these methods can significantly reduce the pain after treatment. Tabatabaiee [13] shows that the attitudes and believes of the patients about themselves and their problem is effective on pain, disability and their response to pain. The results of the study by Goli [14] indicate that the patients with migraine are significantly affected by the environmental factors and stress is one of the effective factors on their pain. Williams and Thorn [9] concluded that believing in pain and its continuance in future leads to more pain in future. The results of the seven metanalysis of cognitive behavioral therapy show that they are effective in treating backache and headache [18, 19]. The results of these studies are not same as the present study.

The second hypothesis indicated that group cognitive behavioral therapy is effective in reducing the pain of the hemodialysis patients based on their demographic features. Based on the table 6 it is concluded that the claim of the researcher is not meaningful. The results of the present study is not same as the results by Ghamkhar [20], Abedi [21] and Arthur [22]. Since 70 percent of the sample does not have academic education, so their understanding of pain has been different. The findings of Ghamkhar show that as the pain is more ambiguous for women it is more probable to continue in future. In other words, women are more conscious about pain and due to female features they are more sensitive to their bodies. It should be mentioned that pain understanding is different in men and women [20]. The results of the study by Abedi [21] show that the educated people have higher self-control and social support which is very effective in overcoming the pain. The results of this study are not same as the results of the present study.

Affiliation:

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