



EFFECT OF BENSON'S RELAXATION TECHNIQUE (BRT) ON ANXIETY AND FATIGUE AMONG PATIENTS UNDERGOING DIALYSIS IN A SELECTED SETTING AT MANGALURU.

Nursing

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ABSTRACT

Introduction: Anxiety and fatigue are common yet frequently overlooked symptom in patients with End stage renal disease (ESRD) undergoing hemodialysis (HD). Benson's Relaxation Technique (BRT) is one of the non-pharmacological interventions which helps in reducing the anxiety and fatigue in patients undergoing dialysis.

Objective: To assess the effectiveness of BRT on level of anxiety and fatigue among patients undergoing HD.

Materials and Methods: A Quasi – Experimental pretest posttest control design was used and forty subjects were selected by purposive sampling technique. The pretest anxiety level and pretest fatigue level was assessed in experimental and control group. BRT was administered twice to the subjects in experimental group for 15 minutes prior to two consecutive dialysis sessions. The control group received the routine management. The posttest level of anxiety and posttest level of fatigue was assessed immediately after the intervention in both groups.

Results: The results showed that there was a reduction in the level of anxiety in the experimental group both on day 1 ($P=0.001$) and day 2 ($P=0.001$). Similarly, there was a reduction in the level of fatigue in the experimental group both on day 1 ($P=0.001$) and day 2 ($P=0.001$). However, there was no statistical difference in the level of anxiety and fatigue in the control group.

Conclusion: The findings of the study showed that BRT was effective in reducing the anxiety and fatigue among patients undergoing HD in the experimental group.

KEYWORDS

Effect; Benson's Relaxation Technique (BRT); Hemodialysis (HD); Anxiety; Fatigue

INTRODUCTION

ESRD is a progressive, irreversible deterioration in renal function in which the body's ability to maintain metabolic and fluid and electrolyte balance fails, resulting in uremia or azotemia¹. ESRD is now recognized as a major medical problem worldwide. The Global Burden of Disease (GBD) in 2015 ranked CKD as the 17th cause of deaths globally and estimated the annual death rate of 19.2 deaths per 1,00,000 population. In India, GBD of 2015 ranks CKD as the 8th leading cause of death. Deaths due to renal failure constituted 2.9% of all deaths in 2010–13 among the age group of 15–69². Patients on dialysis are in a situation of abject dependence on dialyzer, dialysis procedure and a group of qualified medical professionals for the rest of his/her life³.

The source of the patient's anxiety are invasive procedures accompanying HD such as: inserting a needle into the arteriovenous fistula, implanted central venous catheters, alarm sounds in the dialysis machine and the renal staff changing shift at the dialysis station e.g. a lack of a permanent nurse who punctures the fistula properly⁴. Fatigue is one of the most frequent complaints of dialysis patients. Some of the dialysis-related factors that may lead to fatigue in patients with ESRD include uremia, anemia, sleep disorders and psychosocial distress. Patients with longer post-dialysis recovery time intended to have greater levels of fatigue⁵. Many studies have been conducted to assess the importance of mind-body interventions in reducing anxiety and fatigue in patients undergoing dialysis.

Apart from all the other non- pharmacological methods, Dr. Herbert Benson MD, documented the positive benefits of "The Relaxation Response". According to Dr. Benson, the most effects of relaxation lead to the decrease in metabolism and strengthening of heart contractions, decrease in respiration & blood pressure and decrease in release of epinephrine in an individual. The Benson's Relaxation Technique (BRT) was administered for 15 minutes prior to two consecutive dialysis sessions. The subjects were advised to do the following steps for 15 minutes,

- Lie in supine relaxed position.
- Slowly close the eyes.
- Slowly and gradually relax all the muscles of the body from the feet to the face and keep calm.
- Breathe through the nose and be aware of the breath. Breathe out

slowly through the mouth and say "peace" and breathe comfortable and normally.

- Breathe as above for 15 minutes and try to relax muscles. Then open the eyes slowly but not to get up for a few minutes⁶.

This research study was undertaken to find if Benson's Relaxation Technique (BRT) was effective in reducing anxiety and fatigue in patients undergoing HD.

Objectives of the study:

1. To determine the pretest and the posttest level of anxiety and fatigue among patients undergoing HD in experimental and control group.
2. To find the effectiveness of BRT on level of anxiety and fatigue among patients undergoing HD in experimental group.
3. To compare the posttest level of anxiety and fatigue among patients undergoing HD in experimental and control group.
4. To find the association between pretest anxiety and pretest fatigue score among patients undergoing HD and demographic variables.

MATERIALS AND METHODS:

A Quasi-experimental pretest posttest control group design was adopted for this study and was conducted from 25th February 2019 to 23rd March 2019 in the 23 bedded dialysis unit of Father Muller Medical College and Hospital (FMMCH) at Mangaluru. Formal permission was obtained from the Institutional Ethics Committee of FMMCH (FMMCIEC/CCM/77/2018) prior to the data collection. The inclusion criteria were: patients undergoing HD on outpatient basis in the last 6 months and those in the age group of 18–70 years. The study excluded critically ill patients undergoing HD. The attrition rate was considered as 10% and the sample size was estimated using the following formula:

$$n = 2\sigma^2(Z_{\alpha} + Z_{\beta})^2 / d^2$$

The purposive sampling was used to select 40 subjects undergoing HD on outpatient basis and subjects were assigned to experimental group ($n_1=20$) and control group ($n_2=20$). The written informed consent was obtained. The data was collected by using Baseline Proforma, Beck Anxiety Inventory (BAI) and Fatigue Assessment Scale (FAS) prior to the dialysis session in the experimental and control group. Experimental group received BRT prior to the dialysis session for 15

minutes on day 1 and day 2 whereas the control group received routine hospital treatment on day 1 and on day 2. Post-test was conducted immediately after each intervention.

STATISTICAL ANALYSIS:

Demographic data was tabulated by using frequency and percentage. The level of anxiety and level of fatigue were analysed by using descriptive statistics and expressed in terms of grades, frequency, percentage, mean and standard deviation (SD). The data was analysed using paired 't' test, unpaired 't' test and chi square test using SPSS software version 25.

RESULTS:

Demographic Characteristics in Experimental and Control group

Majority (30%) of the subjects were in the age group of 28-37 and 48-57 in the experimental and control group. Majority (40%) of the subjects had undergone ≤ 10 dialysis sessions in the experimental group and in the control group. Majority of the subjects in the experimental and control group belonged to monthly income of group of less than 50000 and the source was self or family. The homogeneity of the experimental and control groups consisting of 20 subjects each was calculated using the Chi-square test for all the demographic variables and the calculated P value, ($P > 0.05$) showed that both the groups were homogenous. The mean anxiety scores and mean fatigue scores of experimental and control groups was normally distributed along the Q-Q plot and hence the further statistical analysis was done using parametric tests.

Comparison of Mean Pretest and Posttest Anxiety scores among the groups

In terms of efficacy of BRT on patients undergoing HD, the level of anxiety was significantly reduced in the experimental group both on day 1 ($t_{19}=2.8$, $P=0.01$) and day 2 ($t_{19}=8.2$, $P=0.001$). However, there was no statistical difference in mean anxiety scores in control group both on day 1 ($t_{19}=1.1$, $P=0.25$) and day 2 ($t_{19}=0.6$, $P=0.49$).

Comparison of Mean Pretest and Posttest Fatigue scores among the groups

The level of fatigue was reduced significantly in the experimental group both on day 1 ($t_{19}=19.3$, $P=0.001$) and day 2 ($t_{19}=15.3$, $P=0.001$) indicating that BRT was effective in reduction of fatigue. In the contrary, there was no significant reduction of fatigue in the control group both on day 1 ($t_{19}=2.04$, $P=0.05$) and day 2 ($t_{19}=0.4$, $P=0.6$).

Table 1: Comparison of Mean Posttest Anxiety scores of Experimental Group and Control Group

N=20+20

Anxiety Level							
Days	Variables	Mean $\pm$ SD	Standard Error	't' value	P value	95% CI of the difference	
						Lower	Upper
Day 1	Posttest 1 Experimental Group	15.6 $\pm$ 3.9	1.5	3.9	0.001*	2.9	9.2
	Posttest 1 Control Group	21.6 $\pm$ 5.7					
Day 2	Posttest 2 Experimental Group	12.2 $\pm$ 2.6	1.4	5.8	0.001*	5.3	10.9
	Posttest 2 Control Group	20.4 $\pm$ 5.7					

$t(38) = 2.03$, $p < 0.05$, *Significant

The data presented in the table 1 shows a significant difference in the mean posttest anxiety score in the experimental and control group indicating that BRT was effective in reducing anxiety on day 1 and day 2 in the experimental group.

Table 2: Comparison of Mean Posttest Fatigue Scores of Experimental Group and Control Group

N=20+20

Fatigue Level							
Days	Variables	Mean $\pm$ SD	Standard Error	't' value	P value	95% CI of the difference	
						Lower	Upper

Day 1	Posttest 1 Experimental Group	21.3 $\pm$ 1.7	0.7	16.6	0.001*	10.8	13.9
	Posttest 1 Control Group	33.7 $\pm$ 2.9					
Day 2	Posttest 2 Experimental Group	21.2 $\pm$ 1.5	0.5	20.4	0.001*	10.8	13.1
	Posttest 2 Control Group	33 $\pm$ 2					

$t(38) = 2.03$, $p < 0.05$, *Significant

The data presented in the table 2 shows a significant difference in the mean posttest fatigue score in the experimental and control group indicating that BRT was effective in reducing fatigue on day 1 and on day 2 in the experimental group.

Association of Mean Pretest Anxiety scores and Mean Pretest Fatigue scores among patients undergoing dialysis and demographic variables in the Experimental and Control group

The obtained P values of all the demographic variables using Chi-square test were greater than 0.05. Hence it was concluded that there was no significant association of the mean pretest anxiety score and mean pretest fatigue score with demographic variables in the experimental group and control group.

DISCUSSION:

In the present study the paired 't' test value on day 1 ($t_{38}=3.9$, $P=0.001$) and on day 2 ($t_{38}=5.8$, $P=0.001$) showed that there was a significant reduction in the mean anxiety scores in the experimental group. These findings were congruent to the findings of the study conducted by Meawad E to assess the effect of BRT on anxiety, depression and sleep quality of patients undergoing HD. There was a reduction in mean anxiety score from 12.9 ± 2.8 to 6.2 ± 2.1 . The paired 't' test value = 18.1 revealed that there was significant reduction in the mean anxiety scores in the experimental group after BRT ($p < 0.001$)⁷.

In the present study the paired 't' test value on day 1 ($t_{38}=19.3$, $P=0.001$) and on day 2 ($t_{38}=15.3$, $P=0.001$) showed that there was a significant reduction in mean fatigue scores in the experimental group. These findings were congruent to the findings of the study conducted by Koushan M, Mohsenpour M, Rakhshani MH, Narjes H to assess the effect of BRT on HD Patients' Fatigue. In the relaxation group there was reduction in mean fatigue score from 6.97 ± 0.84 to 3.92 ± 1.11 . The results showed that there was significant reduction in the mean fatigue scores in the experimental group after administering of BRT ($p < 0.01$)⁸.

In the present study the unpaired 't' value on day 1 ($t_{38}=3.9$, $P=0.001$) and on day 2 ($t_{38}=5.8$, $P=0.001$) showed that there was a significant reduction in the mean posttest anxiety scores in the experimental group than the control group. These findings were congruent to the findings of the study conducted by Kiani F, Zadeh MAH, Shahrakipour M to assess the effect of BRT on anxiety of patients undergoing HD. The mean posttest anxiety score was significantly lower in the relaxation group 35.68 ± 5.88 compared to that of the control group 41.80 ± 7.99 . The unpaired 't' test revealed that, there was significant reduction in the mean posttest anxiety scores in the experimental group when compared to the control group ($p=0.001$)⁹.

In the present study the unpaired 't' value on day 1 ($t_{38}=16.6$, $P=0.001$) and day 2 ($t_{38}=20.4$, $P=0.001$) showed that there was a significant reduction in the mean posttest fatigue scores in the experimental group in comparison to the control group. The findings of the present study were congruent to the findings of the study conducted by Rambod M, Pasyar N, Sharif F, Rafii F, Pourali Mohammadi N to assess the effect of BRT on physical activity of HD patients. The mean posttest ADL scores in the intervention group was 13.42 ± 1.44 and in the control group was 11.74 ± 3.45 . The results of unpaired 't' test showed that there was a reduction in the mean posttest ADL scores in the experimental group than the control group ($p=0.006$)¹⁰.

In the present study there was no significant association between the pretest level of anxiety among patients undergoing HD and selected demographic variables in the experimental ($P > 0.05$) and control group

($P>0.05$). These findings were congruent the findings of the study conducted by Gorji M, Ardebil M, Mahdavi A, Gorji A, Yazdani J to assess the effect of BRT perceived stress, anxiety and depression among HD patients which showed that there was no association between anxiety and the demographic variables ($p>0.05$) in the experimental and control group during the pretest¹¹.

In the present study there was no significant association between the pretest level of fatigue among patients undergoing HD and selected demographic variables in the experimental ($P>0.05$) and control group ($P>0.05$). In the present study there was no significant association between the pretest level of fatigue among patients undergoing dialysis and selected demographic variables in the experimental and control group. These findings are contradictory to study conducted Mollaoglu M to assess the fatigue in people undergoing HD which showed that there was an association between fatigue and age at $p<0.05$ and also between fatigue and gender at $p<0.01$ ¹².

CONCLUSION:

Anxiety experienced by ESRD patients is a subjective feeling of fear related to disability or death and worry related to outcome of the treatment. The maintenance dialysis creates a strong feeling of fatigue and limits the physical and social activities of the patients undergoing dialysis. The healthcare professionals (HCPs) need to be competent to identify and address the physical and psychological problems of the patients. BRT being a cost-effective and one of the easiest methods of relaxation can be performed on a routine basis in the dialysis unit. An HCP certified in BRT can involve in the policy making at the institution level to implement BRT as a routine intervention for patients undergoing dialysis and educate the patients and their caregivers regarding the BRT so that they could perform it daily in their home settings for better outcome.

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