Research Article Available online www.ijsrr.org ISSN: 2279–0543

International Journal of Scientific Research and Reviews

Effect of Music Therapy on Peritoneal Dialysis Patients

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ABSTRACT

The etiology of chronic kidney diseases of unknown etiology are considerably high in the states of undivided Andhra Pradesh, Odisha and Goa leading to dialysis in several cases. Depression and stress are under diagnosed problems and an independent risk factor for increased morbidity and mortality in these patients. As music, therapy is reported to be a stress reliever the present study concentrate on providing music therapy to patients on peritoneal dialysis. Fifteen patients on CAPD/ APD who were monitored with diet therapy earlier were put on music therapy for one year. They were provided with 6 songs approved by music therapist, were asked to listen for 30 minutes daily preferably in the morning. The study proved to be very effective as they reported to be relaxed, tension free and could perform their regular routines without any hassles. Blood profile indicated that hemoglobin stabilized at 13.0mg/dl, urea came down from 58 to 38, potassium 5.1 to 3.7, sodium 140 to 128, cholesterol 170 to 157, blood glucose level 98-85. Creatinine was not affected considerably although there is considerable reduction in the values it reduced from 4.2 to 3.8 while the normal is 0.9 to1.4 for males. The inference is that music therapy influenced considerably on the blood profile of the patients on peritoneal dialysis.

KEY WORDS: peritoneal dialysis, music therapy, blood profile, depression, anxiety.

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INTRODUCTION

Music has been a constant part of our culture since the start of civilization . The purpose of music range from aesthete pleasure, religious or ceremonial purposes and as a product in society more recently the use of music as a form of therapy is becoming recognized in our communities. Studies have shown positive effects of music on measured physiological changes in hemodynamic, respiratory and neurological function.[1,2] Although studies have proposed that music therapy has an effect on dialysis and kidney transplant patients solid evidence of its utility is lacking in the areas of peritoneal dialysis.

The etiology of chronic kidney diseases varies considerably throughout India, with part of the states of undivided Andhra Pradesh , Odisha and Goa having high levels of chronic kidney diseases of unknown etiology[3]) Depression and stress is common, under diagnosed problem and an independent risk factor for increased morbidity and mortality in these patients.[4] Literature has shown the therapeutic effect of music on physical and emotional wellbeing of HD patients, analysis of these studies showed that musical intervention effectively reduced anxiety symptoms in HD patients therefore just listening to music can provide relaxation effects. Music therapy as a science and technology has explained that it has explicit therapeutic goals – thus use of music for therapeutic purposes[5,6,7,8]. Music therapy is being practiced in various hospitals.[9, 10] and found as an effective therapy for treatment of depression [11]. On PD patients studies are not available Therefore, the objective of this study was to evaluate the effect of music therapy on Peritoneal dialysis patients.

Depression and stress is a common and under diagnosed problem, an independent risk factor for increased morbidity and mortality in these patients.[12]Literature has shown the therapeutic effect of music on physical and emotional wellbeing of HD patients, analysis of these studies showed that musical intervention effectively, reduced anxiety symptoms in HD patients therefore just listening to music can provide relaxation effects. Music therapy is being practiced in various hospitals.[13,14] and found as an effective therapy for the treatment of depression [15.] On peritoneal dialysis studies are not available.

METHODOLOGY

Fifty eight patients CAPD/APD in the age group of 45-60 males, were contacted. Of them only 26 were selected as per the inclusion criteria. 5 dropped before intervention, 3 of them developed complications towards the end of the project 3 went for transplantation. Finally, 15 patients participated till the end of the study. Patients who are on peritoneal dialysis and diabetic, were selected. Those with multiple problems, hearing problems, pregnant and lactating mothers were excluded from the study.

Patients were instructed to take medicines as prescribed by nephrologist, diet as planned by a dietician, with 30 minutes of walking. This program ran for a period of 3 years with close monitoring of creatinine, potassium, urea and fasting glucose levels.. End of third year the concept of introducing music therapy was felt.

Music therapy was introduced for one year to see if music therapy on PD patients will have any effect on blood levels. Music therapy in the form of six songs as approved by music therapist was given to the patients. They were asked to listen to these songs for 30 minutes daily or more if they desire, preferably in the morning. They were followed for one year. Quarterly blood profile was taken and diet and other parameters monitored. Regular inclusion foods recommended are indicated below, quantities were individually monitored based on blood profile

Protein rich foods like chicken, fish and sea food eggs and /or egg whites were given liberally, Vegetables all types included- leafy vegetables, other vegetables, carrot, beetroot .Pulses included in moderate amount since they contain high potassium values. Fruits like papaya, apple , kala Jamun, guava, watermelon only were included.

EXCLUDED

Canned foods, canned dehydrated soups. Frozen foods, processed meats, salted snacks like chips, crackers etc. Fluid was given as 1-2 liters per day depending on fluid output .Potassium salts were avoided instead use of fresh herbs and spices, instead of salt and pepper, lemon juice was advised.

Foods rich in phosphorus were limited (milk , yoghurt , ice cream , cheese , nuts , peanut butter ,dried beans, peas , dark cola drinks, processed foods and food additives and deep fried foods like vada, poori, bajji, chips fries etc) as dialysis cannot remove phosphorous. Increase in phosphorus results in calcium being removed from bones and bones become weak, calcium-phosphorus crystals are formed which accumulates in joints and gives severe pain.

RESULTS AND DISCUSSIONS

The need to develop alternate therapies in the present changing scenario to fight with stress related diseases and treatments is gaining importance . Studies conducted thus far concentrated on music therapy on diabetes, Blood Pressure, ADHD children and hemodialysis[16,17,18] but studies on influence of music therapy on patients undergoing peritoneal dialysis are not available .In Table 1 diet and music therapy of patients on peritoneal dialysis is indicated .

Table 1: Diet and Music Therapy on Peritoneal Dialysis Patients

Year	Quarter	Hb	Creat-inine	Urea	Potassium	Sodium	Chole sterol	Fasting sugar	Gly.Hb
units		mg/dl	mg/dl	mg/dl	m.mols.	m.mols	mg/dl	mg/dl	%
1st *	Jan –Mar	9.10	4.66	138	4.86	129	130	79.6	10.9
year	Apr- June	12.70	9.35	215	6.42	135	130	190	10.8
	July –Sept	8.10	4.30	49	4.90	135	157	189	11.7
	Oct-Dec	12.90	2.60	56	4.60	137	255	181	11.7
2nd	Jan –Mar	11.60	2.60	58	5.80	146	170	183	9.6
Year	Apr- June	11.20	3.20	59	4.60	138	246	119	9.2
	July –Sept	12.70	3.60	50	4.50	125	219	139	11.7
	Oct-Dec	12.20	3.80	53	5.20	141	138	87	7.4
3rd	Jan -Mar	12.00	3.60	50	5.40	139	214	111	7.3
Year	Apr- June	11.60	4.10	47	4.60	137	157	109	7.1
	July -Sept	12.00	3.67	65	5.20	140	182	114	8.4
	Oct-Dec	12.70	3.90	57	5.30	142	166	107	8.5
Music Therapy Added to Diet in the Fourth Year.									
4th	Jan –Mar	12.80	2.90	58	5.10	140	170	98	7.3
Year	Apr- June	12.80	4.20	64	5.30	143	174	98	7.2
	July -Sept	13.30	4.20	62	3.70	144	139	89	6.9
	Oct-Dec	13.00	3.80	38	3.70	128	157	85	6.8
Ref. Std Range		**13-17**	**0.9-1.4**	**15-40**	**3.5-5.0**	**135-145**	**150-200**	**60-100**	**4.0-6.0**

Note: First to third year are reported values on the same patients.

The results of the one yearlong study on music therapy and the continuous monitoring of the various aspects of dialysis indicated that there was no infection in any of these fifteen patients on dialysis, it can be inferred that the diet and cleanliness, regularly monitored has resulted in no infection. The results indicated that hemoglobin stabilized at 13.0mg/dl, urea came down from 58 to 38, potassium 5.1 to 3.7, sodium 140 to 128, cholesterol 170 to 157, blood glucose level 98-85 . Creatinine is not much effected although there is considerable reduction in the values it reduced from 4.2 to 3.8 while the normal is 0.9 to 1.4 for males. The inference is that music therapy influenced considerably on the blood profile of the patients on peritoneal dialysis.

The patients were very happy with PD as they can move easily, they are relaxed more so with those on APD. The conclusion is that music therapy has relieved the stress level and several parameters could be controlled.

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