



Effectiveness of Pranayama on Fatigue and Insomnia among Patients with Hemodialysis

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Article History:

Received on: 08 Nov 2020

Revised on: 14 Dec 2020

Accepted on: 18 Dec 2020

Keywords:

Pranayama,
Fatigue,
Insomnia,
Patients with
Hemodialysis

ABSTRACT

Chronic renal failure or chronic kidney disease is a slowly progressive loss of kidney work over a time of quite a while. As kidney disappointment propels and the organ's capacity is truly weakened, hazardous degrees of waste and liquid can quickly develop in the body. On the off chance that persistent kidney disappointment closes At end-stage kidney infection, the patient won't get by without dialysis or a kidney transplant. Dialysis is adopted for cleaning the blood, is one of the most widely recognized treatment alternatives for patients with the end-stage renal illness. The study aims are to assess the effectiveness of Pranayama on fatigue and insomnia among patients with Hemodialysis. An evaluate approach was used for this study with one group pretest and posttest design. Nonprobability purposive sampling method was used to select the 60 samples of the study. The tool used for this study was fatigue and insomnia severity index was to assess the level of insomnia among patients with Hemodialysis. Pranayama was given to the patients for 15 mins twice a day, one hour after Hemodialysis for 15 days. The collected data were analyzed using descriptive and inferential statistics. The results depicts that mean posttest score of fatigue and insomnia were 19.09 (SD + 8.44), 15.17 (SD+ 4.85) and the mean pretest score were 59.38(SD +8.18), 25.55 (SD+ 3.37) respectively. The mean difference was 40.29 and 10.38, respectively. The paired 't' value were 33.77 and 22.8 and ('t' value= 0.0001) respectively, which was significant at $P < 0.05$. The above findings showed that Pranayama was an effective intervention in reducing fatigue and insomnia among patients with Hemodialysis.



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ISSN: 0975-7538

DOI: <https://doi.org/10.26452/ijrps.v11iSPL4.3764>

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INTRODUCTION

Chronic renal failure depicts the continuous loss of kidney work. The kidneys filters squander and overabundance liquids from the blood, which are then discharged in the urine (Pandey *et al.*, 2017). When chronic kidney disease arrives at a serious stage, hazardous degree of liquid, electrolytes and squanders can develop in our body (Roth *et al.*, 2010). The signs and manifestations of constant kidney sickness create over the long run if kidney harm progress gradually, queasiness and heaving, exhaustion and shortcoming, rest issues, changes in pee yield, growing of feet and lower legs, muscle jerks and spasms, signs and side effects may not show up

until irreversible harm has occurred (Singh *et al.*, 2009). Patients, as a rule, require Hemodialysis when the byproducts in their body become so high that they begin to get debilitated from them (Anupama and Uma, 2014). The degree of the side effects generally develops gradually. Hemodialysis is a treatment for those patients whose kidney can't work any longer. It is a method of purging the blood of poisons, additional salts and liquids through a dialysis machine called "Artificial Kidney" (Okonta, 2012). It keeps up appropriate compound equilibrium, for example, potassium, sodium and chloride and keeps pulse under control (Kashinath *et al.*, 2014).



Figure 1: Frequency and percentage distribution of pretest and posttest level of fatigue among patients with Hemodialysis.

According to National kidney foundation (2018), the duration of Hemodialysis procedure in usual schedule treatment is three times a week. Patients likely have the same morning or afternoon time for each treatment. The length of treatment depends on patient conditions. During Hemodialysis procedure three to four is common (Shende and Parekh, 2011). Fatigue is an abstract inclination of sleepiness which is unmistakable from shortcoming and has a steady beginning. Weakness likewise alluded to as sleepiness, weariness, laziness, and eagerness portrays a physical or mental condition drained and feeble. Exhaustion is regularly brought about by a blend of components. Progressed illness is the normal reason for weakness. Serious heart and lung sickness, kidney disappointment and liver illness just as malignancy and its therapy are additionally connected with fatigue (Awuah *et al.*, 2013).

The exhaustion goes from 60% to as high as 97% in patients on Hemodialysis substitution treatment. The significance of patients with kidney infection is underlined by the perception that 94% of Hemodialysis patients embraced an eagerness to go through more incessant dialysis if there would be a related expansion in energy level (Anu *et al.*, 2014). Insomnia is very basic among Hemodialysis patients.

Abstract rest grievances are accounted for in up to 80% of patients issues with eagerness, twitching legs, gagging sensations and persistent exhaustion. The Integration of reciprocal and elective clinical treatments, for example, needle therapy, customary oriental medication, chiropractic, homegrown medication, rub treatment, yoga and brain, body treatment as traditional treatment guidance may collaborate with patient's exertion towards self consideration in Hemodialysis patients (Ali *et al.*, 2012). Tamilnadu incidence of insomnia in chronic maintenance of Hemodialysis patients. There was a high prevalence of depression (47.8%) insomnia (60.9%) increased risk of sleep apnea (24.6) and depression in caregivers (31.9%) (Colgrove *et al.*, 2015).

Al-Jahdali (2016) had conducted the study to assess the prevalence of insomnia in patients with renal failure admitted to the dialysis unit in the Marjan Teaching Hospital. The sample composed of 88 cases (51 males and 37 females) referred for Hemodialysis. Sleep disorders are common among patients with renal failure undergoing Hemodialysis (Bantornwan *et al.*, 2014). The overall mean of age patients who sit for renal dialysis was 53.14 + 13.92 years. Out of 88 patients, 47 patients (53.4%) were complaining of insomnia, 57.9% of the sample were males and 42.1% were females. Insomnia was reported by 53.4% among 88 patients undergoing Hemodialysis (Rohini and Ezhilarasu, 2015).

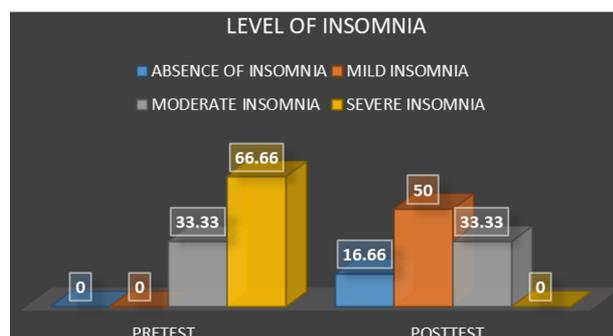


Figure 2: Frequency and percentage distribution of pretest and posttest level of insomnia among patients with Hemodialysis.

The researcher observed during the clinical experience in SMCH hospital. That the patients with Hemodialysis, the majority of the patients with Hemodialysis suffered from pain, fatigue, insomnia, muscle cramp, and swelling in the face and legs. Hence, the researcher felt to help the patient with Hemodialysis by using Pranayama to reduce fatigue and insomnia. The study aims are to assess the effectiveness of Pranayama on fatigue and insomnia among patients with Hemodialysis.

Table 1: Assessment of the effectiveness of Pranayama pretest and posttest level of fatigue among patients with Hemodialysis.

Level of Fatigue	Pretest		Post-test	
	Frequency	Percentage	Frequency	Percentage
Absence of fatigue		1.66	20	33.33
Moderate fatigue	1	1.66	40	66.66
Severe fatigue	58	96.66	-	-

Table 2: Frequency and percentage distribution of pretest and posttest level of insomnia among patients with Hemodialysis (N=60).

Level of Insomnia	Pretest		Post-test	
	Frequency	Percentage	Frequency	Percentage
Absence of Insomnia	-	-	10	16.66
Mild Insomnia	-	-	30	50
Moderate Insomnia	20	33.33	20	33.33
Severe Insomnia	40	66.66	-	-

Table 3: Comparison of mean score, standard deviation, mean difference and paired t value of pretest and posttest level of fatigue among patients with Hemodialysis.

Variable	Mean	Standard Deviation	Mean Difference	Paired 't' Value and P-Value
Pretest	59.38	8.18	40.29	33.77
Post-test	19.09	8.44		P=0.001

Table 4: Comparison of mean score, standard deviation, mean difference and paired t value of pretest and posttest level of insomnia among patients with Hemodialysis.

Variable	Mean	Standard Deviation	Mean Difference	Paired 't' Value and P-Value
Pretest	25.55	3.37	10.38	22.8
Posttest	15.17	4.85		P=0.001

MATERIALS AND METHODS

An evaluate approach was used for this study with one group pretest and posttest design. Nonprobability purposive sampling method was used to select the 60 samples of the study in the Dialysis Unit of Saveetha Medical College and Hospital and formal permission was obtained from the hospital authority. The patients were given explained about the purposes of the study and written informed consent was taken from each participant. On 1st day, the demographic variables were collected by interview then the pretest was conducted to the participants by using fatigue severity scale to assess the level of fatigue and insomnia severity index to assess the level of insomnia and Pranayama was given to the participants individually for 15 days one hour after Hemodialysis, by using the demon-

stration method. Each session lasts for 30 minutes per day, and each day observes the patients up to 15 days. On the 16th day posttest was conducted by using the same tool. The same procedure has been followed for the remaining 40 samples of the patients with Hemodialysis. The data were collected and analyzed and tabulated.

RESULTS AND DISCUSSION

Distribution of demographic variables of patients with Hemodialysis

Regarding age majority of patients 30(50%) belonged to the age group of 45-50 years, 40 (66.66%) were males, 56(93.33%) were married, regarding educational status had no formal education 25 (41.66%), 23(88.33%) were selfemployed, 45 (75%) belonged to the nuclear family and 15(25%)

where belongs to a joint family. With regard to family monthly income, the majority of patients 22 (36.66%) were in between Rs 15,000 – 20,000, Regarding, duration of illness, the majority of patients 23(38.33%) had a duration of illness for 1 year. Regarding getting Hemodialysis treatment, the majority of 23(38.33%) for under one year. Regarding the cycle of Hemodialysis, the majority of patients 57(95%) were having 5-10 cycles per month.

Assessment of the effectiveness of Pranayama pretest and posttest level of fatigue among patients with Hemodialysis

Table 1 shows in the pretest level of fatigue, 58(96.66%) had Severe levels of fatigue, and 1 (1.66%) had a severe level of fatigue and 1(1.66%) had moderate fatigue, whereas in the posttest level of fatigue 40(66.66%) had moderate fatigue and 20 (33.33%) had an absence of fatigue Figure 1.

Assessment of the effectiveness of Pranayama pretest and posttest level of insomnia among patients with Hemodialysis

Table 2 depicts that in the pretest level of insomnia, majority of the patient 40(66.66%) had severe insomnia and 20(33.33%) had moderate insomnia, whereas, in the posttest level of insomnia, 10 (16.66%) had an absence of insomnia, 30(30%) had mild insomnia, 20(33.33%) had moderate insomnia Figure 2.

Comparison between the effectiveness of Pranayama pretest and posttest level of fatigue among patients with Hemodialysis

Data analysis shows that the mean pretest score level of fatigue is 59.38 (SD + 8.18) and the posttest mean score 19.09 (SD + 8.44) and mean difference is 40.29. The posttest mean score (19.09) was lower than the pretest score is (59.38). The paired 't' value 33.77 which was significant at $P < 0.0001$. Therefore, the research hypothesis H_1 the mean posttest level of fatigue score is significantly lower the mean pretest level of fatigue score was accepted.

Comparison between the effectiveness of Pranayama pretest and posttest level of insomnia among patients with Hemodialysis

Data analysis shows that the mean pretest score of level of insomnia is 25.55 (SD + 3.37) and the posttest mean score is 15.17 (SD + 4.85) and the mean difference is 10.38. The post mean score (15.17) was lower than the pretest mean score (25.55). The paired 't' value was 22.8, significantly $P=0.001$. ($P < 0.05$) Table 3. Therefore the research hypothesis H_2 that is the mean posttest level of insomnia score is significantly lower than the mean

pretest level of insomnia score was accepted.

The current investigation is upheld by (Rohini and Ezhilarasu, 2015). Directed blended technique research on rest, weariness, and personal satisfaction among patients going through Hemodialysis. Gathering CBT was managed for around 40 to an hour to subjects in exploratory gathering for about a month (twice week by week). Post evaluation was done at about fourteen days, a month and a half, and 10 weeks after the eighth meeting. Rehashed measure ANOVA exhibited the mean distinction for rest, weariness, and QOL as critical between the groups (Yurtkuran *et al.*, 2007).

Comparison between the effectiveness of Pranayama pretest and posttest level of insomnia among patients with Hemodialysis

Chi-Square values were calculated to find out the association between posttest level of fatigue score among patients with Hemodialysis with their demographic variables Table 4. The findings revealed that there was a significant association with demographic variables $P < 0.05$. Therefore the research hypothesis H_3 there was a significant association between posttest level of fatigue among patients with Hemodialysis with their selected demographic variables.

(Yurtkuran *et al.*, 2007) conducted study to evaluate the adequacy of an altered yoga-based exercise program in hemodialysis patients: a randomized controlled examination. The discoveries say Comparison of the gatherings based on rate changes showed measurable noteworthiness for abstract and target factors: torment power ($P = 0.03$), weakness ($P = 0.008$), rest unsettling influence ($P = 0.04$) (Gordon *et al.*, 2013).

Association between the effectiveness of Pranayama posttest level of insomnia among patients with Hemodialysis and their selected demographic variables

The findings revealed that there significant association with demographic variables $P < 0.05$. Therefore the research hypothesis H_4 there was a significant association between the posttest level of insomnia among patients with Hemodialysis with their demographic variables.

CONCLUSIONS

Pranayama reduces the fatigue and insomnia among patients with Hemodialysis. From the result of this study, it was concluded patients with Hemodialysis had a reduction of the score on fatigue and insomnia after the intervention of Pranayama. So, in addition to treatment, Pranayama can be used for managing.

Funding Support

The authors declare that they have no funding support for this study.

Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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