



A study to assess the effectiveness of Aromatherapy via inhalation on the Sleep Quality and Fatigue level among patients undergoing Hemodialysis in Sri Krishna Sevashrama Hospital, Bengaluru.”

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ABSTRACT:

Sleep is a part of natural rhythm of life. Sleep quality is a very common problem and affected many in dialysis patients and it can also potentially predict their morbidity, mortality, quality of life and pattern of medication used. Fatigue is one of the most frequent complaints of dialysis and is associated with impaired health-related quality of life. Dialysis procedures are having the risk and side effects that accompany the treatment influence sleep quality and fatigue. Hemodialysis patients are facing many challenges and the problem due to sleep quality and fatigue. Aromatherapy via Inhalation is an important role in relaxing treatment, inhalation has been proved to be effective in mental exhaustion and burnout and the prevention of fatigue and improved sleep quality. The objectives of present study is to assess the sleep quality and fatigue level among patients undergoing Hemodialysis before aromatherapy and to evaluate the effectiveness of aromatherapy by comparing pre-test and post-test level of sleep quality and fatigue level among patients undergoing Hemodialysis. The research design was adopted for this study was Quasi-Experimental pre-test and post- test design. The sample selected for the study were 60 by using non-probability purposive sampling technique where 30 for Experimental Group and 30 for control Group. Data were collected by using Modified Pittsburgh Sleep Quality Index (PSQI) and Visual Analogue Scale. The mean pre-test scores of sleep quality among experimental group was revealed as 50 percent for average and 92 percent for poor. In control group 33percent for good,52.4percent for average and 86.4for poor.The mean pre-test scores of fatigue level in both experimental group and control group were revealed as, 20 percent for mild,50 percent for moderate and 90 percent for severe. The mean post –test scores of sleep quality in experimental group was revealed as 26.8 for good and 44.4 percent for average. In control group 31.7 percent for good, 53.8 percent for average and 88.1 percent for poor. The mean post –test scores of the fatigue level in experimental group was revealed as 26.3 percent for mild, 47.9 percent for moderate. In control group 20 percent for mild, 50 percent for moderate and 90 percent for severe. The overall mean of post-test scores of sleep quality was less than the mean pretest scores (18.96>6.73) among experimental group and the obtained ‘t’ value 18.33 was greater than the table value at 0.05 level of significance. The overall mean of post-test scores of sleep quality was greater than the mean pre-test score (14.2>13.93) among control group and the obtained ‘t’ value 0.25 was less than the table value at 0.05 level of significance. The overall mean post-test scores of Fatigue level was less than (3.63<8.6) among experimental group and the obtained‘t’ value 25.04 which was greater than the table value 2.05 at 0.05 level of significant and it showed that the Aromatherapy Inhalation Via is effective in reducing Fatigue level among patients undergoing hemodialysis. So, the research hypothesis was accepted. The overall mean of posttest scores of Fatigue level was greater (5> 4.83) among control group and the obtained ‘t’ test value was 0.34 which was less than the table value at 0.05 level of significance.

INTRODUCTION:

Sleep is a time for our body to repair damage caused by stress, ultraviolet rays and other harmful exposures. Our cells produce more protein while we are sleeping. These protein molecules form the building blocks for cells, allowing them to repair damage. Sleep disturbances had been reported by 50-80 percent of haemodialysis patients.

Kidney disease knows no boundaries and affects people of all ages and races. It is found that South Asian origin, including Indian have a higher risk of Chronic Kidney Disease (CKD). Haemodialysis is a process of purifying the waste products and extra fluid which is build up in a person whose kidneys are not functioning properly. Moreover, Fatigue is also a debilitating symptom for adult patients who had end stage disease on hemodialysis and has been associated with lower survival rate. Post dialysis patients often express feeling exhausted or drained soon after dialysis procedure.

Haemodialysis is the most treatment to the individual with Chronic Renal Failure (CKF). Haemodialysis requires regular visit of 3 times in a week for a long term consequently it may develop many complications such as, Low blood pressure, nausea and vomiting, dry and itchy skin, restless leg syndrome, muscle cramping, Poor sleep quality and fatigue.

NEED OF THE STUDY:

The researcher had experiences with many patients who suffered from poor sleep quality and fatigue level after hemodialysis. It is also seen that most of them prefer sleeping pill to get immediate relief from fatigue and improve sleep. Prolong use of sedative is known to have a negative effect on the patient's health. Hence the current study will be conducted to assess the effectiveness use of complementary therapies like aromatherapy via inhalation among patients undergoing hemodialysis .Aromatherapy is used as a inhalation of lavender and rosemary essential oils to improve the health of body, mind, and spirit and it can stimulate areas of limbic system which is a part of brain that plays a role in emotional and physical health to regulate such as heart rate, blood pressure, sleep quality, fatigue level stress breathing, increase circulation and hormone balance.

OBJECTIVES OF THE STUDY

1. Assess the sleep quality and fatigue level among patients undergoing Hemodialysis before aromatherapy.
2. Evaluate the effectiveness of aromatherapy by comparing pre-test and post-test level of sleep quality and fatigue level among patients undergoing Hemodialysis.
3. Associate the pre-test level of sleep quality and fatigue level with selected demographic variables.

HYPOTHESES

H₁:- There is significant increase in sleep quality and decrease fatigue level among patients undergoing Hemodialysis after aromatherapy.

H₂:- There is significant association of the pre- test sleep quality and fatigue level of Hemodialysis patients with selected demographic variables.

CONCEPTUAL FRAMEWORK

Modified Ludwig Von- Bertalanffy's the General System Theory. Conceptual framework presents logically how the researcher view the concepts involved in a study which represents the meaningful relationship among concepts. It is a collection of interrelated concepts that depicts a piece of theory to be examined as the basis from research studies. The conceptual frame work selected for this study was based on General System Theory by Ludwig Von Bertalanffy's.

VARIABLES

Independent variables : In the study independent variable is Aromatherapy via Inhalation

Dependent variables : In study dependent variable is Sleep quality and Fatigue level.

Demographic variables : In this study demographic variable of hemodialysis as age in years, gender, marital status, education, occupation, family income, religion, place of residence, smoking habits, source of information about aromatherapy, family history of chronic kidney disease, history of any co-morbid illness, onset of ESRD, duration of dialysis per session, number of dialysis session per week, duration of haemodialysis treatment.

POPULATION

ACCESSIBLE POPULATION

Population is the entire set group of individual or objects that meet certain criteria for inclusion in the study. In the present study the population comprised of hemodialysis patients.

Sample size

Sample size refers to the number of sampling units included in the study. In the present study size of sample consists of 60 hemodialysis patients suffering reducing sleep quality and increasing fatigue level. The sample was further divided into experimental group (n=30) and control group (n=30)

Sampling technique

Sampling technique is the process of selecting a group of people or other elements with which to conduct a study. For selection of sample of the present study, non-probability purposive sampling technique was used to select the sample for experimental group and control group.

SAMPLING CRITERIA:**INCLUSION CRITERIA:**

1. Patients who are in the age group of 20 -70 years undergoing Hemodialysis.
2. Who are available at the time of the data collection.
3. Who can understand Kannada, English and Hindi

EXCLUSION CRITERIA

1. Who are having Hemodialysis complication like venous hypertension aneurysms, ischemic, prolonged bleeding, and heart failure, etc..
2. Who are allergies to Aromatherapy inhalation Via
3. Who are not willing to participants

DATA COLLECTION INSTRUMENTS

Following instruments were used to collect the data

- Modified Pittsburgh Sleep Quality Index assessment tool; consisting of 7 components to assess the sleep quality.
- Visual analogue scale

DATA COLLECTION PROCEDURE

Data collection is the gathering of information needed to address research problem. The main study consisting of 60 undergoing hemodialysis patients will be divided into two groups: experimental group and control group- each group consisting of 30 undergoing hemodialysis patients. The researcher was explained the purpose of the study and the consent was obtained from the patients who were willing to participate in this present study. In this study it refers to a type of inhalation 98ml of distilled water and 1 ml of lavender oil and 1 ml of rosemary oil were mixed and allow patients to inhale from a hemodialysis unit and it's has been practiced 2 or 3 times in a week at least 4 weeks of dialysis procedure.

RESULTS:**SECTION -II**

This section deals with level of sleep quality and fatigue level among experimental and control groups.

Table 17: Finding related to the pre –test score of sleep quality among experimental and control group.

PRE –TEST SCORES OF SLEEP QUALITY	EXPERIMENTAL GROUP (n=30)				CONTROL GROUP (n=30)			
	Frequency	Mean	Mean%	SD	Frequency	Mean	Mean%	SD
Good sleep quality	-	-	-	-	3	21	33.33	9.89
Average sleep quality	2	10.5	50	4.94	13	11	52.38	38
Poor sleep quality	28	19.32	92	97	14	18.14	86.38	65.37

Table 17: The above table represented pre-test scores of sleep quality among experimental group and control group. In experimental group 28 participants had poor sleep quality with the mean of 19.32 and 2 participants had average sleep quality with the mean of 10.5 whereas in control group 14 participants had poor sleep quality with the mean of 18.14, 13 participants had average sleep quality with the mean of 11 and 3 participants had good sleep quality with the mean of 21.

Table-18: Finding related to the pre –test scores of fatigue level among experimental and control group

Table 18: The above table represented pre-test scores of fatigue level among experimental group and control group. In experimental group 12 participants had mild fatigue with the mean of 2, 9 participants had moderate fatigue with the mean of 5 and 9 participants had severe fatigue with the mean of 9. In control group 11 participants had moderate fatigue with the mean of 5, 10 participants had mild fatigue with the mean of 2 and 9 participants had severe fatigue with the mean of 9.

PRE-TEST SCORE OF FATIGUE LEVEL	EXPERIMENTAL GROUP (n=30)				CONTROL GROUP (n=30)			
	Frequency	Mean	Mean %	SD	Frequency	Mean	Mean %	SD
None	-	-	-	-	-	-	-	-
Mild fatigue	12	2	20	6.63	10	2	20	6
Moderate fatigue	9	5	50	14.04	11	5	50	15.8
Severe fatigue	9	9	90	-	9	9	90	-

Table -19: Finding related to post-test scores of sleep quality among experimental group and control group

POST -TEST SCORES OF SLEEP QUALITY	EXPERIMENTAL GROUP n=30				CONTROL GROUP n=30			
	Frequency	Mean	Mean %	SD	Frequency	Mean	Mean %	SD
Good sleep quality	21	5.61	26.75	25.09	2	6.6	31.74	9.41
Average sleep quality	9	9.33	44.44	26.33	13	11.30	53.80	39.1
Poor sleep quality	-	-	-	-	14	18.5	88.09	66.7

Table 19:The above table represented post-test scores of sleep quality among experimental and control group. In experimental group 21 participants had good sleep quality with the mean of 5.61,9 participants had average sleep quality with the mean of 9.33. In control group 2 participants had good sleep quality with the mean of 6.6,13 participants had average sleep quality with the mean of 11.30and 14 had poor sleep quality with the mean of 18.5.

Table-20: Finding related to post-test scores of Fatigue level among experimental group and control group

POST TEST SCORES OF FATIGUE LEVEL	EXPERIMENTAL GROUP (n=30)				CONTROL GROUP (n=30)			
	Frequency	Mean	Mean %	SD	Frequency	Mean	Mean %	SD
None	-	-	-	-	-	-	-	-
Mild fatigue	16	2.62	26.25%	0.48	12	2	20%	6.63
Moderate fatigue	14	4.78	47.85%	0.78	9	5	50%	14.04
Severe fatigue	-	-	-	-	9	9	90 %	-

Table 20: The above table represented post-test scores of fatigue level among experimental and control group. In experimental group the majority 16 participants had mild fatigue with the mean of 2.62,14 participants had moderate fatigue with the mean of 4.78. In control group 12 participants had mild fatigue with the mean of 2, 9 participants had moderate fatigue with the mean of 5and 9 participants had severe fatigue with the mean of 9.

SECTION -III**Table-21: Findings related comparisons of pre –test and post-test scores level of sleep quality among experimental group by paired “t” test.**

Level of sleep quality among experimental group	Mean	SD	Paired t-test	df	Table value	Inference
Pre-test	18.96	102.14	18.33	29	2.05	S*
Post-test	6.73	2.28				

Table.21:The above table revealed the overall mean pre –test and post-test scores of sleep quality among experimental group. The overall mean post test score 6.73 is less than the overall mean pre-test score 18.96. The mean difference is 12.23 and the data further represented the obtained ‘t’ value 18.33 at df 29 was greater than the table value 2.05 at 0.05 level of significance. This indicated that there were significant differences between pre-test and post –test scores of sleep quality after aromatherapy and data Pittsburgh sleep quality index was effective on sleep quality among patients undergoing hemodialysis. So, the research hypothesis was accepted and null hypothesis is rejected.

Table.22 Comparisons of pre –test and post-test scores level of sleep quality among control group by paired “t” test.

Level of sleep quality among control group	Mean	SD	Paired t-test	df	Table value	Inference
Pre-test	13.93	25.16	0.25	29	2.05	Not significant
Post-test	14.2	76.34				

Table 22:The above table revealed that the overall mean pre –test and post-test scores of sleep quality among control group. The overall mean post test score 14.2 was less than the overall mean pre-test score 13.93. The mean difference is 0.27 and the data further represented the obtained ‘t’ value 0.25 at df 29 was less than the table value 2.05 at 0.05 level of significance. This indicated that there were no differences between pre-test and post –test score of sleep quality after aromatherapy and data Pittsburgh sleep quality index was not effective on sleep quality among patients undergoing hemodialysis.

Table 23: Comparisons of pre –test and post-test scores of Fatigue level among experimental group by paired “t” test.

Level of fatigue level among experimental group	Mean	SD	Paired t-test	df	Table value	Inference
Pre-test	8.6	1.44	25.04	29	2.05	S*
Post-test	3.63	1.1				

Table 23: The above table revealed the overall mean pre –test and post-test scores of Fatigue level among experimental group. The overall mean post test score 3.63 was less than the overall mean pre-test score 8.6. The mean difference was 4.97 and the data further represented the obtained ‘t’ value 25.04 at df 29 was greater than the table value 2.05 at 0.05 level of significance. This indicated that there were differences between pretest and post –test score of Fatigue level after aromatherapy and data Visual Analogue fatigue scale was effective on Fatigue level among patients undergoing hemodialysis. So, the research hypothesis was accepted and null hypothesis was rejected.

Table 24: Comparisons of pre –test and post-test scores of Fatigue level among control group by paired “t” test.

Level of fatigue level among control group	Mean	SD	Paired t- paired	df	Table value	Inference
Pre-test	4.83	25.80	0.34	29	2.05	Not significant
Post-test	5	26.76				

Table -25: Comparison of post –test scores on the sleep quality patients undergoing hemodialysis among experimental group and control group by student ‘T’ test

Level of sleep quality patients among experimental group and control group	Mean	SD	Student T- test	Table value	Inference
Experiment group post test	6.73	2.28	3.73	2.02	S*
Control group post test	14.2	76.34			

Table25: The above table revealed that the experimental group post –test mean on the sleep quality was greater than the control group post-test (14.2>6.73). The data further depicted that the obtained student ‘T’ test value was 3.73 which was greater than the table value 2.02 at 0.05 level. It was revealed that there was a difference between experimental and control group in effectiveness of Aromatherapy. This data supported the effectiveness of Aromatherapy Inhalation Via inducing of sleep quality and reducing fatigue level among patients undergoing hemodialysis. So, the research hypothesis was accepted and null hypothesis was rejected.

Table - 26: Comparison of post –test scores on the Fatigue level patients among experimental group and control group by student ‘T’ test

Level of Fatigue level among experimental group and control group	Mean	SD	Student “T” test	Df	Table value	Inference
Experiment group Post test	2.4	1.1	3.25	58	2.02	Significant
Control group Post test	5	26.76				

SECTION -IV

: This section deals with the association between of sleep quality and fatigue level and selected socio-demographic variables.

ASSOCIATION BETWEEN SLEEP QUALITY AND SELECTED DEMOGRAPHIC VARIABLES AMONG EXPERIMENTAL GROUP.

There was no significant association found between sleep quality among patients undergoing hemodialysis and the variables such as, gender, marital status, education, occupation, family income, religion, place of residence, smoking habits, source of information about aromatherapy ,family history of chronic kidney disease, history of any co-morbid illness, onset of ESRD, duration of dialysis per session, number of dialysis session per week, duration of haemodialysis treatment. Hence the research hypothesis was rejected at 0.05 level of significance and null hypothesis was accepted.

However, the chi square value of age in years ($\chi^2 = 16.04 > 7.82, p > 0.05$) was greater the table value, which indicated that there was a significant association between sleep quality among patients undergoing hemodialysis of age in years. Hence the research hypothesis was accepted at 0.05 level of significance and null hypothesis was rejected.

ASSOCIATION BETWEEN FATIGUE LEVEL AND SELECTED DEMOGRAPHIC VARIABLES AMONG EXPERIMENTAL GROUP

There was no significant association found between Fatigue level among patients undergoing hemodialysis and the variables such as age in years ,gender, marital status, education, occupation, family income, religion, place of residence, smoking habits ,source of information about aromatherapy ,family history of chronic kidney disease, history of any co-morbid illness, onset of ESRD, duration of dialysis per session, number of dialysis session per week, duration of haemodialysis treatment. Hence the research hypothesis was rejected at 0.05 level of significant and null hypothesis was accepted

ASSOCIATION BETWEEN SLEEP QUALITY AND SELECTED DEMOGRAPHIC VARIABLES AMONG CONTROL GROUP

There were no significant association found between sleep quality among patients undergoing hemodialysis and the variables such as age,gender, marital status, education, family income, religion, place of residence, smoking habits, source of information about aromatherapy ,family history of chronic kidney disease, history of any co-morbid illness, onset of ESRD ,number of dialysis session per weeks, duration of haemodialysis treatment. Hence the research hypothesis was rejected at 0.05 level of significant and null hypothesis was accepted. However, there was significant association found between the sleep quality among patients undergoing hemodialysis and demographic variable such as Occupation ($\chi^2 = 12.4 > 7.82, p > 0.05$) duration of dialysis per session, ($\chi^2 = 13.32 > 3.84, p > 0.05$) which indicated that there was a greater than the table value. Hence the research hypothesis was accepted at 0.05 level of significant and null hypothesis was rejected.

ASSOCIATION BETWEEN FATIGUE LEVEL AND SELECTED DEMOGRAPHIC VARIABLES AMONG CONTROL GROUP

There is no significant association found between Fatigue level among patients undergoing hemodialysis and the variables such as,gender, marital status, education, occupation, family income, religion, place of residence, smoking habits, source of information about aromatherapy ,family history of chronic kidney disease, history of any co-morbid illness, onset of ESRD, duration of dialysis per session, number of dialysis session per week, duration of haemodialysis treatment. Hence the research hypothesis was rejected at 0.05 level of significant and null hypothesis was accepted.

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