JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

EFFECT OF BACK MASSAGE THERAPY ON SLEEP DISTURBANCE AND FATIGUE AMONG POST-OPERATIVE PATIENTS

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Abstract

Sleep is a basic human need. It is a universal biological process common to all people. Proper rest and sleep are important to good health. Sleep deprivation is a problem due to hospitalization especially in the ICU. Indeed, it is likely that failure to sleep slows the recovery of patients hospitalized with acute illnesses. Fatigue has been reported by many patients undergoing surgery and is associated with a negative prognosis. Massage therapy may be used to promote muscle relaxation and to reduce pain, stress and anxiety, which help the patients to improve their level of sleep and speed recover. Present study aims to assess the effect of back massage therapy on sleep disturbance and fatigue among post-operative patients at SGRD hospital, Vallah, Sri Amritsar. Pre experimental study design was adopted for this study. A sample of 40 post operative patients was selected using purposive sampling technique. The tool consists of socio-demographic variables, Sleep disturbance short form and fatigue assessment scale was used to collect the data. Back massage therapy was administered to the patients for 3 consecutive days and post-test data was collected. The data was collected was analyzed using descriptive and inferential statistics. Result showed that in pretest majority 27(67.5%) had moderate sleep disturbance and 21(52.5%) had reported extreme fatigue where as in posttest majority 15(37.5%) had moderate sleep disturbance, 13(32.5%) had reported none or slight disturbance and 21(52.5%) had mild fatigue and 11(27.5%) had no fatigue. Findings concluded that back massage therapy was effective in reducing sleep disturbance and fatigue among post-operative patients. Study result suggested that back massage therapy can be used by nurses in post operative units to reduce the fatigue and promoting sleep for patients immediately following surgery.

Keywords: Sleep disturbance, fatigue, post-operative patients

INTRODUCTION

Sleep and rest are human needs essential to all individual physical and physiological wellbeing. About one third of our time is spent in sleeping. The purpose of sleep is a mystery. However it is necessary to health and promote a sense of wellbeing. It is a universal process common to all people. People who are ill frequently require more rest and sleep than usual. Rest restores a person's energy allowing the individual to resume optimum functioning.[1]

Sleep is a naturally recurring state of mind and body characterized by altered consciousness, relatively inhibited sensory activity, inhibition of nearly all voluntary muscles, and reduced interactions with surroundings. Sleep is a basic need of human. Sleep quality is defined as the subjects satisfaction with sleep experience, integrating domains of sleep initiation, sleep maintenance, sleep quantity and refreshment upon awakening. Sleeping poorly after surgery is very common in the days and weeks immediately following surgery. The problem is typically at its worst the first few days after surgery, especially for those patients who are recovering in the hospital or another medical facility rather than in their own home.[2]

Fatigue has been reported by many patients undergoing surgery and is associated with a negative prognosis. The factors associated with postoperative fatigue and its evolution during the postoperative period are unclear. Adequate fatigue measurement instruments are necessary to obtain. Fatigue is a very common symptom in patients with primary brain tumors, with prevalence estimates varying between 39% and 96%. Fatigue is described as a subjective feeling of tiredness and a lack of energy. It is a multidimensional construct, wherein a distinction can be made between physical and mental fatigue. In healthy individuals, fatigue is a normal and adaptive response to physical or mental activities that can be alleviated by periods of sleep or rest.[3]

Massage therapy (MT) is a technique that promotes the manual mobilization of several structures from both muscle and subcutaneous tissue, by applying mechanical force to tissues. This mobilization improves lymph movement and venous return; reduces swelling; and mobilizes muscle fibres, tendons and skin. Thus, massage therapy may be used to promote muscle relaxation and to reduce pain, stress and anxiety, which help the patients to improve their level of sleep and speed recover. In addition, Massage therapy may enhance patient mobility and recovery from surgery, which allows patients to perform daily activities and take part in physiotherapy treatment and rehabilitation.[4]

The use of massage and touch to relieve, relax, cure and improve performance has been utilized in various forms throughout the world and has been an integral component of healing and health care for centuries. Sleep is also disrupted by environmental factors, including noise and bright lights that disrupt the natural light dark rhythm. By controlling excessive noise and lighting, providing non pharmacologic approaches to alleviating anxiety, and promoting sleep, the nurse demonstrates care and compassion. Actions such as turning a piece of noisy equipment away from the patient's ear, lowering a light, massaging a back. Providing back massage and instituting quiet times; both of these actions increase sleep in ICU patients.[5]

Post-operative sleep disturbance, with suppression of rapid eye movement sleep and slow wave sleep followed by a subsequent rebound, seems to be related to the magnitude of trauma and thereby to the surgical stress response. Furthermore, the environment, pain and the administration of analgesics seem to be important factors in the precipitation of sleep abnormalities. Back Massage generally follows after patient's bath. A

backrub acts as a general body conditioner and can relieve muscle tension a Massage therapy the scientific manipulation of the soft tissues of the body, is a healing art, an act of physical caring, and a way of communicating without words.[6]

Massage communicates gentleness and connection, trust and receiving, and peace and alertness. As an adjunct to medical treatment, massage may be helpful in relieving backaches, headaches, muscle spasm and pain, hypertension, swelling and pain from injuries or after surgery. Grand mal epileptic seizures, insomnia, anxiety and depression. It can be a palliative treatment for the comfort of those bedridden people. Even people in deep comas may show improved heart rates when their hands are held. Most newer comprehensive cancer treatment programs offer massage as a standard component of care. Massage can reduce agitation in people with Alzheimer's disease, and it has been used to relieve stress at disaster sites.[7]

Back rub, lasting three to five minutes, offer physiological and mechanical benefits to clients in a variety of settings. A back rub is usually given after the bath. But you may also find that one given in the evening will help clients to relax fall asleep. Massage the back in a slow, rhythmical, and relaxed manner. Tightness through the shoulder and neck muscles from an uncomfortable resting position can be relieved with friction of Petrissage. Gently rubbing the skin over bony areas increases circulation and helps prevent skin breakdown and promote relaxation.[8]

Massage therapy can produce a reaction response that creates a calm state and enhances the ability to rest, qualities that are so essential for healing to occur. "The majority of studies show that back massage induces a physiological or psychological relaxation response and that it is not injurious for critically ill patients with heart disease". Massage therapy is becoming more widely accepted in the medical community as a credible treatment for many types of back pain and insomnia and/or as an adjunct to other medical treatments. Research shows that massage therapy has several potential health benefits for back pain sufferers, including increased blood flow and circulation, which brings needed nutrition to muscles and tissues.[9]

Based on the above reviews and facts the investigator had felt hospitalized patients especially in post-operative period experiences sleep disturbances and fatigue which can be managed well by applying back massage therapy. So the investigator had carried out this study to assess the effect of back massage therapy on sleep disturbance and fatigue among post-operative patients

RESEARCH PROBLEM

A pre-experimental study to assess the effect of back massage therapy on sleep disturbance and fatigue among post-operative patients at SGRD hospital, Vallah, Sri Amritsar.

AIM OF THE STUDY

The aim of a study to assess the effect of back massage therapy on sleep disturbance and fatigue among post-operative patients

OBJECTIVES OF THE STUDY

1. To assess the level of sleep disturbance and fatigue among post-operative patients.
2. To assess the effectiveness of back massage on sleep disturbance and fatigue among post-operative patients.
3. To co-relate level of sleep disturbance and fatigue among post-operative patients.

4. To find out the association between level of sleep disturbance and selected demographic variables.
5. To find out the association between level of fatigue and selected demographic variables.

OPERATIONAL DEFINITION

Back Massage: Back Massage refers to massage on back of the body to induce sleep among post-operative patients. (Each technique repeated for 15 times)

Effleurage: it is a form of massage involving circular stroking movement made with the palm of hand.

Petrissage: It is a massage technique that involves kneading or applied pressure on the muscles of the back.

Friction: It is a massage technique used to release the area that are tight to relax the muscles and pressure applied through fingertips.

Percussion: It is a massage technique of rhythmic percussion movements administered with edge of the hand or cupped hand.

Sleep disturbance: Sleep Disturbance refers to the alterations in the night time sleep among the post-operative patients as measures by Groningen sleep quality scale.

Fatigue: Fatigue refers to the extreme tiredness resulting from physical exertion or illness among the post-operative patients as measured by Fatigue Assessment Scale.

HYPOTHESIS

H1 There will be significant effect of back massage on sleep disturbance and fatigue among post-operative patients.

H2 Their will be significant correlation between sleep disturbance and fatigue among post operative patients.

RESEARCH METHODOLOGY

RESEARCH APPROACH

In present study the quantitative research approach was adopted to assess the effect of back massage therapy on sleep disturbance and fatigue among post-operative patients at SGRD hospital, Vallah, Sri Amritsar.

RESEARCH DESIGN

The pre-experimental research design is used in this study to accomplish the objectives of the study and to evaluate the effect of independent and dependent variable.

Experimental group: O1----------X---------- O2

O1-Pre-test X-Intervention O2-Post-test

RESEARCHSETTING

Research setting is the physical location and condition in which data collection takes place. The present study was conducted at SGRD charitable hospital, Vallah, Sri Amritsar.

VARIABLES UNDER STUDY

Independent variables: Back massage therapy

Dependent variables: Sleep disturbance and fatigue among post-operative patients.

POPULATION

The population of present study was post-operative patients admitted to surgical ward, SGRD hospital, Vallah, Sri Amritsar.

SAMPLE SIZE:

The sample size for the present study was conducted on 40 post-operative patients.

SAMPLING TECHNIQUE

Purposive sampling technique was used to draw sample from target population, after considering inclusion and exclusion criteria.

SAMPLING CRITERIA

The following criteria were used for the selection of samples for the study.

Inclusion criteria: The study includes the post-operative patients

a) Who had reported sleep disturbance and fatigue.
b) Who are willing to participate in the study
c) Who are present at time of data collection
d) Who are consciousness
e) Who are able to change position and co-operate for back massage therapy.

Exclusion criteria: The study excludes the post-operative patients

a) who are not co-operative
b) who are critically ill
c) who has skin diseases in the back
d) who can not change their position.

DESCRIPTION OF TOOL

SECTION A: Socio demographic variables

- Socio demographic data includes age, educational status, occupation, monthly family income, area of residence, type of surgery, duration of hospitalization, experiences sleep disturbance and fatigue.

SECTION B: PROMIS Sleep Disturbance – Adult Short Form.

The DSM-5 Level 2—Sleep Disturbance—Adult measure is the 8-item PROMIS Sleep Disturbance Short Form that assesses the pure domain of sleep disturbance in individuals age 18 and older. Each item asks the patient (or informant) to rate the severity of the patient's sleep disturbance during the past 7 days.

Scoring and Interpretation

Each item on the measure is rated on a 5-point scale (1=never; 2=rarely; 3=sometimes; 4=often; and 5=always) with a range in score from 8 to 40 with higher scores indicating greater severity of sleep disturbance. The raw scores on the 8 items should be summed to obtain a total raw score. Next, the T-score table should be used to identify the T-score associated with the individual's total raw score and the information entered in the T-score row on the measure.

The T-scores are interpreted as follows:

- Less than 55 = None to slight
- 55.0—59.9 = Mild
- 60.0—69.9 = Moderate
- 70 and over = Severe

SECTION C:

The fatigue assessment scale (FAS). It is a 10 item general fatigue questionnaire to assess fatigue. Items (1,2,4,5,10) reflect fatigue and Items (3,6,7,8,9) reflect mental fatigue. The total score ranges from 10-50.

Items (1, 2, 3, 5, 6, 7, 8, 9) – (1-Never, 2-Sometimes, 3-Regularly, 4-Often, 5-Always)

Items (4, 10) – (5-Never, 4-Sometimes, 3-Regularly, 2-Often, 1-Always)

Scoring interpretation:

- FAS Scores (10-21) – No fatigue (Normal)
- FAS Scores (22-50) - Indicates fatigue
- FAS Scores (22-34) – Mild fatigue
- FAS Scores (≥35) – Extreme fatigue

DESCRIPTION OF INTERVENTION

Back massage therapy includes (Effleurage/Stroking, Petrissage/Kneading, Circular Friction,, Tapotment/Rhythmic Tapping and Vibration/Shaking). Apply Talcum powder and perform/repeat each step for 15 times.

RELIABILITY OF TOOL

The reliability for sleep disturbance scale was measured using cronbach's alpha (r=.715).

The reliability for Fatigue assessment scale (FAS) was measured using cronbach's alpha (r=.740).

ETHICAL CONSIDERATIONS:

- Written ethical permission was obtained from ethical committee of Sri Guru Ram Das University of health sciences before conducting the study.
- Subjects were explained about objectives and duration of involvement.
- Written informed consent was taken from each subject of the study.
- Anonymity and confidentiality was maintained during and after data collection.
- Subjects were given full autonomy to withdraw from the study.

ANALYSIS

Table 1: Frequency and percentage distribution of demographic variables in experimental and control group

N=40

S.No	Demographic variables	frequency (f)	percentage (%)
1	Age in years		
	a. 35-40	12	30
	b. 41-45	16	40
	c. 46-50	7	17.5
	d. Above 50	5	12.5
2	Education		
	a. Illiterate	4	10
	b. Primary school	12	30
	c. Secondary school	17	42.5
	d. Graduation	7	17.5

3	Occupation		
	a. Laborer	4	10
	b. Private employee	24	60
	c. Government employee	5	12.5
	d. Business	7	17.5
4	Area of residence		
	a. Urban	17	42.5
	b. Rural	23	57.5
5	Monthly family income (Rs)		
	a. < 5000	7	17.5
	b. 5001-10000	15	37.5
	c. 10001-15000	13	32.5
	d. > 15000	5	12.5
6	Type of surgery		
	a. Laproscopic surgery	13	32.5
	b. Open surgery	27	67.5
7	Duration of hospitalization		
	a. 1-3 days	9	22.5
	b. 4-6 days	17	42.5
	c. 7-10 days	11	27.5
	d. More than 10 days	3	7.5
8	Experienced sleep disturbance		
	a. Yes	32	80
	b. No	8	20
9	Experienced fatigue		
	a. Yes	29	72.5
	b. No	11	27.5
10	Type of anesthesia		
	a. General	22	55
	b. Spinal	18	45

According to their age majority 16(40%) were in 41-45 years followed by 12(30%) were in 35-40 years, 7(17.5%) were in 46-50 years and 5(12.5%) were in above 50 years. Regarding education majority 17(42.5%) had completed secondary school, 12(30%) completed primary school, 7(17.5%) had completed graduation and 4(10%) were illiterate. With regard to occupation majority 24(60%) were working as private employee followed by 7(17.5%) were doing business, 5(12.5%) were working as government employee and 4(10%) were working as laborer. Area of residence majority 23(57.5%) were from rural area and 17(42.5%) were from urban area. Monthly family income revealed that majority 15(37.5%) had Rs.5001-10000, 13(32.5%) had 10001-15000, 7(17.5%) had less than 5000 and 5(12.5%) had above 15000. Type of surgery majority 27(67.5%) had undergone open surgery and 13(32.5%) had undergone laproscopic surgery. Regarding duration of hospitalization majority 17(42.5%) were in hospital for 4-6 days, 11(27.5%) were in hospital for 7-10 days, 9(22.5%) were in hospital for 1-3 days and 3(7.5%) were in hospital for more than 10 days. Majority 32(80%) had experienced sleep disturbance and 29(72.5%) had experienced fatigue. Regarding type of anesthesia majority 22(55%) had undergone general anesthesia and 18(45%) had undergone spinal anesthesia.

Table 2: Pre-test and post-test level of sleep disturbance among post-operative patients

N=40

Level of sleep disturbance	Pre-test		Post-test	
	f	%	f	%
None/Slight	--	--	13	32.5
Mild	3	7.5	10	25
Moderate	27	67.5	15	37.5
Severe	10	25	2	5
Mean±SD	6.385±5.765		5.844±6.696	
t value	3.667			
df	39			
p value	0.001*			

***P≤0.05 level of significance NS-Non significance**

Table 2 depicts in pretest majority 27(67.5%) had reported moderate sleep disturbance, 10(25%) had reported severe sleep disturbance and only 3(7.5%) had mild sleep disturbance whereas in posttest majority 15(37.5%) had moderate sleep disturbance, 13(32.5%) had reported none or slight disturbance, 10(25%) had mild sleep disturbance and only 2 (5%) had severe sleep disturbance. Pre-test mean sleep disturbance score was 6.385±5.765 and in post-test was 5.844±6.696 with mean difference of 0.54. Mean pretest and posttest scores was compared and tested using paired t test (t=3.667, p=0.001) was statistically significant. Results showed that back massage therapy was effective in reducing sleep disturbance among post-operative patients.

Table 3: Pre-test and post-test level of fatigue among post-operative patients

N=40

Level of fatigue	Pre-test		Post-test	
	f	%	f	%
No fatigue	--	--	11	27.5
Mild	19	47.5	21	52.5
Extreme	21	52.5	8	20
Mean±SD	33.25±6.033		26.67±6.919	
t value	5.223			
df	39			
p value	0.001*			

***P≤0.05 level of significance NS-Non significance**

Table 3 depicts that in pretest majority 21(52.5%) had reported extreme fatigue and 19(47.5%) had mild fatigue whereas in posttest majority 21(52.5%) had mild fatigue, 11(27.5%) had no fatigue and 8(20%) had extreme fatigue. Pre-test mean fatigue score was 33.25±6.033 and in post-test was 26.67±6.919 with mean difference of 6.58. Mean pretest and posttest scores was compared and tested using paired t test (t=5.223, p=0.001) was

statistically significant. Results showed that back massage therapy was effective in reducing fatigue among post-operative patients.

Table 4: Correlation between sleep disturbance and fatigue among post-operative patients.

N=40

Correlation	r value	p value
Pre-test (sleep disturbance and fatigue)	0.143	0.380^{NS}
Post-test (sleep disturbance and fatigue)	0.032	0.846^{NS}

***P<0.05 level of significance NS-Non significance**

Table 4 depicts Karl pearson correlation was performed revealed that in pre-test (r=0.143, p=0.380) and post-test (r=0.032, p=0.846) indicates negative correlation between sleep disturbance and fatigue among post-operative patients and was found to be non significant.

Table 5: Association between pre-test level of sleep disturbance among post -operative patients with demographic variables

N=40

S.No	Demographic variables	Mean	SD	F/t value	p value
1	Age in years				
	a. 35-40	6.59	4.31		
	b. 41-45	6.22	5.30	F=4.916	0.006*
	c. 46-50	6.80	6.61		
	d. Above 50	5.81	2.71		
2	Education				
	a. Illiterate	6.51	7.39		
	b. Primary school	6.22	6.25	F=0.559	0.646^{NS}
	c. Secondary school	6.39	5.67		
	d. Graduation	6.56	4.62		
3	Occupation				
	a. Laborer	6.29	2.35		
	b. Private employee	6.25	5.91	F=1.519	0.226NS
	c. Government employee	6.57	5.56		
	d. Business	6.73	5.83		
4	Area of residence				
	a. Urban	6.52	6.21	T=1.284	0.207^{NS}
	b. Rural	6.28	5.32		

5	Monthly family income (Rs)				
	a. < 5000	6.40	6.81		
	b. 5001-10000	6.39	5.16	F=0.025	0.994^{NS}
	c. 10001-15000	6.35	6.05		
	d. > 15000	6.42	7.08		
6	Type of surgery				
	a. Laproscopic surgery	6.47	5.80	t=0.713	0.480^{NS}
	b. Open surgery	6.33	5.83		
7	Duration of hospitalization				
	a. 1-3 days	6.38	6.19		
	b. 4-6 days	6.15	5.15	F=2.266	0.097^{NS}
	c. 7-10 days	6.27	5.66		
	d. More than 10 days	6.80	4.37		
8	Experienced sleep disturbance				
	a. Ye	6.37	6.12	t=0.210	0.835^{NS}
	b. No	6.42	4.34		
9	Experienced fatigue				
	a. Yes	6.33	5.77	t=0.823	0.416^{NS}
	b. No	6.50	5.83		
10	Type of anesthesia				
	a. General	6.25	5.85	t=1.554	0.128^{NS}
	b. Spinal	6.53	5.42		

***P<0.05 level of significance NS-Non significance**

Table 5 depicts the association between pre-test level of sleep disturbance with demographic variables revealed that age of post-operative patients was found significant association with pretest sleep disturbance at p<0.05 but education, occupation area of residence, monthly family income, type of surgery, duration of hospitalization, experienced sleep disturbance, experienced fatigue and type of anesthesia were non significant.

Table 6: Association between pre-test level of fatigue among post -operative patients with demographic variables

N=40

S.No	Demographic variables	Mean	SD	F/t value	p value
1	Age in years				
	a. 35-40	35.42	4.60		
	b. 41-45	31.88	7.07	F=0.793	0.506^{NS}
	c. 46-50	33.0	6.08		

	d. Above 50	32.80	5.63		
2	Education				
	a. Illiterate	31.75	4.34		
	b. Primary school	34.92	5.63	F=0.616	0.609^{NS}
	c. Secondary school	22.24	6.18		
	d. Graduation	31.29	7.45		
3	Occupation				
	a. Laborer	31.25	6.55		
	b. Private employee	32.12	5.95	F=1.959	0.138^{NS}
	c. Government employee	38.60	2.88		
	d. Business	34.43	6.37		
4	Area of residence				
	a. Urban	31.59	7.09	t=1.523	0.136^{NS}
	b. Rural	34.48	4.91		
5	Monthly family income (Rs)				
	a. < 5000	31.43	5.94		
	b. 5001-10000	31.27	6.53	F=3.799	0.018*
	c. 10001-15000	33.77	4.71		
	d. > 15000	40.40	0.89		
6	Type of surgery				
	a. Laproscopic surgery	33.92	6.35	t=0.485	0.631^{NS}
	b. Open surgery	32.93	5.96		
7	Duration of hospitalization				
	a. 1-3 days	34.11	6.23		
	b. 4-6 days	33.88	5.67	F=0.433	0.731^{NS}
	c. 7-10 days	31.45	7.14		
	d. More than 10 days	33.67	4.04		
8	Experienced sleep disturbance				
	a. Yes	33.31	6.30	t=0.129	0.898^{NS}
	b. No	33.0	5.28		
9	Experienced fatigue				
	a. Yes	32.52	5.591	t=1.256	0.217^{NS}
	b. No	35.18	6.983		
10	Type of anesthesia				
	a. General	31.95	6.37	t=1.527	0.135^{NS}
	b. Spinal	34.83	5.33		

***P<0.05 level of significance NS-Non significance**

Table 6 depicts the association between pre-test level of fatigue with demographic variables revealed that monthly family income of post-operative patients was found significant association with pretest fatigue at $p<0.05$ but age, education, occupation area of residence, type of surgery, duration of hospitalization, experienced sleep disturbance, experienced fatigue and type of anesthesia were non-significant.

DISCUSSION

Sleep disturbance and fatigue are common among post-operative patients. Present study results showed that in pretest majority 27(67.5%) had reported moderate sleep disturbance, 10(25%) had reported severe sleep disturbance and only 3(7.5%) had mild sleep disturbance and majority 21(52.5%) had reported extreme fatigue and 19(47.5%) had mild fatigue. Posttest result revealed that majority 15(37.5%) had moderate sleep disturbance, 13(32.5%) had reported none or slight disturbance, 10(25%) had mild sleep disturbance and only 2 (5%) had severe sleep disturbance. Pre-test mean sleep disturbance score was 6.385±5.765 and in post-test was 5.844±6.696 with mean difference of 0.54. Mean pretest and posttest scores was compared and tested using paired t test ($t=3.667$, $p=0.001$) was statistically significant. Study was supported by **Rania Mahmoud Abdel Ghani, Amel Shaaban Elmonem (2018)[10]** revealed that there were statistical significant differences between the study and the control groups related to levels of the post-operative cesarean section pain and fatigue after olive oil massage ($p \leq 0.05$). Further, there were statistical significance differences between both groups related to mean of total sleep disturbance ($t=-12.07$, $p\leq 0.0001$) and total sleep effectiveness ($t=15.77$, $p\leq 0.0001$).The study concluded that Olive oil massage may act as positive intervention in managing the post-operative cesarean pain and sleep disturbance.

In posttest majority 21(52.5%) had mild fatigue, 11(27.5%) had no fatigue and 8(20%) had extreme fatigue. Pre-test mean fatigue score was 33.25±6.033 and in post-test was 26.67±6.919 with mean difference of 6.58. Mean pretest and posttest scores was compared and tested using paired t test ($t=5.223$, $p=0.001$) was statistically significant. Results showed that back massage therapy was effective in reducing sleep disturbance fatigue among post-operative patients. Results was similar carried by **Kanuma Shanmugam (2015)[11]** revealed that back massage was effective in reducing fatigue among post operative patients. Study findings was congruent with **Flavia Maria et al. (2017)[12]** revealed that massage therapy is an effective technique for improving patient recovery from cardiopulmonary artery bypass graft surgery because it reduces fatigue and improves sleep. In present study age of post-operative patients was found significant association with pretest sleep disturbance at $p<0.05$. Monthly family income of post-operative patients was found significant association with pretest fatigue at $p<0.05$. Study was supported by **Jasmine Joys, Stella Suguna Kumari (2015)[13]** stated that age of post-operative patients was found association with sleep quality.

CONCLUSION:

The findings of the study revealed that in pre-test majority 27(67.5%) had reported moderate sleep disturbance and 21(52.5%) had reported extreme fatigue where as in post-test 15(37.5%) had moderate sleep disturbance 13(32.5%) had reported none or slight disturbance and 21(52.5%) had mild fatigue and 11(27.5%) had no fatigue. The study concluded that back massage therapy was effective in reducing fatigue and improves sleep among post-operative patients. Study findings suggested that back massage therapy can be used by nurses in post operative units to reduce the fatigue and promoting sleep for patients immediately following surgery.

NURSING IMPLICATIONS

The findings of this study can be utilized in all domains of nursing i.e. nursing practice, nursing education, nursing research and nursing administration, the implications are:

Nursing practice

- The present study would help the nurses to assess level of sleep disturbance and fatigue among post operative patients.
- Nurses can practice back massage therapy as a evidenced based care for the patients in post operative units to reduce fatigue and promote sleep.
- Back massage therapy is a non pharmacologic intervention practiced by the nurses and can provide nursing care to quality sleep among post operative patients and other hospitalized patients.

Nursing education

- Nursing students should learn to assess level of sleep disturbance and fatigue among post operative patients.
- In service education programme should be conducted for nurses and help them to gain knowledge on nursing care of post operative patients.
- Provide exposure to nursing students for various non-pharmacological measures such as back massage therapy for patients with sleep disturbance and fatigue.
- Nurse educator can encourage the students to make new ideas to reduce fatigue and improve sleep quality among hospitalized and post operative patients.
- Periodic continuing education programmes can be arranged regarding non-pharmacological measures and other therapies to update nursing profession about its importance in reducing fatigue and promoting sleep.

Nursing administration

- The nurse administrator should plan for an in-service education and training programmes for nursing personnel working at post operative units
- The nurse administrator should plan for arranging seminar and workshops to educate staff nurses regarding back massage therapy and its effect on reducing fatigue and promoting sleep.
- Nurse administrator should implement back massage therapy as a non-pharmacological intervention in clinical practice as a care for patients with fatigue and sleep disturbance.

Nursing research

- Nursing research helps the nursing personnel to apply evidence-based practices to improve the quality of care in post operative patients.
- This study motivates nursing personnel to do further studies related to this field.
- This study gives way for further study on other therapies to reduce fatigue and sleep among post operative patients.

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