Research Article

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A Study to Evaluate the Effectiveness of Therapeutic Back Massage on The Quality Of Sleep Among The Patients With CABG In A Selected Hospitals Of Rajkot.

Prof. Chinju Verghese Kannanaickal B

Professor cum HOD Medical Surgical department, SMT Mital Y Patel Mahila Nursing College Atkot-Gujarat.

Corresponding Author:
Prof. Chinju Verghese Kannanaickal B
Professor cum HOD Medical Surgical department, SMT Mital Y Patel Mahila Nursing College Atkot-Gujarat.
E-mail: chinju.verghese@gmail.com

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ABSTRACT:

Background and Objectives: Sleep is essential for good health and recovery from illness. Any illness that causes pain, physical discomfort, and depression can result in sleep disturbances. There are several measures like Massage therapy, Music therapy, pharmacotherapy, bright light therapy and yoga's etc. to treat sleeplessness of which therapeutic back massage is considered to be effective methods to induce sleep among patients with CABG. Back Massage release muscle tension and improve balance & coordination, results in more restful sleep and lessen the need for medication. Inadequate sleep causes fatigue, irritability and can cause inability to cope with the stressors. The accessible population for the study was selected from the Patients with CABG admitted in KDP Hospital, Atkot and Sreeram Hospital Gondal. This population was selected by purposive sampling technique. The total samples under the study were 30 Patients with CABG. In this study data collection was made through structured questionnaire schedule before and after administering the therapeutic back massage which was designed to evaluate the effectiveness of therapeutic back massage on quality of sleep among patients with CABG. Data was analyzed and interpreted by applying statistical methods. Findings of study revealed that, the average Pre-test sleep pattern score was 39.4% and 71.2% in Post-test sleep pattern score obtained by using the St. Mary's Hospital Structured Questionnaire. However, an enhancement of sleep pattern in terms of St.Mary's Hospital Structured sleep assessment Questionnaire was found to be 31.8% significant at 5% level of Significance. An average Pre-test sleep pattern score was 81.3% and 55% in Post-test sleep pattern score obtained by using the Groningen sleep quality scale. However, an enhancement of sleep pattern in terms of Groningen sleep quality scale score was found to be 26.3% significant at 5% level of Significance. This percent of gain is the net benefit of this study, which indicates the effectiveness of therapeutic back massage. The overall findings of the study clearly showed that therapeutic back massage is an effective method to reduce the sleep disturbances during the post operative periods among the patients with Coronary Artery Bypass Graft.

KEYWORDS: CABG, Back Massage

1. INTRODUCTION

Basic human needs, such as rest and sleep, are necessary for everyone's physical and mental health. We sleep for around one-third of our lives. Sleep has no clear purpose, but it is vital to health and overall wellbeing.[1]

Sympathetic activity declines while we sleep, while parasympathetic activity may rise as hormone shifts support anabolic activities. For brain functions like learning, reasoning, and emotional regulation to continue, sleep

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with rapid eye movement (REM) may be particularly crucial. With the exception of the brain, the majority of the body seems to use sleep as an energy-saving strategy.[2]

Rest is crucial for aiding in the recuperation of hospitalized people. It is often known that patients suffering from acute illnesses suffer greatly from sleep disturbances, and that these disruptions may have long-term consequences for the health of the patient and their morbidity. Many studies, particularly in the context of intensive care, have shown that sleep disturbance is one of the main sources of stress for critically sick patients.[3]

Patients who have had coronary artery bypass graft (CABG) surgery have indicated that nocturia, discomfort from the incision, and trouble finding a comfortable position are the main causes of sleep disruptions in these patients. The method of achieving comfort, which is still fundamental to nursing, is based on the patient's need to cope with their disease or damage. One of the most crucial aspects of providing patients with care is recognizing and correcting sleep pattern disturbances.[4]

Patients who have undergone cardiopulmonary artery bypass graft surgery frequently experience poor quality sleep. Massage therapy may help with pain, stress, anxiety, and restless nights[5].

The hands express a language that the heart can comprehend touch. Together, intention and touch establish the structure and circumstances necessary for healing. Illness and hospital admissions can have a significant negative impact on a person's physical and emotional health. In addition to pharmaceutical therapy and conventional care, a nonpharmacological intervention is necessary for all of these discomforts. Thus, it is essential that the nurses adopt complementary and alternative holistic practices such as guided imagery, massage treatment, yoga, meditation, music therapy, and aromatherapy. Illness and hospital stays are the main sources of stress that cause physiological and psychological disequilibrium in people; effleurage back massages calm the body and mind, maintaining equilibrium[6].

NEED FOR THE STUDY

Using the saphenous veins, mammary artery, or radial artery as conduits or replacement vessels, a blockage in one or more of the coronary arteries is bypassed during a coronary artery bypass graft procedure. Prior to coronary angiography surgery, the specific location of lesions and areas of constriction inside the coronary arteries is determined. One of the most frequently performed major surgeries in the United States in 2004 was coronary artery bypass graft (CABG), with 427,000 surgeries completed, according to the American Heart Association.

Approximately 150 000 patients a year in Sweden visit hospital emergency rooms due to symptoms of coronary artery disease (CAD). This represents one in five patients. The coronary care units admit ninety thousand patients. Of these about one third have a myocardial infarction (MI) and one third an impending MI. Two thirds of the patients are men.[8]

A small percentage of CAD patients have complained of sleep problems. Compared to people with angina pectoris, this is higher than individuals who have had prior MI.9. Prior to their MI, 2/5 of the patients reported having sleeplessness, and 27% to 66% of patients who were about to have heart surgery also experienced this. Even though heart surgery improved sleep, a substantial percentage of people still didn't get enough sleep a year later.[10]

STATEMENT OF THE PROBLEM

“A study to evaluate the effectiveness of therapeutic back massage on quality of sleep among patients with CABG in selected hospitals in Rajkot.”

OBJECTIVES OF THE STUDY

- To assess the Quality of sleep among patients with CABG.
- To evaluate the effectiveness of back massage on inducing sleep among patients with CABG.
- To find out the association between sleep pattern of Patients with CABG and their selected demographic variables.

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HYPOTHESIS

H1-: There will be significant difference between the qualities of sleep among patients with CABG and their selected demographic variables.

H2-: There will be significant association between the back massage and sleep pattern.

REVIEW OF LITTERATURE

A review of the literature of hospital sleep, with a focus on ICU patient sleep, was done by A. Nicolás. Intensive care unit patients' ability to sleep through the night is a critical component of the health or illness process since it affects how well they recover. The study involved the recruitment of 104 surgical patients. Patients subjectively measured their felt degree of sleep using the five-item visual analogue Richards-Campbell Sleep Questionnaire (range 0–100 mm). The nursing records also included information on demographics, nursing care provided during the night, the usage of particular pharmaceutical treatments, and the observation of patients sleeping by nurses. The study involved the recruitment of 104 surgical patients. Patients subjectively measured their felt degree of sleep using the five-item visual analogue Richards-Campbell Sleep Questionnaire (range 0–100 mm). The nursing records also included information on demographics, nursing care provided during the night, the usage of particular pharmaceutical treatments, and the observation of patients sleeping by nurses. He came to the conclusion that surgical patients' impressions of their ICU sleep indicate that it is insufficient. Although there is some overlap between nurses' and patients' views of sleep, we have also discovered that nurses often overestimate patients' sleep.

An early investigation on the objective and subjective aspects of sleep following coronary artery bypass graft surgery was carried out by Yilmaz H. and Iskesen I. of the Department of Neurology at Celal Bayar University School of Medicine in Manisa, Turkey. This study looked at how individuals who had coronary artery bypass graft surgery (CABG) changed in their sleep characteristics using objective metrics like actigraphic sleep analysis as well as subjective measures. An examination was conducted on 45 individuals who had CABG procedures but did not have any sleep disturbances. They were assessed at the start of the examination and on the fifth day after surgery using both subjective and objective sleep metrics. Additionally assessed were forty healthy individuals who did not have the procedure. The postoperative group's Pittsburgh Index and Epworth values were much greater than those of the preoperative and control groups, although their Maintenance of Wakefulness Test durations were significantly shorter. The postoperative group's values for sleep efficiency were significantly lower than those of the preoperative and control groups, although they were significantly higher for sleep latency, napping episodes, total napping times, and fragmentation index. The transitory impairment of circulation in the brain stem and hypothalamus, which regulate sleep and wakefulness, may be the reason for insomnia following CABG surgery, they concluded. It has been suggested that the improvement in circulation in these centres a few months following surgery aids in the recovery of sleep regulation, hence causing sleep problems to cease.

METHODOLOGY

Research Design: One group pre-test post-test design is used

Sample: A sample consists of Patients with CABG Admitted in the KDP hospital Atkot and Sreeram hospital Gondal.

Sample Size: 30 CABG patients made up the sample.

Sampling Techniques: In this study, purposive sampling technique is used.

Description of Tool

The tool consists of structured questionnaire schedule. It is divided into 3 parts; they are as follows

Part I: This part of the tool consists of questions related to demographic data consists of 10 items.

Part II: This part of the tool consists of St. Mary’s Hospital Sleep questionnaire for the patients with CABG. It consists of 7 items, and these are multiple choice questions that help in assessing the Quality of sleep among the patients with CABG.

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Part III: This part of the tool consists of Groningen Sleep quality scale for the patients with CABG. It consists of 15 items, and these are multiple choice questions that help in assessing the Quality of sleep among the patients with CABG.

ANALYSIS

Presentation of Data

In order to do tabulation and statistical processing, the data was first entered into a master sheet. Using both descriptive and inferential statistics, the data was collated, examined, and interpreted to determine the link. The following headings indicate how the data is displayed.

Section A: Demographic characteristics of the CABG Patient.

Section B: Quality of sleep among patients with CABG.

Section C: Effectiveness of back massage on inducing sleep among patients with CABG.

Section D: Association between sleep pattern of Patients with CABG with their selected demographic variables.

Section A: Demographic characteristics of the CABG Patient.

Most of samples, 46.7% samples were the age group of 41- 50 years, followed by 43.3% samples belongs to 51-60 years and 10% samples belongs to above 60 years of age. Majority of the 83.3% respondents were males as compared to 16.7% of female respondents.

Majority 56.7% up to secondary education. 26.7% were under graduates and 10 % of the samples have studied up to primary school, and 6.7% of the samples had post graduate education. Majority 90% 0f the samples were employed and 10% of the samples were unemployed. Majority 86.7% samples were belonging to nuclear family and 13.3% samples belongs to joint family.

Majority 50% of the samples having an income of below 10000 rupees per month, 36.7% of the samples having an income in between 10000 to 20000 rupees per month and the remaining 13.3% of the samples having an income of 20000 rupees and above per month. Majority 93.3% of samples belongs to Hindu religion and 6.7% of samples were belongs Muslim religion.

Majority 46.7% samples not having any personal habits, 36.7% samples were using tobacco, and the remaining 16.7% samples were using alcohol. Majority 63.3% samples were having coronary artery disease from 1-6 months, 23.3% samples were having coronary artery disease from 6-12 months, 6.7% samples were suffering from coronary artery illness below one month and 6.7% sample were having coronary artery disease from 1 year and above.

Section B: Quality of sleep among patients with CABG.

OVERALL PRETEST St. MARY'S HOSPITAL STRUCTURED SLEEP QUESTIONNAIRE SCORE

	No. of Patients	Range	Mean ± SD	Mean %
Overall score	30	7 -37	14.60 ± 1.65	39.4%

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The shows the pretest overall percentage of St. Mary's hospital structured sleep questionnaire score. The overall samples mean & standard deviation is 14.60± 1.65 with a mean percentage of 39.4%. The result shows that the overall samples percentage of quality of sleep before administering Back massage is 39.4%.

OVERALL PRETEST GRONINGEN SLEEP QUALITY SCALE SCORE

	No. of Patients	Min –Max score	Mean ± SD	Mean %
Overall score	30	0 -14	11.38 ± 1.16	81.3%

The shows the pretest overall percentage of Groningen sleep quality scale score. The overall samples mean & standard deviation is11.38 ± 1.16 with a mean percentage of 81.3%. The result shows that the overall samples percentage of quality of sleep before administering Back massage is 81.3%.

OVERALL POSTTEST ST MARY'S HOSPITAL STRUCTURED SLEEP QUESTIONNAIRE SCORE

	No. of Patients	Min –Max score	Mean ± SD	Mean %
Overall score	30	7 -37	26.43 ± 1.87	71.2%

The shows the posttest overall percentage of St. Mary's hospital structured sleep questionnaire score. The overall samples mean & standard deviation is26.43 ± 1.87 with a mean percentage of 71.2%. The result shows that the overall samples percentage of quality of sleep after administering therapeutic Back massage is 71.2%.

OVERALL POSTTEST GRONINGEN SLEEP QUALITY SCALE SCORE

	No. of Patients	Min –Max score	Mean ± SD	%
Overall score	30	0 -14	7.70 ± 1.32	55.0%

The shows the post test overall percentage of Groningen sleep quality scale score The over all samples mean & standard deviation is 7.70 ± 1.32 with a mean percentage of 55%. The result shows that the overall samples percentage of quality of sleep after administering Back massage is 55%.

Section C: Effectiveness of back massage on inducing sleep among patients with CABG.

EFFECTIVENESS PRETEST AND POSTTEST SCORE (St. Mary's hospital structured sleep questionnaire score)

	No. of PATIENTS	Pretest Mean±SD	Posttest Mean±SD	Enhancement	Student paired t-test

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Overall Score	30	14.60± 1.65	26.43 ± 1.87	11.83	t=23.60

* significant at P≤0.05 t(0.05, 2df) = 3.18

This illustrates the difference between the patients with CABG's overall effectiveness of therapeutic back massage and their sleep quality before and after the massage. The posttest score was 26.43 with an enhancement of 11.83, while the pretest score was 14.6 overall. The mean difference between the pretest and posttest sleep pattern scores is determined by running a student paired "t" test. The pretest and posttest sleep pattern scores differed significantly, as the student's paired "t" test demonstrated. (t = 23.6, significance level <0.05)

EFFECTIVENESS OF PRETEST AND POSTTEST SCORE (Groningen sleep quality)

	No. of PATIENTS	Pretest Mean±SD	Posttest Mean±SD	Enhancemen t	Student paired t-test
Overall Score	30	11.38± 1.16	7.70 ± 1.32	3.68	t=11.16

* significant at P≤0.05 t(0.05, 2df) = 3.18

This illustrates how patients with CABG's overall success in improving their sleep quality before and after receiving therapeutic back massages compares. The overall pretest score was 11.38 and post test score 7.70 was with an enhancement of 3.68. The pretest and posttest sleep pattern scores are subjected to student's paired 't' test to find out the mean difference. The student's paired 't' test revealed the significant difference between pretest and posttest sleep pattern score. (t = 11.16, P<0.05)

Section D: Association between sleep patterns of Patients with CABG with their selected demographic variables

ST MARY'S HOSPITAL STRUCTURED SLEEP QUESTIONNAIRE

		Posttest					Pearson Chi-square test /Yates corrected Chi-square test/ Fishers exact test
		Moderate		Good			
		n	%	n	%	n	
Age	41 -50 yrs	7	50.0%	7	50.0%	14	
	>50 yrs	15	93.8%	1	6.2%	16	$\chi2$=7.31*P=0.04
How long do you have CAD	<6 months	14	63.6%	8	36.4%	22	
	>6 months	8	100.%	0	0.0%	8	$\chi2$=3.97 *P=0.03
Sex	Male	18	72.0%	7	28.0%	25	$\chi2$=0.00 P=1.00
	Female	4	80.0%	1	20.0%	5	
Education	Primary/Secondary	13	65.0%	7	35.0%	20	$\chi2$=1.04 P=0.31
	UG/PG	9	90.0%	1	10.0%	10	
Religion	Hindu	21	75.0%	7	25.0%	28	$\chi2$=0.00 P=1.00
	Muslim	1	50.0%	1	50.0%	2	

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Occupation	Unemployed	2	66.7%	1	33.3%	3	$\chi 2$=0.00 P=1.00
	Employed	20	74.1%	7	25.9%	27	
Monthly income	Rs.1100-3000	11	73.3%	4	26.7%	15	$\chi 2$=0.00 P=1.00
	>Rs.3000	11	73.3%	4	26.7%	15	
Personal habits	Nil	9	64.3%	5	35.7%	14	$\chi 2$=0.40 P=0.53
	Use of tobacco / alcohol	13	81.3%	3	18.8%	16	

Type of family	Nuclear family	20	76.9%	6	23.1%	26	$\chi 2$=1.28 P=0.26
	Joint family	2	50.0%	2	50.0%	4	

* Significant at P<0.05 ** Highly significant at P<0.01 Very high significant at P<0.001

GRONINGEN SLEEP QUALITY SCALE

Age - Among 14 samples in the age group 41 -50 yrs; 13(92.8%) had moderate quality of sleep and 1(7.2%) had good quality of sleep. Further, among 16 samples in the age group >50 yrs; 10(62.8%) had moderate quality of sleep and 16(37.5%) had good quality of sleep. Hence the value of P is found to be significant at <0.05. It indicates that Age significantly associated with posttest score of Groningen sleep quality scale.

Duration of Coronary artery Disease – Among 22 samples in Duration of CAD <6 months; 20(90.9%) had moderate quality of sleep and 2(9.1%) had good quality of sleep. Further, among 8 samples in Duration of CAD >6 months;02 (33.3%) had moderate quality of sleep and 06(66.7%) had good quality of sleep. Hence the value of P is found to be significant at <0.05. It indicates that Duration of CAD significantly associated with posttest score of Groningen sleep quality scale.

IMPLICATIONS OF THE STUDY

The study's conclusions have an impact on nursing practice, administration, and research, among other aspects of the profession.

Nursing Education

The majority of independent roles or alternative health care systems are what nursing looks forward to in the twenty-first century. The treatment of sleep disturbances in patients with CABG should involve several therapies, such as back massage therapy, as part of the nursing curriculum.

Nursing Administration

As a Nurse Administrator in various hospital wards, she was able to take all the necessary steps to create a comfortable sleeping environment. She ought to incorporate different massage treatment approaches as well as sleep hygiene techniques into programs for in-service instruction. She might carry out and promote a number of studies on more advanced back massage techniques such as therapies to lessen patients' sleep issues who have CABG.

Nursing Practice

Nursing policy and constitution cover this type of non-interventional therapy, which has numerous implications on human life and health. Findings from this study have strengthened the goal of the nursing profession, which currently stands at a crossroads in the health care system, to become more independent in both education and service. In addition to recording a sleep history, nurses working in hospital wards should observe patients and ask about causes that disrupt their sleep, as well as the quantity and quality of their sleep. Patients' medical records ought to have a sleep scale chart attached. Instead, then treating patients with insomnia solely with medications, sleep-promoting strategies like massage and sleep hygiene approaches should be used. Studies of this kind could provide windows into the emotional lives of patients, enabling the nursing profession to better understand their

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clients and provide the best care possible. The use of medical resources, labor costs, financial investment, materials needed, administration technique, and time invested all contribute to the economics of this therapy.

Nursing Research

The prevalence of sleep disturbance in hospitalized patients makes nursing research in the areas of sleep problems in patients with CABG and non-pharmacological nursing therapies such back massage extremely necessary. Since getting more sleep enhances alertness during the day, raising awareness of these issues may be helpful. Only by conducting research in this area is it feasible. The study has demonstrated how beneficial back massages are for improving the quality of sleep that CABG patients get. It is possible to choose and investigate additional nonpharmacological treatments for sleep disturbances.

LIMITATIONS OF THE STUDY

1. Only CABG patients who agree to take part in the trial are eligible.

2. It is only available to CABG patients.

3. The trial is further restricted to patients with CABG who are hospitalized to Sreeram Hospital in Gondal and KDP Hospital in Atkot.

4. The planned interview schedule is the only method used to acquire the data, which limits the amount of information that can be gleaned from the responder.

5. The accuracy of the data may be hampered by the investigator's potential to have overlooked certain observations while monitoring other subjects.

6. There was a 30-person sample size restriction.

SUGGESTIONS

a) Hospital ward nurses should evaluate each patient's sleep pattern by obtaining a sleep history, observing the patient, and asking about the quantity and quality of their sleep as well as any variables that may interfere with their ability to fall asleep at night.

b) In-service education programs for nurse administrators should cover a variety of massage therapy and sleep hygiene treatments.

c) Content on various therapies, such as back massage therapy, to treat sleep disturbances among patients with CABG should be included in nursing curricula.

RECOMMENDATIONS

In light of the results of this investigation, the following suggestions were proposed:

1) With a control group, the study can be conducted again with a larger sample size.

2) Comparison research comparing several forms of therapy to massage techniques to see which one is most successful at inducing sleep

3) Follow-up research may be carried out to assess how well therapeutic back massages benefit patients with CABG in terms of their sleep quality.

4) The creation of standardized instruments for measuring sleep.

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