



EFFECTIVENESS OF FOOT MASSAGE ON SLEEP QUALITY AMONG PATIENTS WITH CARDIOVASCULAR DISEASE

Cardiology

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ABSTRACT

Background:- Sleep serves to repair and restore the body as well as increasing brain function, Now Sleep disorder is a common problem in cardiac patients. Massage believed to come out from sleep problem foot reflexology is an ancient medicinal practice that serve as a form of alternative of medicine.

Objectives:- This study aimed the study to assess the effectiveness of foot massage on sleep quality among cardiac patients

Methods:- Quantitative approach, True experimental pretest-post test only design was used. sleep quality assessment scale was used to assess the sleep quality among cardiovascular patients, total 76 subjects was taken in study in cardiac care unit of Himalayan university of medical science.

Results:- The result suggested that there was a significant difference in mean score of sleep quality before and after the foot massage sleep. In experimental group there is a significant difference of pre and post mean sleep quality score at ($p < .00001$) and no significant difference between pre and post test mean sleep quality score at ($p = .207$) of control group.

Conclusion:- The result of the study directed that sleep disturbance were prevailing in patients with cardiovascular diseases

KEYWORDS

Sleep quality, Foot massage, Sleep disturbance

1-INTRODUCTION

Sleep is natural routine cycle of several hours, that co-ordinate and controlled by the brain and have a behavioral and physiological state of rest along with suspended consciousness and relaxed body¹. It is a complex steady process which tells various periods of body and mind actions called internal biological clock. The functioning of both the system occurred between two modes of sleep, first NREM and second REM level. A healthy person completes four or five cycles of each steps and one cycle is about for 90 to 100 mints called Circadian rhythm encourage sleep every day². While sleeping anabolic function works to rebuild general health. Its impact on each cells, tissues and whole body organ –heart, lungs, brain which regulates memory, mood, cognitive process, metabolism, hormonal and other vital function of the body. Controlled timing of sleep command through biological clock accompany with absences of environmental factors. Individual's life style influences quality of sleep³. The sleep hours differs in all age group, for adults the recommended sleep hrs is seven – nine². Partial sleepiness started decline mental performance, concentration power, awareness, thought process, recognizing the memories. Prolonged Hardship sleep make alteration can lead to serious health problems depression, Obesity, Hypertension, Diabetes, Heart diseases, respiratory distress, endocrine dysfunction and some time may have a risk of death especially inadequate amount of sleep twice the risk cardiovascular disease⁵. Heart failure is crucial problem of general population along with morbidity, re-hospitalization, admission in hospital, big finance cost, Sleep related breathing disorders and mortalities all are formed burden over health may aroused contribution to insomnia causing pressure on heart. Largest part of people customary their home environment for sleep. Now a day's busy life style of human have habitual of taken sleep in distracted surroundings but who has fall asleep in silent place have difficult falling asleep. Strange atmosphere of hospital settings, physical inconvenience, pain, distress, whole day process of medical and nursing intervention put up sleep stress among hospitalized patients falling off quality ,quantity ,duration assessed through physical look, facial response, behavioral changes is symbolic representation of deprived sleep⁷.

Sleep Disruption is the cause of increase risk of heart disease¹. A survey had demonstrated that how insomnia and short sleep duration deteriorate the common path- physiology mechanism that were highly clinical risk for disease of heart, both are treatable and can be modifiable through non-pharmacological method⁴.

Shariati Hospital Tehran was conducted Experimental study on massage therapy effect on quality of cardiac patients, they had given

massage for a week morning and evening time and the outcome of the massage which enhance sleep quality among interventional group and decreased unpleasant effect of sleep health¹. Massage of foot by application of plant oils (olive, sunflower, safflower seed, argan, soya, mustard, peanut and coconut oil) on the base of availability. Benefits of all the oils work as non-pharmacological anti- oxidants and anti-inflammatory properties and helps in healing the repair of tissue cells and its function⁶. Easy availability of coconut oil with nonstick texture with easy to absorb by body tissues and its best oil for massage which also help in work as antioxidants⁷.

Studies engross on decreased quality of sleep have chances of risk for diseases specially ischemic heart diseases, there are the models that highlight the importance of good sleep health that emphasize and encourage cardiac health¹. Nursing intervention provide relaxing and reducing stress among patients among cardiac patients. The use of massage therapy explored in on psychological outputs in post-OP heart patients. Massage therapy as stimulation of tissues activated parasympathetic system to drop down the sympathetic activity and become normal in heart patients. Massage therapy will be used as complimentary therapy in nursing intervention⁹. While conducting the study researcher found that cardiac patients have disturbed sleep quantity and quality where as the affect of massage of foot on their sleep during hospitalization⁴.

METHODS

It was a experimental clinical trial study in two group experimental and control groups. Total 76 subjects was selected and equally divided into two group experimental ($n = 38$) and control ($n = 38$) and who was admitted in cardiac care unit, they selected according to inclusion criteria .

The sample size measured by applying the formula

$$n = \frac{\alpha (Z_{1-\alpha/2} + Z_{1-\beta})^2 \sigma^2}{(\mu^1 - \mu^2)^2}$$

$Z_{\alpha} = 1.98$ at 5% level of significance, $Z_{\beta} = 1.28$ at 90% power of test, $\mu_1 = 18.33$,

$\mu_2 = 19.67$, $\sigma = 5.603$. Inclusion criteria had 3 points for selection of samples, patients Having cardiovascular disease admitted in cardiac unit at least for three days, Conscious and able to communicate and follow command, Willing to participate. In this study questionnaire was prepared for collection of data. Tool1- Base line data, It included

age, gender, marital status, education status, occupation, addiction, residence .Tool2- Clinical Profile-Consist of current diagnosis with duration of current diagnosis, kind of other disease duration of other disease, difficulty in sleeping, sleeping hours, any medication for sleep, time duration in between dinner and sleep, time of waking up in morning, preferred position during sleep, any kind of exercise before going to bed. Tool3- Sleep Quality assessment Scale, self formed assessment scale for sleep. Questionnaire in sleep quality assessment scale have total 11 questions, 10 of qualitative and one was qualitative. Total score 40, maximum score was 40 and minimum score was 10. And score divided into three category mild(10-19), moderate(20-28) and severe(29-30), low score indicate low sleep problem and high score indicate high sleep problem and score divided into 3 equal category based on obtained score.

Foot massage was done for two consecutive nights after day of admission. Massage with coconut oil, it was done for 10-15 mints in each foot. Post test was by both group taken on 4th day at morning. After collecting data the analysis was done by using SPSS, chi-square, independent T and paired t test was used for analyzing data

RESULT:

Sleep quality score of patients with cardiovascular disease of experimental group (n=38), categorized in three category mild (10-19), moderate 20-28) and severe (29-37) and highest score indicate higher sleep problem and low score means low sleep problems, pretest score of patients before intervention majority of patients in moderate group 81.5%, intervention given to experimental group for 2 nights then post test was taken that result was improved in sleep and decreased score majority of patients with had mild sleep problems. No changes seen in control group before and after intervention.

Mean pretest and post test sleep quality score of sleep quality of experimental group was significant value at the level of $p < .00001$.

DISCUSSION

Result of this study indicate that the Mean pretest and after intervention post test sleep quality score of experimental group was significant value at the level of $p < .00001$. In study showed that effectiveness of foot massage in experimental group with mean $\pm$ SD was 24.13 ± 2.88 before intervention and mean $\pm$ SD after intervention 15.58 ± 2.24 . The t value was 13.3 and it was highly significant of $< .00001$ level. In control group the mean $\pm$ SD was $< 22.71 \pm 4.82$ before intervention and mean $\pm$ SD after intervention was 21.74 ± 2.82 . The t value were 1.28 and there was no significance seen (0.207).

While seen effectiveness In-between the pre score of sleep quality mean $\pm$ SD was 24.13 ± 2.88 of experimental and in control group has 21.71 ± 4.28 . The t value between experimental and control group was $t = 1.560$ and there was no significance seen ($< .061$).

After completed the intervention of massage on experimental the mean $\pm$ SD was 15.58 ± 2.24 and control group without intervention mean was 21.74 ± 2.82 . The t value was 10.53 and the quality of sleep score showed highly significant difference of < 0.0001 . The independent t test was used for significance. A clinical trial were done by Oshvandi .K, Abdi .S, Karampourian A, Moghimbaghi.A, Homayontar S. To determine foot massage effect on quality of sleep. Experimental group the mean and standard deviation before intervention was 19.67 ± 6.25 and post intervention was 15.33 ± 4.87 . There was significant difference, $t = 3.457$ and $p = 0.002$. The mean and standard deviation after intervention in control group 18.90 ± 5.66 were as in experimental group 15.33 ± 4.87 shows significant difference $T = 2.616$ and $p = 0.01$.

CONCLUSION-

According to the result of the study regarding sleep problem is major issues in patient in cardiac care unit with cardiac problems which may have an impact on patient prognosis and quality of life so good nursing management such as, non-pharmacological nursing intervention like foot massage which helps in improved sleep quality and reduces the dependency on pharmacological measures for disturbed sleep in cardiac patients.

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