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### Effectiveness of warm footbath on quality of sleep among cancer patients

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#### ABSTRACT

Cancer is a generic term for a large group of diseases that can affect any part of the body. Cancer is a leading cause of death worldwide, accounting for an estimated 9.6 million deaths in 2018. The study aims to assess the effect of warm footbath on quality of sleep among patients with cancer. The study was conducted in saveetha medical college and hospital with 80 sample were alternatively assigned to experimental group and control group so as to include 30 samples in each group. The data was collected by using Groningen sleep quality scale to quality of sleep among patients with cancer. The results shows highly significant difference in the quality of sleep among patients with cancer after warm footbath.

**Keywords:** Warm water foot bath, Quality of sleep.

#### INTRODUCTION

Cancer is a group of disease characterized by the uncontrolled growth and spread of abnormal cells. Around one third of cancer deaths are due to the 5 leading behavioral and dietary risks such as high body mass index, low fruit and vegetable intake, lack of physical activity, tobacco use, alcohol use [1]. There is variety of medical interventions to reduce insomnia problem among cancer patients. Water is a basic resource and a primal natural remedy. In all of its states; steam, liquid and ice, water can provide a wide range of treatment for health problems [2]. Sleep is a basic human need: it is a universal biological process common to all people. Historically, sleep was considered a state of unconsciousness. More recently, sleep has come to be considered an altered

state of consciousness in which the individuals perception of and reaction to the environment are decreased [3]. Insomnia is defined as a subjective complaint of inadequate nocturnal sleep. It is the most common sleep disorder reported by cancer patients. Although alterations in sleep patterns are endemic among this population, sleep problems are rarely assessed in a typical patients evaluation. Furthermore, patients often fail to mention symptoms to their caregiver, and when sleep is assessed, it is usually in the form of a single question [4]. Hot water footbath provided a good sleep, because it relaxes the body and mind. It works by slightly raising the body temperature and after 15 minutes, it starts to drop slowly. This can promote sleep indirectly [5]. A warm water footbath is a local moist heat application. The

findings provide empirical support that a warm water footbath relieves fatigue and insomnia problems of patients undergoing chemotherapy [6]. In cancer, one of those cells stops paying attention to the normal signals that tell cells to grow, stop growing or even to die. Cancer cells still share many of the same needs and properties of normal cells but they become independent of the controls that make our body function smoothly. The process by which a normal cell changes into one that behaves so abnormally can take a long time and is often triggered by outside influences [7]. Cancer is actually a general term that describes a large group of related diseases. Every case of cancer is unique, with its own set of genetic changes and growth properties. The many differences between cases of cancer, even of the same organ (i.e. different cases of breast cancer) is one of the main reasons that treatment is so difficult despite the differences between different types of cancer, all cancers do share some common features, and these shared properties are the basis for many cancer treatments and research efforts [8]. Hot water bath can help in giving us a good sleep, because it relaxes the body and mind. Gradual drop of body temperature can make one feel drowsy and therefore one is prepared for sleep. Warm footbath is one of the effective methods for inducing sleep. A warm footbath warms the skin, which causes vessel dilation and induces heat dissipation. Intervention that enhances heat dissipation prior to sleep will improve the sleeping pattern of the patients [9]. Sleep provides healing and restorations. Achieving the best possible sleep quality is important for the promotion of good health as well as recovery from the illness. Sleep is a cyclical physiological process that alternates with longer periods of wakefulness. The sleep-wake cycle influences and regulates physiology function and behavioral response [10]. Changes to sleep patterns which affect quality of sleep or disrupt a normal sleep cycle are known as sleep disturbances. It is sleep disturbances that have an adverse effect on health and quality of life [11]. The prevalence of insomnia increases with age. In a survey of more than 9000 elderly adults 65 years and older, 28% complained of difficulty initiating sleep, and 42% reported difficulty in both initiating sleep, and maintaining sleep. In a study done in a general practice more than 50% of elderly patients reported insomnia, 80% of these reporting more than insomnia

were chronic condition. Women complained of insomnia more than men [12].

## MATERIALS AND METHODS

Quantitative approach was used in this study. A quasi-experimental, post test only control group design was chosen to assess the effect of warm footbath on quality of sleep among patients with cancer. The study was conducted in Saveetha Medical College and Hospital. The setting was chosen on the basis of feasibility in terms of availability of adequate sample and cooperation extended by the management and other health care team members. Target population of the study is all cancer patients in Saveetha Medical College and Hospital. Patients with cancer who meet the inclusion criteria were selected as the sample for the study. The sample size was 60 cancer patients. 30 cancer patients in experimental and 30 cancer patients in control group. Purposive sample technique was used by the investigator. Inclusion criteria are patients with cancer who are willing to participate in this study. The study includes both men and women. Data was collected using Groningen sleep quality scale and demographic profile of warm footbath on quality of sleep among patients with cancer. The project has been approved by the ethics committee of the institution. Informed consent was obtained from the participants before initiating the study.

## RESULTS

The present study results show that in the majority of cancer patients in experimental group 12(40%) to the age group of 46-55 years and control group 11(36.6%) to the age group of 56-65 years, male 18 (60%) in experimental group and Female 11(36.6%) in control group, educational status 11(36.6%) and 13 (43.3%) in experimental group and control group, occupational status 17 (56.6%) and 20(66.6%) in experimental and control groups, monthly income 5000-10000 13 (43.3%) in experimental and control groups, stages of cancer 1<sup>st</sup> stage 16 (53.3%) in experimental group and 14(46.6%) in control group.

**Table 1:** shows that the mean value of sleep quality scores among patients with cancer in the experimental and control groups was 5.33 (SD=30.5) and 7.9 (SD=0.188) respectively with mean difference of value -5.19. The t value (-4.30) was significant at  $p > 0.005$ .

**Table 1: This section deals with effect of warm footbath on quality of sleep among patients with cancer in the experimental and control group on fifth day**

	Group	Mean	SD	Mean difference	t value
Quality of sleep	Experimental group	5.33	30.05		
	Control group	7.9	0.188	-5.19	-4.30

**Table 2:** shows that the comparison of mean post test in effect of warm footbath in experimental and control groups. The control group was higher

than the experimental group which implies that there was a significant increase a  $p < 0.005$  level.

**Table 2: This section deals with comparison of mean post test in effect of warm footbath in experimental and control groups**

Group	Sample(N)	Post test (Mean)	Post (SD)
Experimental group	30	5.3	30.05
Control group	30	7.9	0.18

**Table 3:** The results reveals that in the experimental group in first day 21 (70%) patients had poor sleep. On the fifth day 19 (63.3%)

patients had normal sleep. In the control 21 (70%) patients had poor sleep on the first day and 16 (53.3%) patients had on the fifth day.

**Table 3: Assessment on quality of sleep among patients with cancer in the experimental and control group on first and fifth day**

S.N O	Quality of sleep	No .of patients							
		Experimental group				Control group			
		First day		Fifth day		First day		Fifth day	
		Frequency	percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
1	Normal sleep	-	-	19	63.3%	-	-	1	3.33%
2	Disturbed sleep	9	30%	9	30%	9	30%	13	43.3%
3	Poor sleep	21	70%	2	6.66%	21	70%	16	53.3%

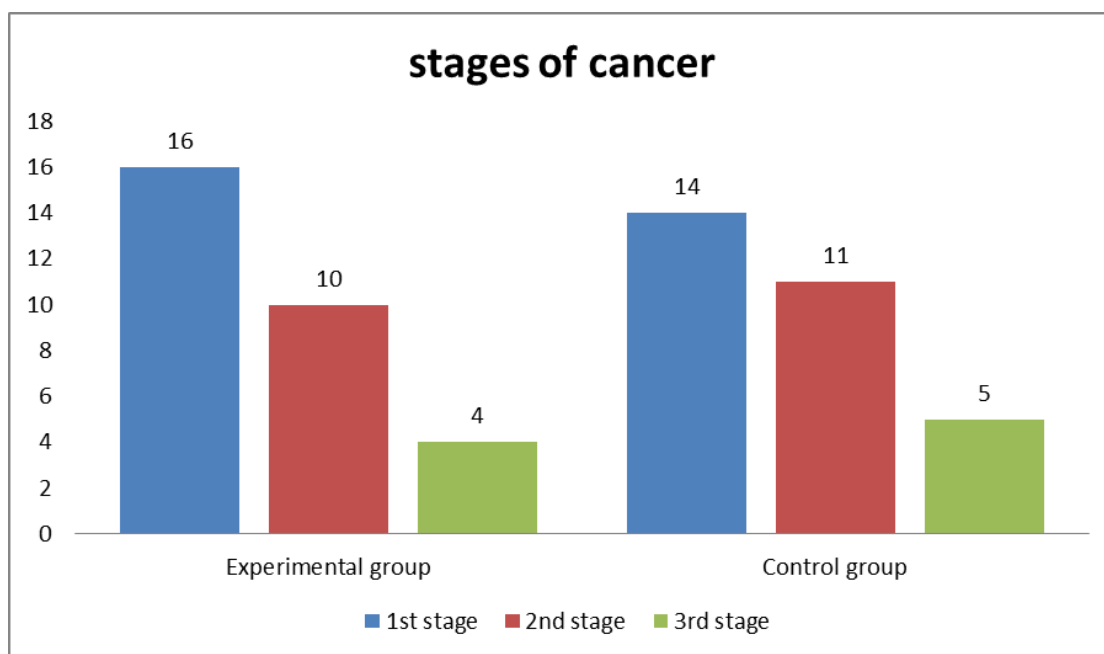


Figure I: Stages of cancer

## DISCUSSION

The present study assess the effect of warm footbath on quality of sleep among patients with cancer in experimental and control groups on fifth day. The result indicates that the post test Mean score is 5.33 and SD score is 30.05 in experimental group and Mean score is 7.9 and SD score is 0.188 in control group. The improvement was statistically tested by unpaired t test value (-4.30) and the result was found to be significant at p value <0.05 level of significance. Which is similar to findings reported by study conducted by **Arshpreet Kaur et al.** from Amritsar which showed that the mean score is 6.78 and SD score is 2.768. The improvement was statistically tested by paired t test value (6.552) and the result was found to be significant at p value <0.01 level of significance [13].

In author study conducted by **Anju Philip** the quality of sleep among cancer patients in the control and experimental groups on fifth day, that results reveals that in the experimental group 23 (82.1%) patients had normal sleep and control group 2 (7.15%) patients had normal sleep. There is highly significant in the experimental group than the control group on fifth day [14].

A similar study was conducted by **Allehe seyyedrasooli et al.**, this study was done by 46 participants. The mean age and standard deviation of

participants were 67.26 (4.05%). The majority of participants were literate [15].

## CONCLUSION

Cancer has a reputation as deadly disease. People with cancer often undergo physical and emotional disturbances due to their diagnosis of cancer. Disturbed sleep has functional consequences as it has been associated with poor quality of life.

The non- pharmacological interventions such as complimentary treatments produce reliable changes in sleep patterns among patients with cancer. Warm footbath gives a good sleep, by relaxing body and mind. According to the present study conducted, warm footbath resulted in improved quality of sleep among patients with cancer. This indicates that warm footbath is an important non pharmacological method to enhance the quality of sleep among patients with cancer.

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