

# Effectiveness of Hot Water Foot Bath on The Quality of Sleep Among Elderly Patients

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**Abstract---** *Introduction-Common problem in the general population is poor sleep quality; it is due to lifestyle changes and work-related demands. With aging sleep problems increase sharply. Physical, mental, and social aspects of well-being are affecting due to Poor sleep quality. Objectives: Assessment and comparison of quality of sleep among hospitalized elderly patient before and after hot water foot bath .Methods: Comparative study was conducted with evaluative approach on 50 elderly patients which was selected by non probability convenient sampling method and was divided in experimental and control group (25 in each group). Quality of sleep was assessed by Pittsburgh Sleep Quality Index (PSQI) before and after hot water foot bath in experimental group and in control group before and after routine nursing intervention. Results: Control group pre-test mean was 8.64 (2.307) and post-test mean was 10.92 (2.857), mean difference was -2.280, 'p' value after pre-test and post-test comparison was 0.0010 where as in experiment group pre-test mean was 10.96 (1.791) and post-test mean was 3.92 (1.187), mean difference was 7.040, 'p' value after pre-test and post-test comparison was 0.0001 which indicate that hot water footbath is more effective than routine nursing care to improve quality of sleep. Conclusion: Based on the findings of the result of the study show that hot water foot bath among elderly patients is more effective than routing nursing care. Especially it improves quality of sleep.*

**Keywords---** *Hot Water Foot Bath, Quality of Sleep and Elderly Patients*

## I INTRODUCTION

For recovery and regaining energy from lethargy sleep plays an important role in human body which is normal physiological mechanism [1]. The word population pyramid of age is changing day by day. In the year 2000 old age population of the word was 10%, in 2010 it became 11.0% and it is expected that in 2010 it will be 16.6%.<sup>3</sup>

In the growing countries demographic change of ageing is more sensed. In 1951 India was having 20 million elderly populations, as per senses of 1991 it became 57 million as well as there is high number of increasing elderly between 1991 to 2001. It is expected that in 2050 worlds' older population will be 324 million [2]. Human life is divided in phases like infancy, childhood, adulthood and old age. The old age there are many health related problems are present like low physical strength, deteriorates mental stability, diminish vision, poor sleep etc[3].

Sleep is basic requirement of normal human body, approximately one third of life human being spend in sleep and it is common to all the people. Sleep is essential for more reasons like restore the mind and body, to prevent

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fatigue, relieve daily stress, enjoy life, to conserve energy. Decreased responsiveness to person and the environment in normal state of altered consciousness where body rests it's known as sleep.

According to research of Cotroneo et al. after headache and digestive problem 3<sup>rd</sup> more common health problem in elderly was disturbance in sleep [3]. As per research conducted by Eser et al 60.9% of elderly peoples having difficulty in sleeping [4].

Number of researches shows that sleep problems is having association with napping during day, change in behaviour, accidents, poor quality of health and sleep conditions etc [5].

There are researches conducted to identify effect of non-pharmacological methods on sleep quality for example effect of massage on sleep which was conducted by Reza et al, effect of exercise on sleep which was conducted by de Castro Toledo Guimaraes et al., effect of light on sleep which was conducted by Kirisoglu & Guilleminault and effectiveness of music on sleep which was conducted by Chan et al [6]. Non-pharmacological intervention by nursing personal is foot bath but there are limited studies on it [11]. Stress, insomnia, anxiety, fatigue, tired muscles can be relieved by hot water foot bath and it is detoxifying medium which is cheap and used from centuries.

Body temperature and rhythm of skin temperature is having relation with sleep wake cycle. Once person is woke up rectal temperature increases and its go high in afternoon. Tendency of sleep and core body temperature is having negative relationship. Onset of sleep is possible when there is decreased core body temperature. Hot water foot bath will dilate the peripheral blood vessels which can improve blood circulation, reduce core body temperature that will lead to improve onset quality of sleep [12].

**Aim-**Effectiveness Of Hot Water Foot Bath On The Quality Of Sleep Among Elderly Patients, Admitted In Tertiary Care Hospital.

## II METHODS:

Comparative study was conducted with evaluative approach on 50 elderly patient with sleep problem which was selected by non probability convenient sampling method and sample were divided in experimental and control group (25 in each group) from medical ward of Krishna Hospital and Medical Research Centre Karad. Procedure was explained and consent was taken from all samples. The pre-test of Quality of sleep was assessed in both the experimental and control groups. The intervention (i.e. hot water foot bath) will then be administered to the experimental group by the investigator for 7 days (once in day for 30 min). Then the post-test of Quality of sleep was assessed by Pittsburgh Sleep Quality Index (PSQI) after the intervention to the experimental group as well as control group after receiving routine nursing care.

### Description of the tool

**Section I:** Deals with demographic data of the sample there are total 7 items in this section which includes personal data of the elderly patients, like age, gender, religion, education, occupation, income, residence.

**Section II:** Deals with The Pittsburgh Sleep Quality Index (PSQI) is a scale for assess the quality of sleep that consisted of 9 factors. Good quality of sleep is 0-5 score, were as above 5 score is the poor quality of sleep.

### III RESULTS:

**Table 1: showing Frequency and percentage distribution of samples according to their socio-demographic Variables**

Demographic Variables	No. Of Subjects	
	Control Group	Experimental Group
1)Age Group (in yrs)		
65-70	10(40%)	20(80%)
71-75	8(32%)	2(8%)
76-80	6(24%)	2(8%)
81 and above	1(4%)	1(4%)
2)Sex		
Male	23(92%)	6(24%)
Female	2(8%)	19(76%)
3)Religion		
a)Hindu	22(88%)	20(80%)
b)Muslim	2(8%)	3(12%)
c)Christen	0(0%)	0(0%)
d)Others	1(4%)	2(8%)
4)Education		
a)No Education	3(12%)	9(36%)
b)Primary	12(48%)	7(28%)
c)Secondary	6(24%)	5(20%)
d)Higher Secondary	3(12%)	3(12%)

e)Graduate	1(4%)	1(4%)
5)Occupation		
a)Working	8(32%)	6(24%)
b)Not working	17(68%)	19(76%)
6)Income		
1)1000-5000	3(12%)	6(24%)
2)5001-10000	10(40%)	9(36%)
3)10001-15000	10(40%)	8(32%)
4)Above 15000	2(8%)	2(8%)
7)Residence		
A)Urban	5(20%)	3(12%)
b)Rural	20(80%)	22(88%)

- Majority of patients 10 (40%) belongs to control group were within the age group of 60-70 years. whereas, 20 (80%) of patients from experimental group were within the age group of 60-70.
- According to gender in control group 23 (92%) were male and 2 (8%) were female. In experimental group 6 (24%) patient were male whereas, 19 (76%) were female.
- Majority of patients 22 (88%) belongs to control group were belongs to hindu religion, whereas, 20 (80%) of patients from experimental group were belongs to Hindu religion.
- Majority of patients 9 (36%) belongs to experimental group had no education whereas, 12 (48%) of patients from control group had secondary education.
- Majority of patients 19 (76%) belongs to experimental group were had not working occupational status, whereas 17 (68%) patients had not working occupational status in control group.
- Majority of patients 9 (36%) from experimental group having monthly income 5000 – 10000 and in control group 10 (40%) having monthly income 5000 – 10000 & 10001 – 15000.
- Majority of patients 22 (88%) belongs to experimental group were had residence in rural area, whereas 20 (80%) patients had residence in rural area in control group.

**Table 2: Comparison of pre-test and post-test of feeling of well being of both control and experimental group.**

	Control Group		Experimental Group		Mean Difference	Unpaired 't' test
	Mean	SD	Mean	SD		
Pre-Test	8.64	2.307	10.96	1.791	-2.32	p =0.0001 Significant
Post-Test	10.92	2.857	3.92	1.187	7	p =0.0001 Significant
Mean Difference	-2.280		7.040			
Paired 't' test	0.0010 Significant		0.0001 Highly Significant			

Control group pre-test mean was 8.64 (2.307) and post-test mean was 10.92 (2.857), mean difference was -2.280, 'p' value after pre-test and post-test comparison was 0.0010 where as in experiment group pre-test mean was 10.96 (1.791) and post-test mean was 3.92 (1.187), mean difference was 7.040, 'p' value after pre-test and post-test comparison was 0.0001 which indicate that hot water footbath is more effective than routine nursing care to improve quality of sleep.

#### IV DISUSSION:

In present study Control group pre-test mean was 8.64 (2.307) and post-test mean was 10.92 (2.857), mean difference was -2.280, 'p' value after pre-test and post-test comparison was 0.0010 where as in experiment group pre-test mean was 10.96 (1.791) and post-test mean was 3.92 (1.187), mean difference was 7.040, 'p' value after pre-test and post-test comparison was 0.0001 which indicate that hot water footbath is more effective than routine nursing care to improve quality of sleep.

Whereas similar kind of study showed the effectiveness of warm water foot bath on quality of sleep among hospitalized patients. Similar kind of research conducted by AlleheS eyedrasooli et al, Its results reveal that warm water foot bath can improve quality of sleep as well as sleep duration [14]. Another similar research conducted by Ms. Disha S. Anjana, Dr.Anilkumar Sharma reveals that warm water foot bath can improve quality of sleep [15]. Another similar study conducted by Malarvizhi 1, Karthi R. 2, shows that warm water foot bath can improve quality of sleep [16].

#### V CONCLUSION:

Based on the findings of the result of the study show that hot water foot bath among elderly patients is more effective than routing nursing care. Especially it improves quality of sleep. So as non-pharmacological method, routine use of hot water footbath to improve quality of sleep should be done regularly.

## **VI RECOMMENDATIONS**

Since this study only touched knowledge aspect and controlled sample size the result can be only considered as the reference study, recommendation can be as follows:

- A similar study can be conducted with a view to develop implement new techniques to improve in quality of sleep.
- A similar study can be replicated on other patients with medical or surgical condition.
- An exploratory survey can be done to find out the limitations faced by the patients in the following hot water foot bath.

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## **IX CONFLICT OF INTEREST-NIL**

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