

An Experimental Study to Assess the Effect of Hot Water Foot Bath in Patients with Fever Admitted in Selected Hospitals of Pimpri Chinchwad Municipal Corporation, Pune

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Abstract

Pre Experimental design was adopted for the study to assess the effectiveness of Hot Water Foot Bath Therapy in patients with fever admitted in selected hospitals of PCMC area, Pune. Purposive sampling technique was used to collect the sample. The conceptual framework was based on Lydia E. Hall's Core, Care, and Cure Model. Data was collected through the observational check list. The Pre-test results showed that majority of the sample i.e. 84 % (28) had temperature in the range of 100 °F to 102.6 °F in both groups. Whereas in post test only 21% patients had temperature above 100 °F and rest have the temperature in range between 98.4°F to 99.8 °F in experimental group. Mean effect of hot water foot bath on fever at pre intervention was 101.04±0.04 whereas in at post intervention it was 99.37±0.58 in experimental group. Whereas there is no major difference in pre and post level of temperature in control group. The result indicated that the level of temperature reduced in experimental group hence it was proved that hot water foot bath was effective in reducing temperature. The findings on relationship of the selected variable of patients showed that none of the demographic variables was found to have significant association with temperature level.

Keywords: Effect; Hot Water Foot Bath; Fever.

Introduction

Hot water foot bath therapy (HWFBT) one of the hydrotherapeutic measure, which improves warmth, promotes muscle relaxation, relieves pain, dilates blood vessel and promotes circulation, relaxes the connective tissue and provides a soothing and healing effect. Hot Water Foot Bath is said to treat the underlying infection by activating the WBCs and immune system. Hot application to the skin increases the oxidation of the toxins and increases the blood flow through the peripheral vessels. It also increases the ability of the phagocytes to destroy

the germs and detoxify the blood. Beneficial effect of increased blood flow to the tissue includes facilitation of drainage and “wash-out” effect, purging the tissue of debris and by products of tissue injury. Thus large quantities of bacterial poison can be eliminated:

Need for the Study

Antipyretic therapy is an effective pharmacological measure to reduce fever. Along with pharmacological measures there are many non pharmacological measures like cold sponging, tepid sponging, external cooling, warm water therapy that are found to be effective in controlling the temperature. There is a controversy regarding the indication for and the use of the heat and cold therapy. But many studies have shown that, hydrothermal therapy is an effective method for treating fever (Glaster, 2004).

Warm application to the foot causes the congested blood to flow towards distant parts of the body and is brought to the dilated vessels of the foot and leg.

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When Hot Water Foot Bath applied for 15-20 minutes the vessels in the feet starts expanding and gets improved circulation, neutralizing acid and killing bacteria, and relieving aches, tiredness and fever. The improved blood circulation resets the hypothalamic set points by heat transfer from higher heat area to lower heat area.

Statement of the Problem

“An experimental study to assess the effect of hot water foot bath on temperature among patients with fever admitted in selected hospitals of PCMC area, Pune.”

The Objectives of the Study

- To assess the temperature of the patient before hot water foot bath therapy in both experimental and control group.
- To determine the effect of hot water foot bath therapy on fever among the patients in experimental group.
- To compare the pre and post test temperature in experimental and control group after hot water foot bath therapy.
- To correlate the temperature with demographic variables.

Hypothesis

H_0 : There will be no significant difference on temperature after hot water foot bath therapy

Conceptual Framework

The conceptual framework is based on Lydia E. Hall's Core, Care, Cure Model.

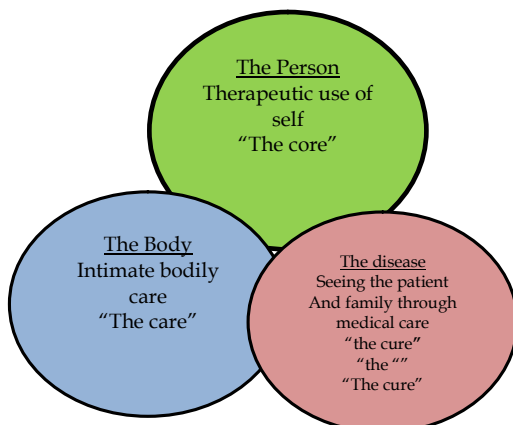


Fig. 1: Hall's three aspect of nursing

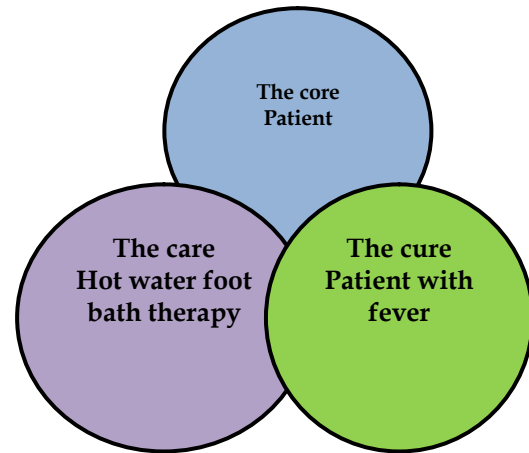


Fig. 2: care and core predominant

Methodology

In the present study, the design used was Pre Experimental. The independent variable in the study was hot water foot bath therapy in patient with fever and the Dependent variable in the present study was fever among adult group.

The study population consisted of the adult age group suffering from fever. Total 60 samples were taken with a non probability purposive sampling technique. For collection of the data, an observational checklist was developed for the assessment of effect of hot water foot bath in fever patients among adult group.

The structured interview schedule questioner consist of demographic variables

- Section I : consisted of 5 items on demographic variable consist of age ,sex, educational status , family income per month, history of past fever if any.
- Section II : consist of temperature record sheet. It comprised of questions on following broad aspects.
 - Temperature before intervention
 - Temperature after intervention (after 30 minutes.)
- Section III : consist of observational check list
- Section IV: Profile For hot water foot bath

The investigator obtained permission from the concerned authority of the D Y Patil Medical College Hospital. Informed consent was taken from the patients admitted with fever. According to the inclusion and exclusion criteria and by purposive

sampling method the samples were selected. The sample was randomly allocated into two groups, (Control Group) group-I and (Experimental Group) group-II, based on previously prepared random allocation Table. Group-I received routine management and Group-II received warm water foot bath therapy for 10- 15 minutes and the temperature of water was 41-42°F. The investigator used basin for the immersion of foot ankle. The temperature of the water is measured by a lotion thermometer. As the water become cool, hot water was added to maintain the temperature of water. The temperature measured by a clinical thermometer for both group. An interview schedule was used to elicit the demographic Performa.

In this study the reliability was determined by administering structured interview schedule to 10 adult age group in Bhosari Hospital in PCMC area

The reliability was done by inter-ratter method. calculation was done by Karl Pearson’s Product Moment Correlation Formula and the reliability co-

efficient was found to be (0.91), Reliable which is highly significant. Hence the tool is reliable.

The analysis of the demographic profile revealed that majority (36.7%) in experimental group and (43.3%) in control group belonged to the age group of 20-22 years.

Maximum 50% in experimental group and 60% in control group were males and remaining in both the groups were females. 40% in experimental group and 36.7% in control group had education upto secondary level, 30% in experimental group and 23.3% in control group had education upto higher secondary level.

Maximum 43.3% in experimental group and 40% in control group had monthly family income of Rs. 3001-6000 per month, 30% in experimental group and 40% in control group had monthly family income of Rs. 6001-9000 per month.

30% in experimental group and 43.3% in control group had past fever history.

Table 1: Percentage wise distribution of patients according to their demographic characteristics n = 30

Sr. No.	Variable	Experimental		Control	
		Frequency	Percentage	Frequency	Percentage
1	Age (yrs)				
	17-19 years	9	30%	8	26.7%
	20-22 years	11	36.7%	13	43.3%
	23-25 years	10	33.3%	9	30%
2	Gender				
	Male	15	50%	18	60%
	Female	15	50%	12	40%
3	Educational Qualification				
	Illiterate	0	0%	5	16.7%
	Primary	5	16.3%	3	10%
	Secondary	12	40%	11	36.7%
	Higher Secondary Graduation & above	9 4	30% 13.3%	7 4	23.3% 13.3%
4	Family Income Per Month (Rs)				
	Below 3000	4	13.3%	3	10%
	3001-6000	13	43.3%	12	40%
	6001-9000 9001-above	9 4	30% 13.3%	12 3	40% 10%
5	Past Fever History				
	Yes	9	30%	13	43.3%
	No	21	70%	17	56.7%

Majority of the sample 84%(28) have temperature in the range of 100°F to 102.6°F in pre test in both group.

Mean temperature of the patients before hot water foot bath therapy in experimental group was 101.04±0.72 whereas in control group it was 101.05±0.72. By using unpaired t test no significant difference was found in the temperature of the

patients before hot water foot bath therapy in both the groups (t=0.07,p-value=0.94).

However, majority of the sample 84%(28) had temperature in the range of 100 to 102.6 °F in pre test in experimental group. whereas in post test only 21% (7) patients had temperature above 100°F and rest have the temperature in range between 98.4°F to 99.8°F .

Mean effect of hot water foot bath on fever at pre intervention was 101.04 ± 0.04 whereas in at post intervention it was 99.37 ± 0.58 . By using 'paired t

test' statistically significant difference was found in the temperature of the patients at pre and post intervention ($t=13.97$, $p\text{-value}=0.000$).

Table 2: Analysis related to the effect of hot water foot bath on fever among patient in experimental group $n=30$

	Mean	Standard Deviation	Range	Mean Difference	t-value	p-value
Pre Intervention	101.04	0.72	99.80-102.60	1.66 \pm 0.65	13.97	0.000
Post Intervention	99.37	0.58	98.40-100.60			$S_p < 0.05$

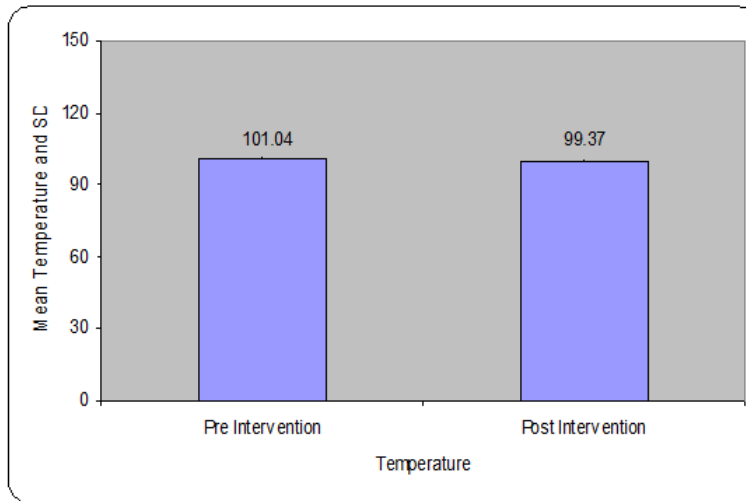


Fig. 3: Analysis related to the temperature of the patient after hot water foot bath in both experimental and control group $n = 30$

- *Data analysis related to compare the pre and post test in experimental and control group after hot water foot bath therapy.*

The result showed that majority of the sample 84%(28) had temperature in the range of 100°F to 102.6°F in pre test in both group. whereas in post test only 21% (7) patients had temperature above 100°F and rest have the temperature in range between 98.4°F to 99.8°F in experimental group. Mean effect of hot water foot bath on fever at pre intervention was 101.04 ± 0.04 whereas in post intervention it was 99.37 ± 0.58 in experimental group. Whereas there was no major difference in pre and post level of temperature in control group, which indicated that the level of temperature is reduced in experimental group and hence it was proved that hot water foot bath is effective in reducing temperature.

The p value was 0.028 at 0.05 level of significance which indicated that there was a significant difference in the pre and post level of temperature in experimental group and the null hypothesis (H_0) was rejected and research hypothesis (H_1) was accepted.

The findings on relationship of the selected variable of patients showed that none of the

demographic variables was found to have significant association with temperature level.

Discussion

The present study findings have implications for nursing practice, nursing education, nursing administration, and nursing research

Nurses could explain advantages of Hot Water Foot Bath to patients with fever as it can be of immense help to improve quality of life, reduce the fever and prevent complications and side effects of anti pyretics medications and it is also safe and cost effective.

Hot water foot bath application for fever management can be included as nursing procedure to provide care during hyperthermia. Hot water foot bath is considered as complimentary alternative therapy and can be imparted to nursing students to improve their skill in providing alternative therapy and to update their knowledge on evidence based practices.

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The nursing administration can initiate Hot water foot bath practices to reduce the fever through in service education and continuing educational programmes and prepare written policies about evidence based practices.

The same study can be replicated on a large number of samples. Hot water foot bath can be advocated as a simple and safer means for reducing body temperature in home set up as well as in a hospital.

Conclusion

The following conclusions were drawn from the following findings of the study. When the samples were taken for the study the therapy was highly effective in patients with fever.

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