

**THE EFFECT OF WARM WATER FOOT BATH THERAPY ON
REDUCTION OF BODY TEMPERATURE AMONG CHILDREN
WITH FEVER IN SELECTED HOSPITAL, PERAMBALUR.**



A Dissertation submitted to
THE TAMILNADU DR.M.G.R. MEDICAL UNIVERSITY
CHENNAI

In partial fulfilment of the requirement for the award of degree of
MASTER OF SCIENCE IN NURSING

OCTOBER 2019

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Certified that this is the bonafide work of

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INTERNAL EXAMINER

EXTERNAL EXAMINER

DECLARATION

I (301716651) hereby declare that this dissertation entitled **“A STUDY TO EVALUATE THE EFFECTIVENESS OF WARM WATER FOOT BATH THERAPY ON REDUCTION OF BODY TEMPERATURE AMONG CHILDREN WITH FEVER IN SELECTED HOSPITAL, PERAMBALUR.”** has been prepared by me under the guidance and direct supervision of **Prof. R. PUNITHAVATHI, M.Sc.,(N)** Principal, Thanthai Roever college of nursing, Perambalur, as requirement for partial fulfilment of M.Sc., Nursing degree course under **The Tamilnadu Dr.M.G.R. Medical University, Chennai – 32**. This dissertation had not been previously formed and this will not be used in future for award of any other degree / diploma. This dissertation represents independent original work on the part of the candidate.

Place: Perambalur

Date: October - 2019

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II Year M.Sc. (N) Student,

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THE EFFECT OF WARM WATER FOOT BATH THERAPY ON REDUCTION OF BODY TEMPERATURE AMONG CHILDREN WITH FEVER

ABSTRACT

Fever plays integral role in fighting infection and although it may uncomfortable. A wide range of childhood illness is accompanied by fever. The aim of the study is to evaluate the effect of Warm Water Foot Bath Therapy on reduction of body temperature among children with fever. Study design was quasi experimental non equivalent control group design. 60 children with fever were recruited by purposive sampling technique (N=30). The experimental group received Warm Water Foot Bath Therapy for one time. Pre and post test were done with standardized digital thermometer. Statistical analysis revealed that the post test mean of body temperature in Experimental group was 99.64 ± 1.01 where as in control group was 100.9 ± 1.23 . The mean difference was 1.26. The obtained "t" value 4.90 was significant at $P < 0.05$ level. Findings revealed that Warm Water Foot Bath Therapy is effective in reduction of body temperature among children with fever.

CHAPTER-I INTRODUCTION

*“Children are the wealth of the nation,
Take care of them
If you wish to have a strong India”*

-Jawaharlal Nehru

Children constitute foundation of our nation. Healthy children may become healthy adults with optimal physical strength and emotional poise to become a useful member of our society and contribute effectively in nation building process. Childhood period should be a carefree time of life which is filled with love, with new world to explore and with joy of mastery of oneself and to the environment.

Fever plays integral role in fighting infection and although it may be uncomfortable. A wide range of childhood illness is accompanied by fever. Fever is said to occur in children when the body temperature is above 37°C (98.6°F). It occurs when various infectious and non-infectious process interact with host defense mechanism.

Most of children are affected by viral and bacterial infections. Fever can accompany the symptoms such as discomfort, irritability, lethargy, poor appetite and sore throat. High fever can cause seizure in children.

According to American academy of pediatrics (2019) estimates that parents are frequently concerned with the need to maintain a normal temperature in their ill child. Many parents administer antipyretics even though there is either minimal fever or no fever. Approximately one half of

parents consider a temperature of less than 38°C(100.4°F) to be a fever, and 25% of care giver would give antipyretics for temperature less than 37.8°C(100°F). Furthermore 85% of parents reported awakening their child sleep to give antipyretic and unfortunately as many one half of parents administer incorrect dose of antipyretics.

The primary goal of treating the fever is to be improving the overall comfort rather than focus on the normalization of body temperature.

Most of methods have been recommended to reduce the fever in children, which include tepid sponging, Warm Water Foot Bath Therapy, alcohol sponging and antipyretics.

Water plays an important role in reducing fever. Water being a good thermal conductor that influence temperature regulation mechanism of the body through circulation. Warm Water Foot Bath Therapy causes blood vessels to dilate and improve circulation, which releases heat in the form of sweat and supply of oxygen to brain cell which aids in the elimination of toxins.

NEED FOR THE STUDY

The statistics of fever is endemic in India. In 2015 the health surveys conducted by the central ministry of health in the community development areas indicated a morbidity rate varying from 102 to 2,219 per 1,00,000 population in different parts of the country. The report of morbidity showed that in an urban slum 1% of children up to 17 years of age suffer from fever every year, more than 7,000 people mostly children have died across the country since 2010 because of fever.

Bensoon M.Hamooya (2015) revealed that incidence rate of fever was 162.4 per month per 1000 children.

In the year 2017 the Hindu reported that 8000 children were admitted to government hospital with the symptom of fever in all over the Tamilnadu.

Wong's (2016) stated that an elevated temperature most frequently from fever but occasionally caused by hyperthermia, is one of the most common symptoms of illness in children. The manifestation is of great concern to parents. Body temperature is regulated by a thermostat- like mechanism in the hypothalamus. This mechanism receives input from centrally and peripherally located receptors. When temperature change occurs, these receptors relay the information to the thermostat, which increase or decrease heat production to maintain a constant set point temperature. However, during an infection, pyrogenic substances cause an increase in the body's normal set point, a process that is mediated by prostaglandins. Consequently, the hypothalamus increases heat production until the core temperature reaches the new set point.

Aileen christal Pereira et al (2017) conducted a quasi experimental study to evaluate the effectiveness of hot water foot bath therapy for children and recorded body temperature immediately in observational chart. It reveals that the experimental group post test mean temperature is ($99^{\circ} \text{ F} \pm 0.54$) and the pretest mean temperature is ($101.04^{\circ} \text{ F} \pm 0.81$). The study finding reveals that the hot water foot bath therapy is very effective for children with fever.

Fever is one of the most common problems of children which parents seek health care. High level of parental anxiety surrounding potential complication of fever such as seizures and dehydration are prevalent and can result in over use of antipyretics.

The pediatric nurses have an important role in nursing management of fever in children is to prevent complications like febrile seizures.

Warm Water Foot Bath Therapy is one of the measures which improve the warmth, promote muscle relaxation, relieve pain, dilate blood vessels and promotes circulation and provide soothing and healthy effect. There are different pharmacological and non- pharmacological methods to manage the fever in children.

The Warm Water Foot Bath Therapy is a newer aspect, which is said to have an important effect in the reduction of body temperature through the vasodilation of blood vessels.

So The Researcher decides to carry out a study on effect of Warm Water Foot Bath Therapy on reducing level of body temperature among children with fever.

STATEMENT OF THE STUDY

A Study to evaluate the effectiveness of Warm Water Foot Bath Therapy on reduction of body temperature among children with fever in selected hospital, Perambalur.

OBJECTIVES

1. To assess the level of body temperature among children with fever in experimental and control group.
2. To evaluate the effectiveness of Warm Water Foot Bath Therapy on reduction of body temperature among children with fever.
3. To determine the association between the post test level of body temperature among children with fever and their selected demographic variables in experimental group.

HYPOTHESES

- H1:- There is a significant reduction in body temperature among children with fever who receive Warm Water Foot Bath Therapy.
- H2:- There is a significant association between the post test level of body temperature among children with fever and their selected demographic variables in Experimental group.

OPERATIONAL DEFINITION**EFFECTIVENESS**

It refers to determining the extent to which the Warm Water Foot Bath Therapy reduces the fever in children as measured by using standardized digital thermometer.

WARM WATER FOOT BATH THERAPY

It refers to the immersion of both feet up to ankle in warm water at 100° F for 15 minutes.

BODY TEMPERATURE

It refers to as the peripheral temperature of the human body measured in axilla by standardized digital thermometer.

FEVER

It refers to body temperature of children above 99°F .

CHILDREN WITH FEVER

It refers to the children with fever aged between 4 to 14 years who are attending in and out patient department in selected hospital, Perambalur.

ASSUMPTION

- Warm Water Foot Bath Therapy has an influence on body temperature.
- Warm Water Foot Bath Therapy has no potential side effect on children with fever.
- Warm Water Foot Bath Therapy is a simple and cost effective measure to reduce the temperature among children with fever.

DELIMITATIONS

- The study is limited to children admitted with fever inpatient and outpatient department.
- The study is limited to 60 samples only.
- The study is limited to 4 weeks only.

PROJECTED OUTCOME

The finding of the study will help the nurses to implement Warm Water Foot Bath Therapy to reduce the level of body temperature among children with fever.

CHAPTER-II

REVIEW OF LITERATURE

The review of literature is defined as a broad comprehensive, systematic and critical, review of scholarly publication, unpublished materials and personal communication. It helps the researchers to develop insight into problem stated. This chapter discusses the review of literature pertinent to the study.

PART-1

The review of literature is presented under following headings,

SECTION-A: Studies related to Prevalence and Relief measures for fever among children

SECTION-B: Studies related to Warm Water Foot Bath Therapy

SECTION-C: Studies related to effectiveness of Warm Water Foot Bath Therapy for Fever.

SECTION-A: Studies related to Prevalence and Relief measures for Fever

Tony m. Aluka et al (2019) conducted a study to compare the effect of cold water sponging and acetaminophen on 88 children aged 12 to 120 months with fever. The study finding concluded that cold water sponging, although producing rapid reduction in temperature, compared to Paracetamol, has effects that lasts only for a short time. Paracetamol produces a gradual and sustained effect.

Sanjana Thota et al (2018) assessed the fever awareness and management practices among parents of underfive children in urban India. The respondents of this study were one hundred parents of underfive children with history of fever, randomly selected and interviewed using a predesigned tool. The study findings concluded that fever awareness was fair among urban parents. Mother had better awareness than the father, management practices in underfive children is desirable among urban parents to reduce misuse of antibiotics and antipyretics.

Namrata Prasat et al (2015) estimated the prevalence of fever and relationship with malaria among children in low resource areas. Demographic and health survey data were used and the results showed that fever and isolated fever occurred in 26.7% and 7% of children respectively not fully explained by malaria.

Gholamreze Solimani, et al (2014) evaluated the common causes of fever of unknown origin in 1100 children aged 3months to 15 years. The study revealed that the common causes were infectiousdiseases (55.1%), collagen vascular (4.6%), neoplasm (6.7%), miscellaneous (23.3%) and undiagnosed (10.3%). The study concluded that most fever of unknown origin result from a typical presentation of common diseases like Tuberculosis, Salmonelosis, Brucellosis and Pneumonia.

Mazyanga Lucy et al (2014) conducted a study on prevalence of dengue fever specific immunoglobulin G antibodies in Western and North Western provinces of Zambia among 3624 persons by adopting the randomized cluster sampling method. The study revealed that 63% children (below 5 years) were infected with dengue virus compared to those aged 4-5 years or older. The study provided the first evidence of dengue infection circulation in North-Western provinces of Zambia.

Jacob Novignon (2012) evaluated a study on socioeconomic status and the prevalence of fever by demographic health survey from sub-Saharan African countries among 38,990 children aged below five years. A multi-level random effect logistic model was fitted to examine the socioeconomic factors that prevalence of fever in the weeks preceding the survey. This study concluded that 85% of children have fever in Ghana, Nigeria.

Joao Gulihormebezerraalver et al (2008) compared the effect of tepid sponging plus dipyrone versus dipyrone alone for reducing body temperature among 106 children in a randomized clinical trial. The conclusion was tepid sponging plus dipyrone cooled faster during the first 15 minutes but dipyrone alone presented better. Fever control over the two - hour period. Tepid sponging caused mild discomfort, crying and irritability for most of the children.

Liquathamneh al(2014) investigated parents knowledge , attitudes and beliefs regarding childhood Fever. By adopting survey based cross-sectional study was carried out with convenient sampling technique. The study concluded that parents often misuse the antipyretic medications, incorrectly manage their child's fever and follow inappropriate practices to reduce fever and also poor knowledge of general information.

Leger A,Smith et al (2010) conducted an experimental study to evaluate the effectiveness of tepid sponging among 40 children aged 5 months to 5 years with fever by adopting randomized sampling technique. The study revealed that sponge bath subjects cooled faster during first hour but there was no significant temperature difference between two study groups. On the other hand subjects in the sponge bath group had significantly higher discomfort scores due to shivering as a result of rapid cooling in cold sponging. The study concluded that tepid sponging was effective for reducing temperature but it was producing more discomfort.

Yadav P, et al (2008) conducted a study on prevalence of rheumatic fever among 9526 school children aged 5-16 years old by adopting a randomized sampling method. The study revealed that prevalence of rheumatic fever among school children in Indore district is found to be 65.3%. The study concluded that the prevalence of rheumatic fever has been increased at recent years.

SECTION-B: Studies related to Warm Water Foot Bath Therapy

Hagar Fathey Shafeik et al (2018) evaluated the effect of warm water foot bath on fatigue in patient undergoing hemodialysis by adopting non – equivalent control group design. Data was collected using demographic sheet, Fatigue Severity Scale and bath thermometer. A significant reduction was reported between the pretest and post test score. The study concluded that Warm Water Foot Bath Therapy is effective in reducing fatigue among patients who are undergoing hemodialysis.

Allehe Seyyedra Sooli et al (2013) conducted a study to assess the effect of Warm Water Foot Bath Therapy on sleep quality through a blinded randomized clinical trial with 46 old men. The study assessed the sleep level by using the Pittsburgh Sleep Quality Index (PSQI) before and after the intervention. The study concluded that the maximum effect of foot bath was increased sleep duration and sleep quality.

BehlR.K, et al(2013) assessed the physiological effects of mild foot bath at Graduate School of Health and Welfare in Japan among 31 students by adopting non probability convenient sampling technique. The study revealed that subcutaneous blood flow increased in the lower limb during the foot bath. The study concluded that two-thirds of subjects experienced a true rest as well as mental relaxation during the foot bath.

Soumia Susan Sam (2012) assessed the effectiveness of foot bath therapy on fatigue among 30 patients with chronic renal failure by adopting randomized sampling technique. The study revealed that there was a significant reduction in the fatigue among patients with chronic renal failure. The study concluded that foot bath therapy was reducing the fatigue among patients with chronic renal failure.

SECTION-C: Studies related to effectiveness of Warm Water Foot Bath Therapy for Fever.

Aileen christal Pereira et al (2017) conducted a quasi experimental study to evaluate the effectiveness of hot water foot bath therapy for children and recorded body temperature immediately in observational chart. Analysis showed that the experimental group post test mean temperature is ($99^{\circ} \text{ F} \pm 0.54$) and the pretest mean temperature is ($101.04^{\circ} \text{ F} \pm 0.81$). The study finding revealed that the hot water foot bath therapy is very effective.

Jobson Wilbert (2017) evaluated the effectiveness of hot water foot bath therapy on fever by adopting quasi experimental nonequivalent control group design. The mean post test temperature level after administration of intervention was 100.287 and the mean pretest level before administering intervention was 101.121. The study concluded that application of hot water foot therapy was found to be an effective measure in reducing temperature.

Stuti Sunar (2017) assessed the effect of Warm Water Foot Bath Therapy on fever in Pune. Pre experimental design was adopted for this study and purposive sampling technique was used to collect the sample. Data was collected through observational check list. The mean effect of the study at pre intervention was 101.04 ± 0.04 whereas in post intervention it was 99.37 ± 0.58 in experimental group. The result indicated that the level of temperature reduced in experimental group.

Pandichelvi (2016) conducted a quasi experimental study to evaluate the effectiveness of warm water footbath therapy on fever among 60 children with fever. The temperature was assessed by digital thermometer. The study revealed that the temperature was 102.23°F in pretest mean and 99.99°F in post mean. The result concluded that warm water foot therapy was effective for fever.

Lintueldo (2015) conducted a quasi experimental study to evaluate the warm water footbath therapy on fever among 60 children by adopting non probability purposive sampling technique. The study findings revealed that the mean pretest score of body temperature was 100.30 ± 1.12 and the mean post test score of the body temperature was 98.90 ± 0.579 . The study concluded that Warm Water Foot Bath Therapy was effective in reducing the level of body temperature.

Ishitamandal (2014) investigated through quasi experimental study with non-equivalent control group time series design. The study was conducted on Warm Water Foot Bath Therapy on 30 children with fever in the pediatric unit at Calcutta by adopting non probability purposive sampling technique. Temperature was assessed before and after giving intervention. The study concluded that Warm Water Foot Bath Therapy is more effective in reducing level of temperature among children with fever.

Maria Gradin (2012) conducted a study on effectiveness of Warm Water Foot Bath Therapy and antipyretic drugs versus only antipyretic drug in the management of fever among 150 children by adopting the randomized control trial. The result revealed that the reduction of body temperature in the Warm Water Foot Bath Therapy and antipyretic group was significantly faster than only antipyretic group. The study concluded that Warm Water Foot Bath Therapy was effective for reduction of level of temperature among children.

Selvakumari (2011) conducted a quasi experimental study by using one group pre and post test design on effect of Warm Water Foot Bath Therapy among 60 children with fever. The study revealed that there was a significant reduction in temperature after the application of Warm Water Foot Bath Therapy. The pretest mean score was 101.26 and the post test mean score was 100.2. The study concluded that hot water foot bath therapy is more effective in reducing level of temperature among client with fever.

Sindhu Joseph (2011) conducted a study to assess the effectiveness of Warm Water Foot Bath Therapy on level of temperature among 40 children aged 6-14 years with fever by adopting purposive sampling technique. The study revealed that there was a significant reduction of temperature among children with fever. The study concluded that Warm Water Foot Bath Therapy was effective in reduction of body temperature in children.

PART II- CONCEPTUAL FRAMEWORK

The conceptual frame work for the study was based on general system theory developed by **Ludwig Won Bertalanffy in 1968**. This system theory explains dividing the whole thing into two parts and working together of these parts in system. According to this model, a system set of objects which are related between themselves and their attributes. The object contributing to the system behaves together as a whole. Changes in any part will affect whole system. All living system or open systems which means that they exchange energy matter and information across their boundaries with the environment general system theory consist of scientific explanation whole or wholeness; it has its sub system are input, through put, output. Input and output are the process by which a system is able to communicate and react with its environment.

INPUT

Refers to matter, energy and information enters in to the system and its boundary. In this study, input consists of demographic variables of age, gender, duration of fever, type of fever, range of fever, use of medications and the level of body temperature.

THROUGHPUT

Is a process that occurs at some point between the input and output process. It enables the input to be transformed in such a way that it can be readily acted by the system. In this study throughput was considered as intervention of Warm Water Foot Bath Therapy for 15 minutes.

OUTPUT

It is an energy information (or) matter that is transformed to the environment. The level of body temperature was reduced after Warm Water Foot Bath Therapy. This output was evaluated by post test observation after intervention. This is ultimately resulting in improvement of quality of care.

THE EFFECT OF WARM WATER FOOT BATH THERAPY ON REDUCTION OF BODY TEMPERATURE AMONG CHILDREN WITH FEVER

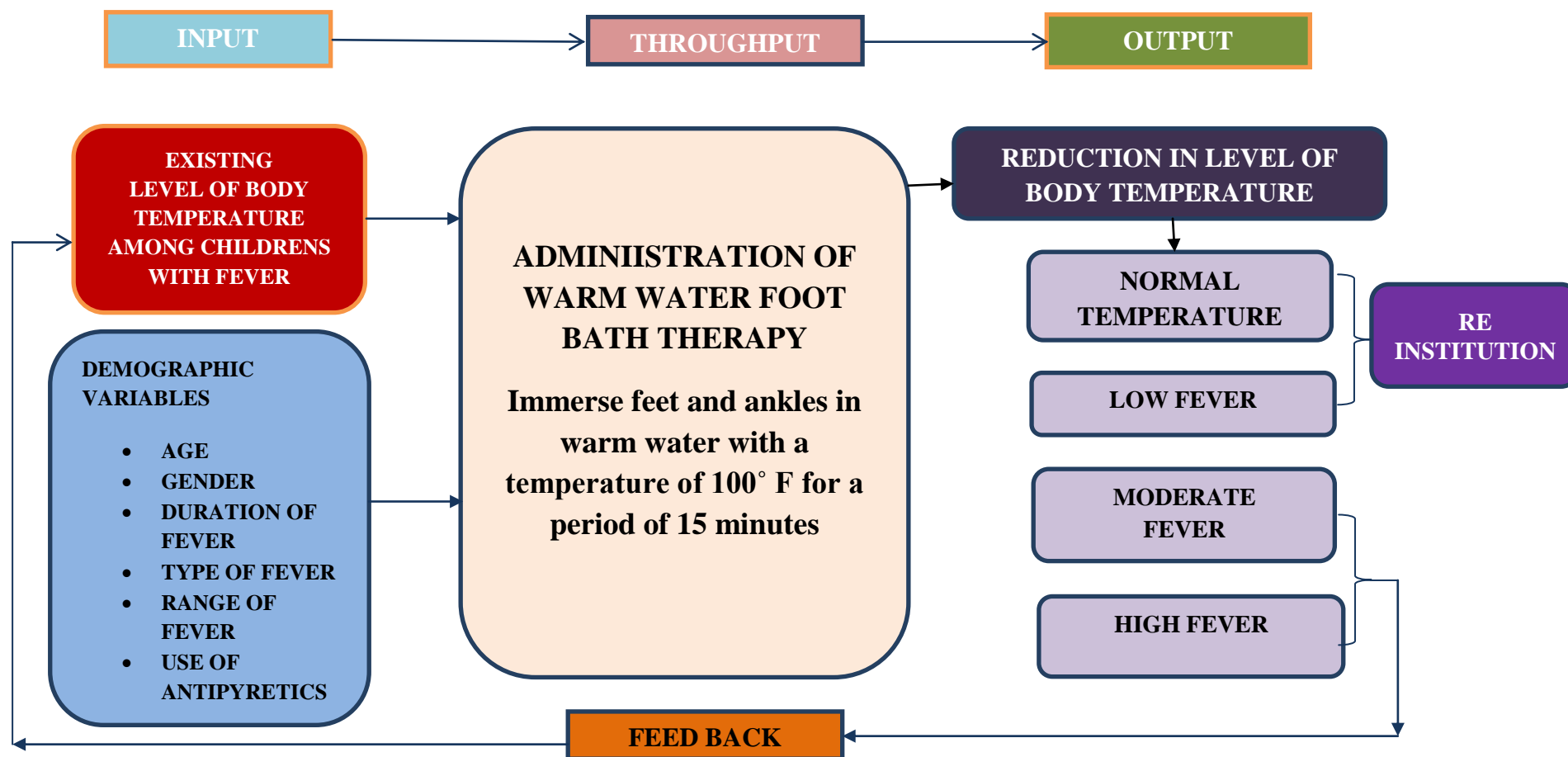


Fig.1 : General system theory by Ludwig WONBERTALANFFY in 1968.

CHAPTER III

RESEARCH METHODOLOGY

The chapter describes the methodology followed to assess the effectiveness of Warm Water Foot Bath Therapy among children with fever in in-patient and out-patient department in selected hospital, Perambalur.

RESEARCH APPROACH

Quantitative and evaluative research approach.

RESEARCH DESIGN

Quasi experimental -nonequivalent control group design.

	PRE TEST	INTERVENTION	POST TEST
EXPERIMENTAL GROUP	O1	X	O2
CONTROL GROUP	O1	-	O2

O1 - Pre test assessment of body temperature

X - Warm Water Foot Bath Therapy

O2 - Post test assessment of body temperature

VARIABLES

Independent Variable : Warm water foot bath therapy.

Dependent Variable : Body temperature

SETTING OF THE STUDY

Holy cross hospital at Perambalur.

POPULATION

Children with fever (4-14) years.

SAMPLE

Children with fever who met the inclusion criteria.

SAMPLE SIZE

60 children

30 children in experimental group,

30 children in control group.

SAMPLING TECHNIQUE

Purposive sampling technique.

DURATION OF STUDY

4 Weeks

CRITERIA FOR SAMPLE SELECTION**INCLUSION CRITERIA**

- i. Children whose body temperature was above 99° F.
- ii. Both male and female children in the age between 4 to 14 years.
- iii. Those who were willing to participate.

EXCLUSION CRITERIA

- i. Ulcer, lesion or any allergy in the leg.
- ii. Unable to assume sitting position.
- iii. Post operative children.
- iv. Children below 4 years.
- v. Not willing to participate.

DESCRIPTION OF DATA COLLECTION TOOL

Section I: It consists of questions to elicit demographic variables of children

Section II: Assessment of level of body temperature by standardized digital thermometer and temperature data sheet.

GRADING PROCEDURE

Grading Score	Category of Temperature
94.5-99°F	Normal
99.1-100°F	Low Fever
100.1-103°F	Moderate Fever
103.1-105° F	High Fever
>105.1°F	Hyper Fever

CONTENT VALIDITY

For content validity the research experts were requested to give their opinion about the content areas for its relevance and appropriateness of the items. Content validity obtained from five experts in the department of child health nursing.

RELIABILITY

The researcher has adopted the standardized digital thermometer.

DATA COLLECTION PROCEDURE

Data collection was done from 04.03.2019 to 30.03.2019 in Holy Cross Hospital at Perambalur. A prior permission was obtained from the authorities of Holy Cross Hospital. The study was conducted for a period of 4 weeks. Informed consent was obtained from the parents of the samples. On the same day pretest was done for the samples by using digital thermometer to measure the level of body temperature for both experimental and control group.

It is followed by administration of Warm Water Foot Bath Therapy once for 15 minutes for experimental group and for control group routine care was given. Post test was obtained after 5 minutes of the intervention to the experimental and control group.

PLAN FOR DATA ANALYSIS

It was planned to analyze the collected data by using descriptive and inferential statistics

DESCRIPTIVE STATISTICS

Frequency and percentage distribution will be used to analyze the demographic variables and level of fever among children in selected hospital.

Mean and standard deviation to describe the fever.

INFERENTIAL STATISTICS

The paired 't' test will be used to assess the effectiveness within group and independent 't' test will be used to assess the effectiveness of Warm Water Foot Bath Therapy.

Chi square test will be used to find out the association of post test level of body temperature with their selected demographic variables.

ETHICAL CONSIDERATION

The study was performed after getting approval from the dissertation ethical committee of THANTHAI ROEVER COLLEGE OF NURSING, Perambalur.

Permission was obtained from the authorities of Holy Cross Hospital.

The written consent was obtained from each study participant before collecting the data.

Confidentiality was maintained throughout the study.

PILOT STUDY

The pilot study was done at government hospital from 25.02.2019 to 02.03.2019 to test the feasibility, relevance and practicability. Permission was obtained from the nursing superintendent of the hospital. The objectives of the study were explained to the nursing superintendent. The purpose of the study was explained to the mothers of the children with fever and got the consent. In this study 10 children with fever were selected and allotted to experimental group and control group. As the pilot study was feasible it was decided to precede the main study without any modification.

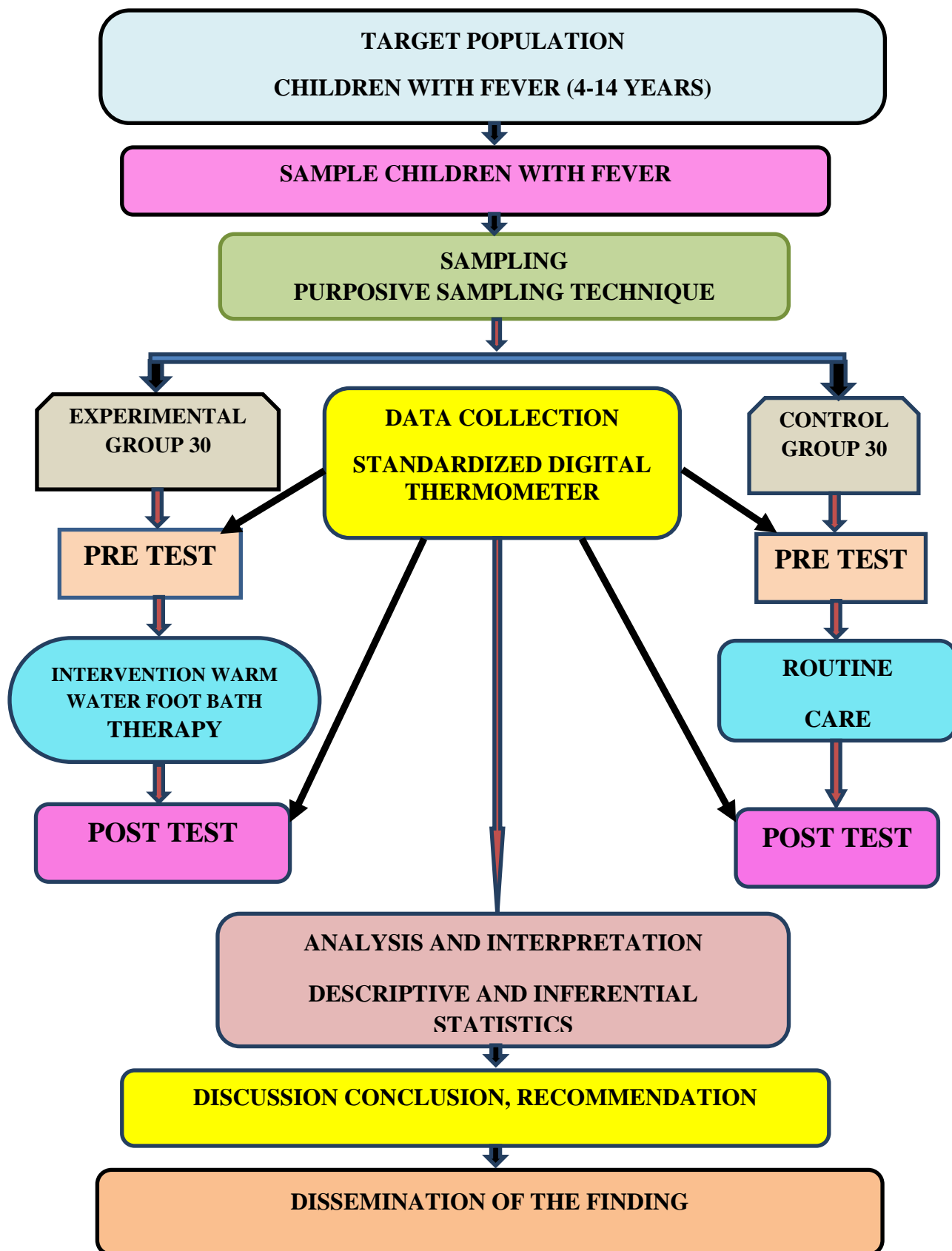


Fig.2: SCHEMATIC REPRESENTATION OF RESEARCH METHODOLOGY

CHAPTER-IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of data collected from 60 children with fever, Data analysis is a process of organizing and synthesizing the data in such a way that the research question can be answered and hypothesis tested.

The data collected for the study were grouped and analyzed as per the objectives set for the study. The findings based on the descriptive and inferential statistical analysis were presented under the following sections.

ORGANIZATION OF DATA

The findings of the study were grouped and analyzed under the following sessions.

SECTION A

Description of the demographic variables of children with fever.

SECTION B

Pre and post test level of body temperature among children with fever in experimental and control group.

SECTION C

Comparison of pre and post test mean body temperature among children with fever in experimental group and control group.

SECTION D

Association of post test level of body temperature among children with fever and their selected demographic variables in experimental group.

SECTION A

Table 1: Frequency and percentage distribution of demographic variables of the children with fever

N=60 (30+30)

Demographic Variable	Experimental Group		Control Group	
	f	%	f	%
Age in years				
4-7	16	53	18	60
8-11	8	27	9	30
12-14	6	20	3	10
Gender				
Male	18	60	18	60
Female	12	40	12	40
Duration of fever in days				
one	6	20	7	24
Two	12	40	12	40
Three	10	33	10	33
Above 3	2	7	1	3
Type of fever				
Intermittent	26	87	24	80
Continuous	4	13	6	20
Range of fever				
Low	8	27	10	33
Moderate	21	70	17	57
High	1	3	3	10
Hyper	0	0	0	0
Use of medications				
Yes	25	83	23	77
No	5	17	7	23

Table 1 describes that in experimental group, majority 16(53%) of children were in the age group of 4-7 years, 18(60%) were male children, 12(40%) had fever for two days, 26(87%) children had intermittent fever, 21(70%) had moderate fever and 25(83%) were on treatment with medications.

In the control group, majority 18(60%) were in the age group of 4-7 years, 18(60%) were male children, 12(40%) children had fever for two days, 24(80%) had intermittent fever, 17(57%) had moderate fever, and 23(77%) were on treatment with medications.

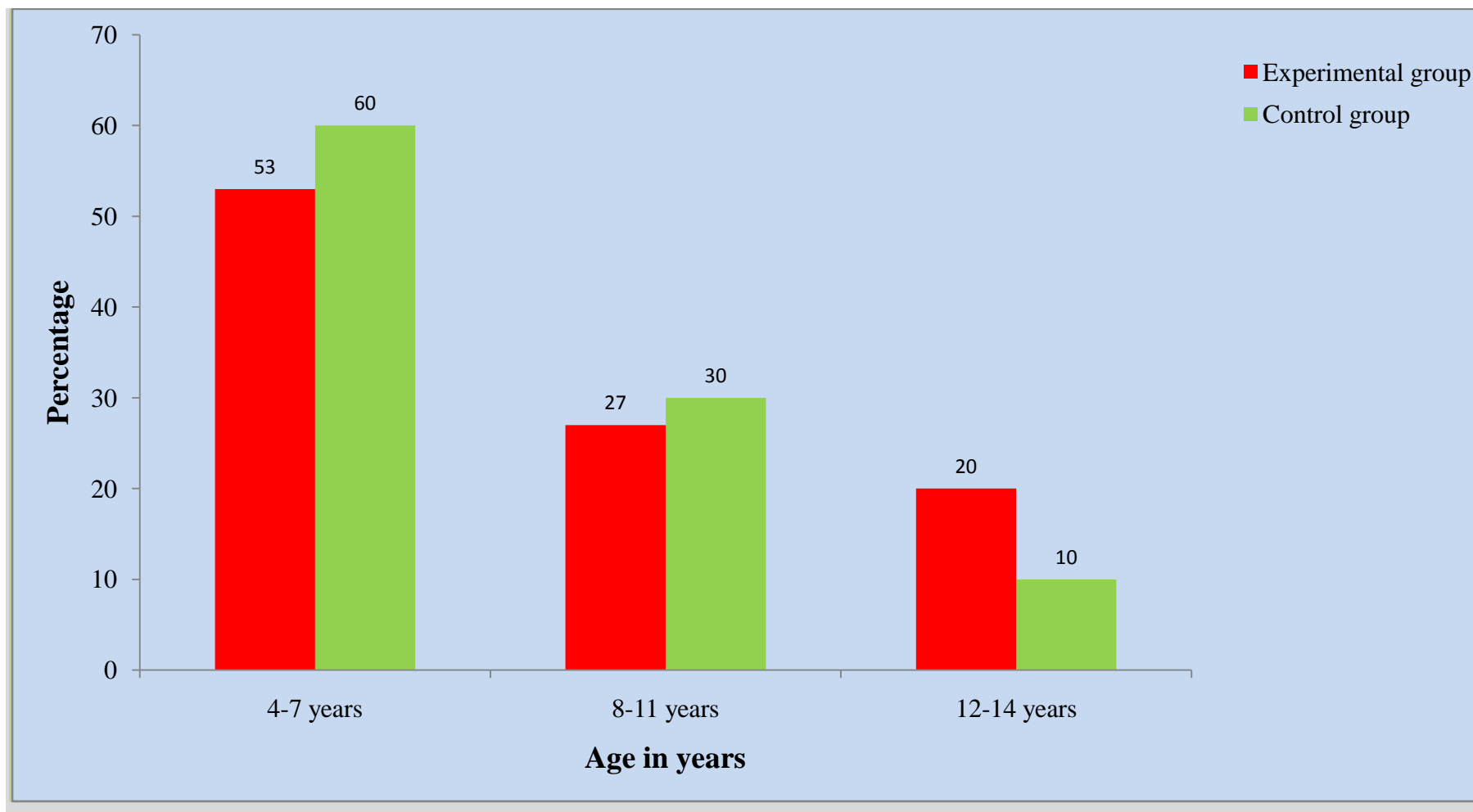


Fig. 3: Percentage distribution of age of children with fever

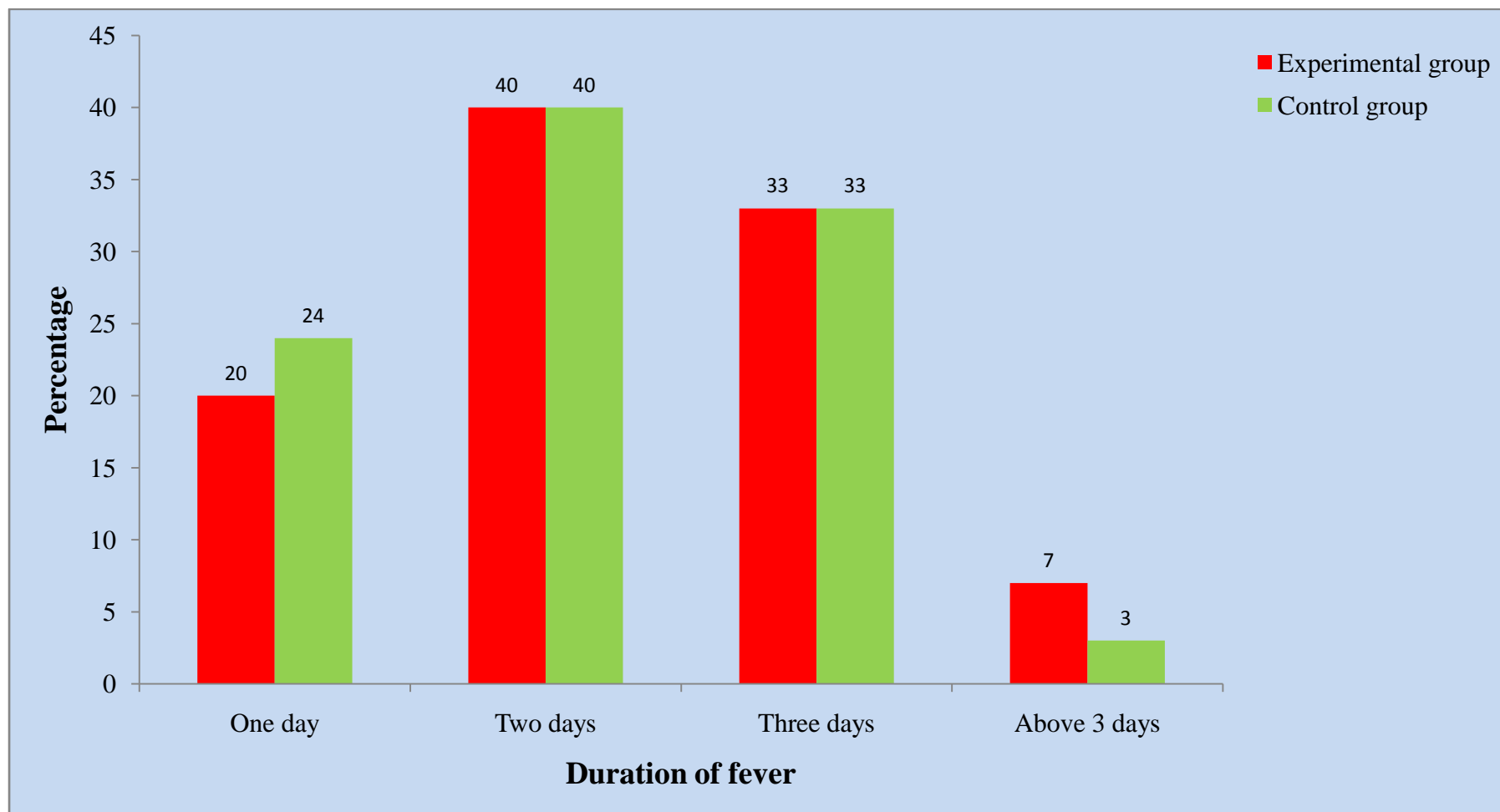


Fig. 4: Percentage distribution of duration of fever among children with fever

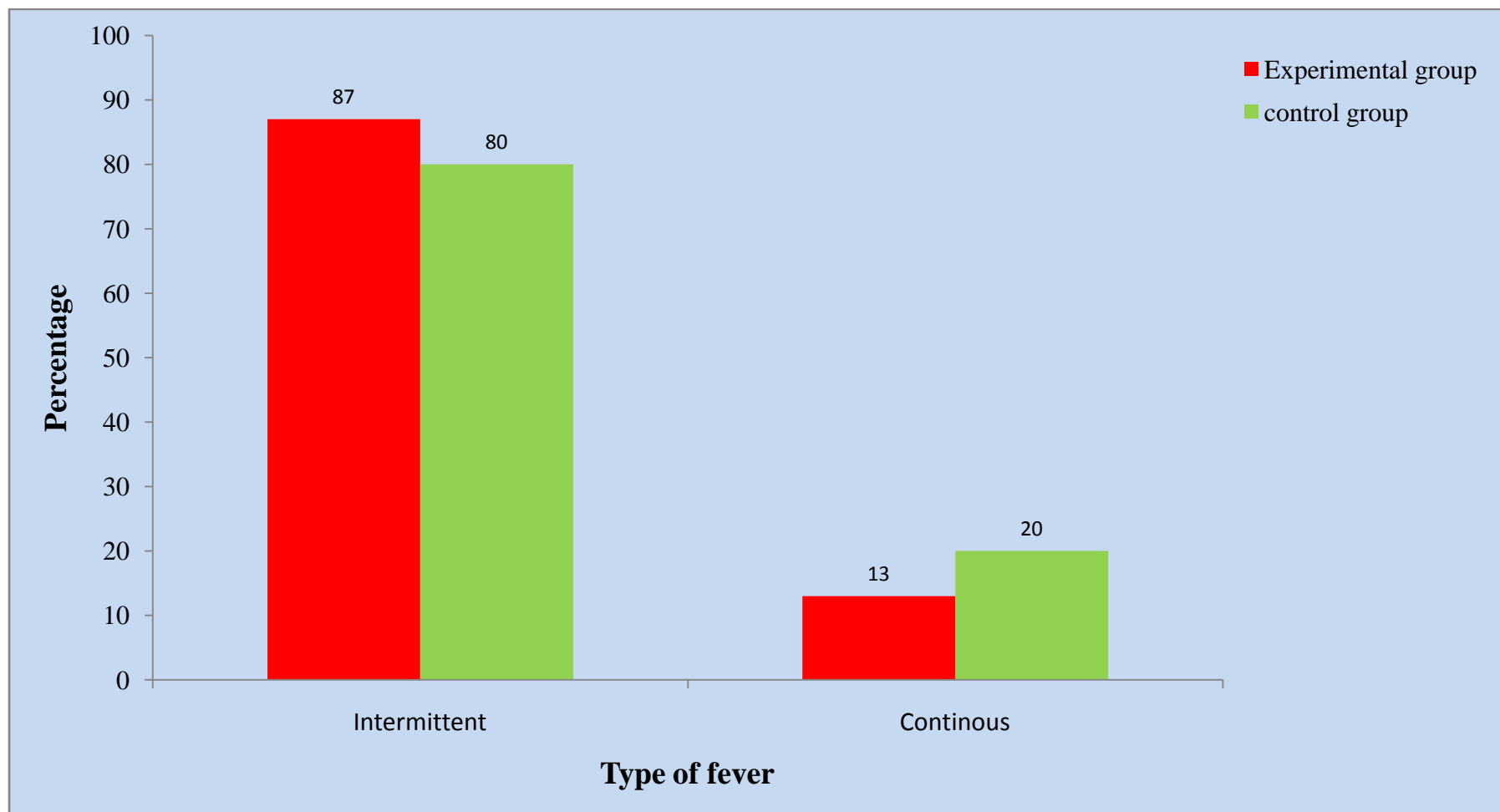


Fig. 5: Percentage distribution of type of fever among children with fever

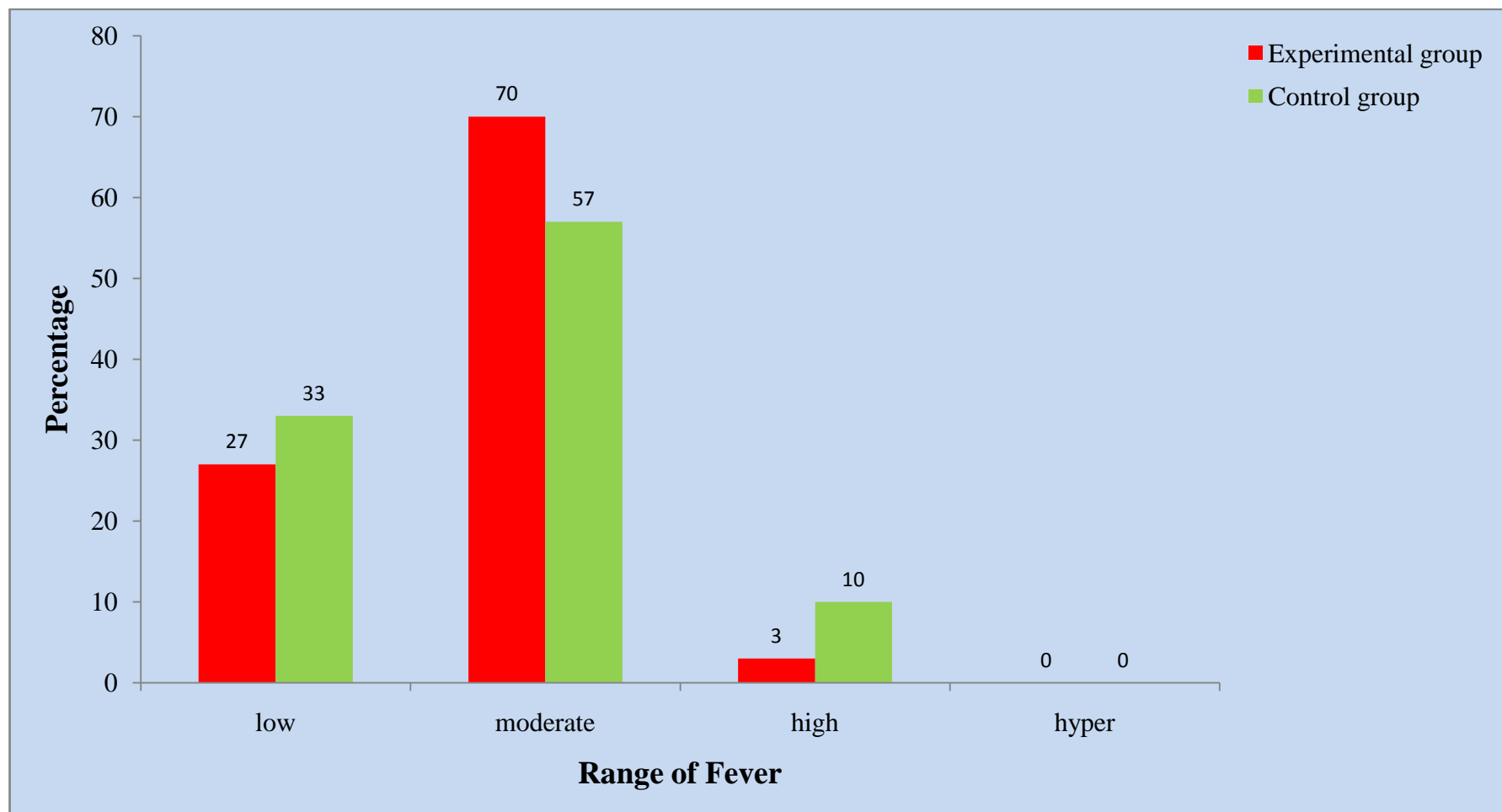


Fig. 6: Percentage distribution of Range of fever among children with fever

SECTION-B

Table-2 : Frequency and percentage distribution of pre and post test level of body temperature among children with fever in experimental group.

N=30

Level of body temperature	Pre test		Post test	
	f	%	f	%
Normal (94.5-99°F)	0	0	11	37
Low Fever (99.1-100°F)	7	23	11	37
Moderate Fever (100.1-103°F)	21	70	8	26
High Fever (Above 105.1°F)	2	7	0	0

Table 2 shows that in the pretest majority of children 21(70%) had moderate fever, 7(23%) had low fever and 2(7%) had high fever in experimental group.

In the post test majority 11(37%) had normal body temperature, 11(37%) had low fever and 8(26%) only had moderate fever.

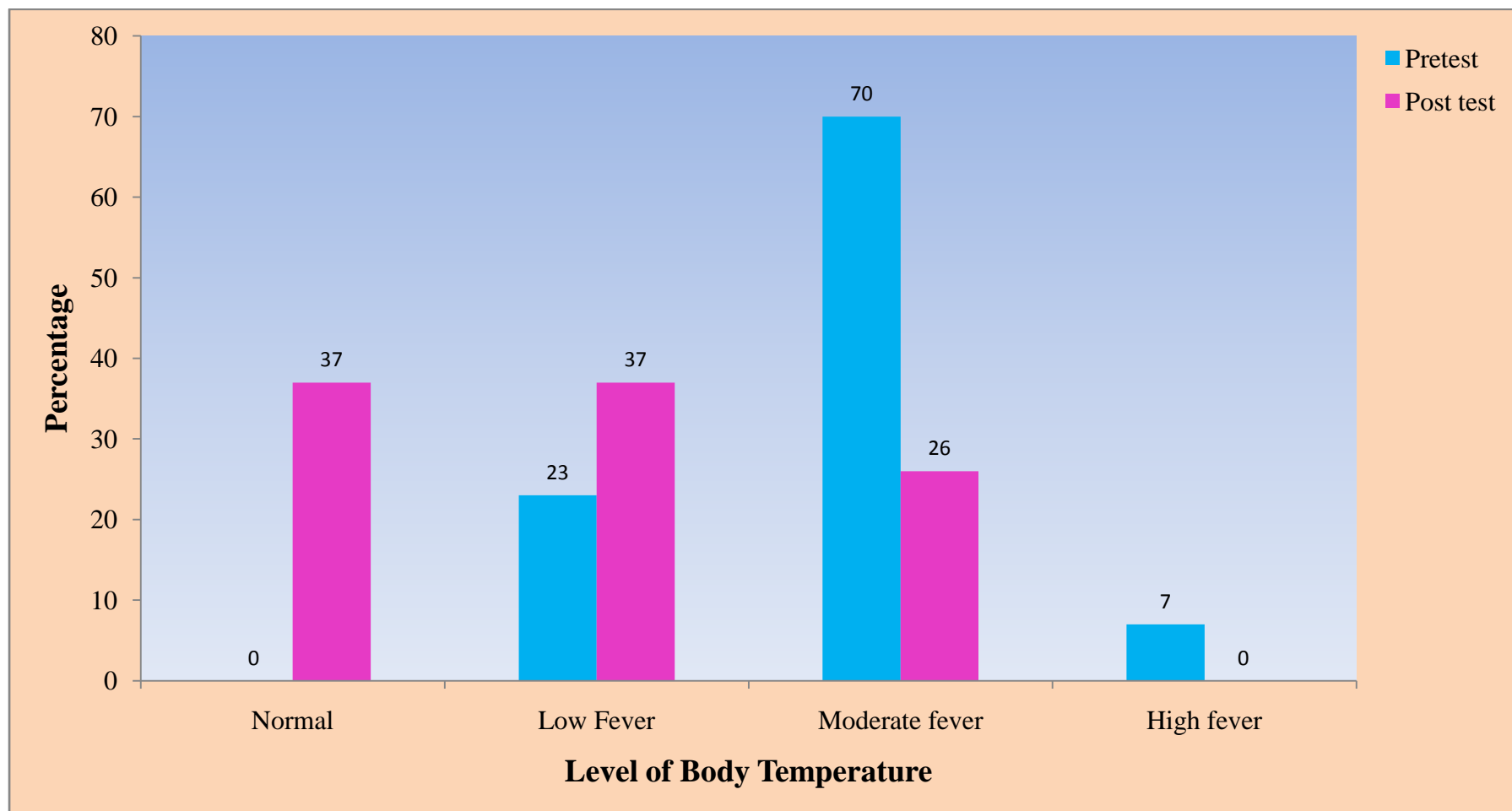


Fig. 7: Percentage distribution of pre and post test level of body temperature among children with fever in experimental group.

Table-3 : Pre and Post test level of body temperature among children with fever in control group.

N=30

Level of body temperature	Pre test		Post test	
	f	%	f	%
Normal (94.5-99°F)	0	0	0	0
Low Fever (99.1-100°F)	10	33	10	33
Moderate Fever (100.1-103° F)	17	57	17	57
High Fever (Above 105.1°F)	3	10	3	10

Table 3 shows that in the pretest majority of children 17(57%) had moderate fever. 10(33%) had low fever, and 3(10%) had high fever in control group.

In the post test majority 17(57%) had moderate fever 10(33%) had low fever and 3(10%) had high fever.

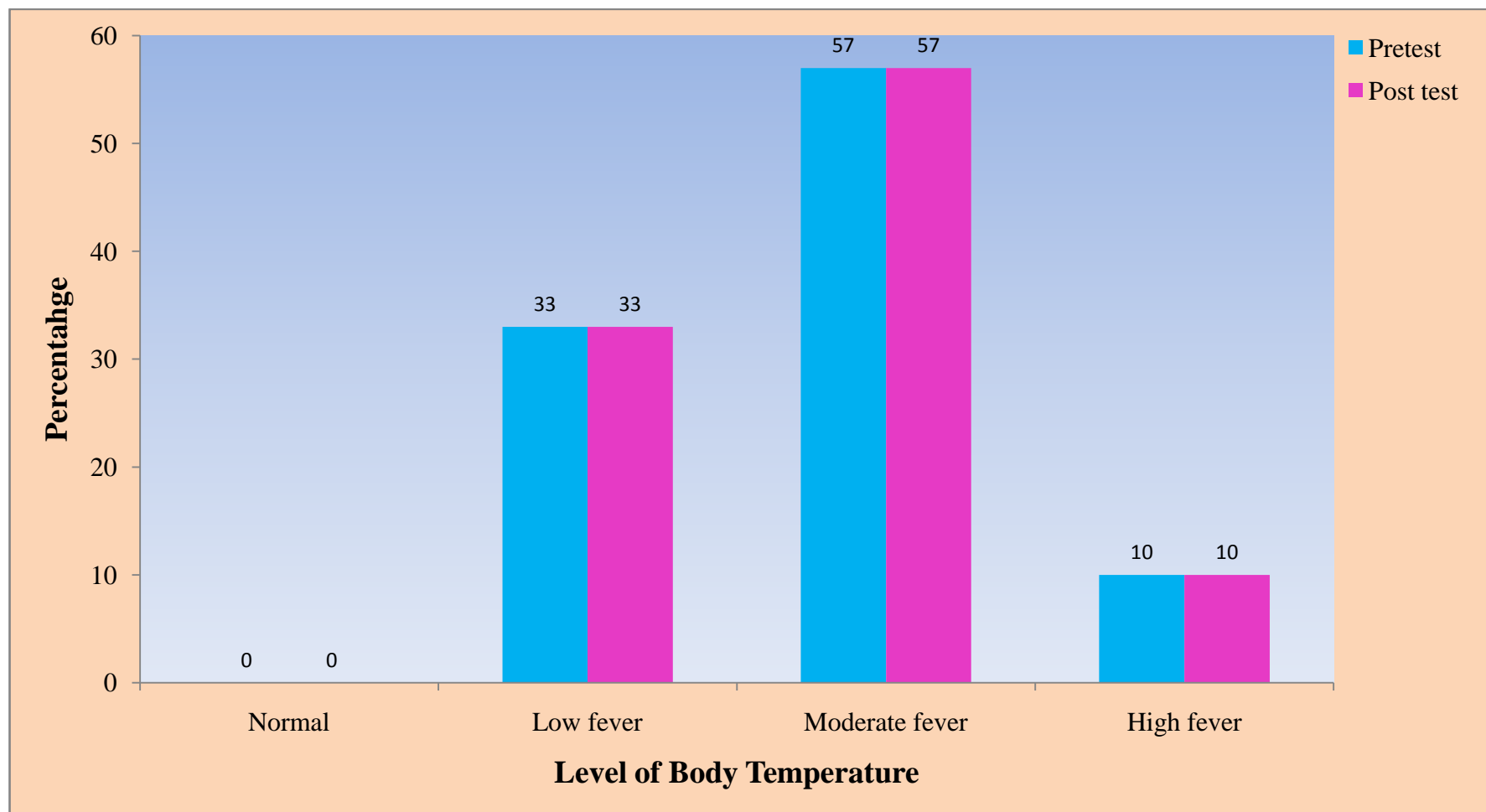


Fig. 8: Percentage distribution of pre and post test level of body temperature among children with fever in control group.

SECTION – C

Table - 4: Comparison of pre and post test mean body temperature among children with fever in experimental group.

N=30

Level of body temperature	Mean	S.D	Mean difference	“t” value
Pretest	101.23	1.24	1.59	10.56 S*
Post test	99.64	1.01		

P<0.05 (S*=significant)

Table 4 shows that the pretest mean body temperature was 101.23 ± 1.24 and the post test mean body temperature was 99.64 ± 1.01 . The mean difference was 1.59 and the calculated “t” value 10.56 was significant at $P < 0.05$ level.

Table - 5: Comparison of pre and post test mean body temperature among children with fever in control group .

N=30

Level of body temperature	Mean Body Temperature	S.D	Mean Difference	“t” value
Pretest	100.94	1.24	0.01	0.26 NS
Post test	100.9	1.23		

P<0.05 (NS= Not Significant)

Table 5 shows that the pretest mean body temperature was 100.94 ± 1.24 and the post test mean body temperature was 100.9 ± 1.23 . The mean difference was 0.01 and calculated “t” value 0.26 was not significant at P <0.05level.

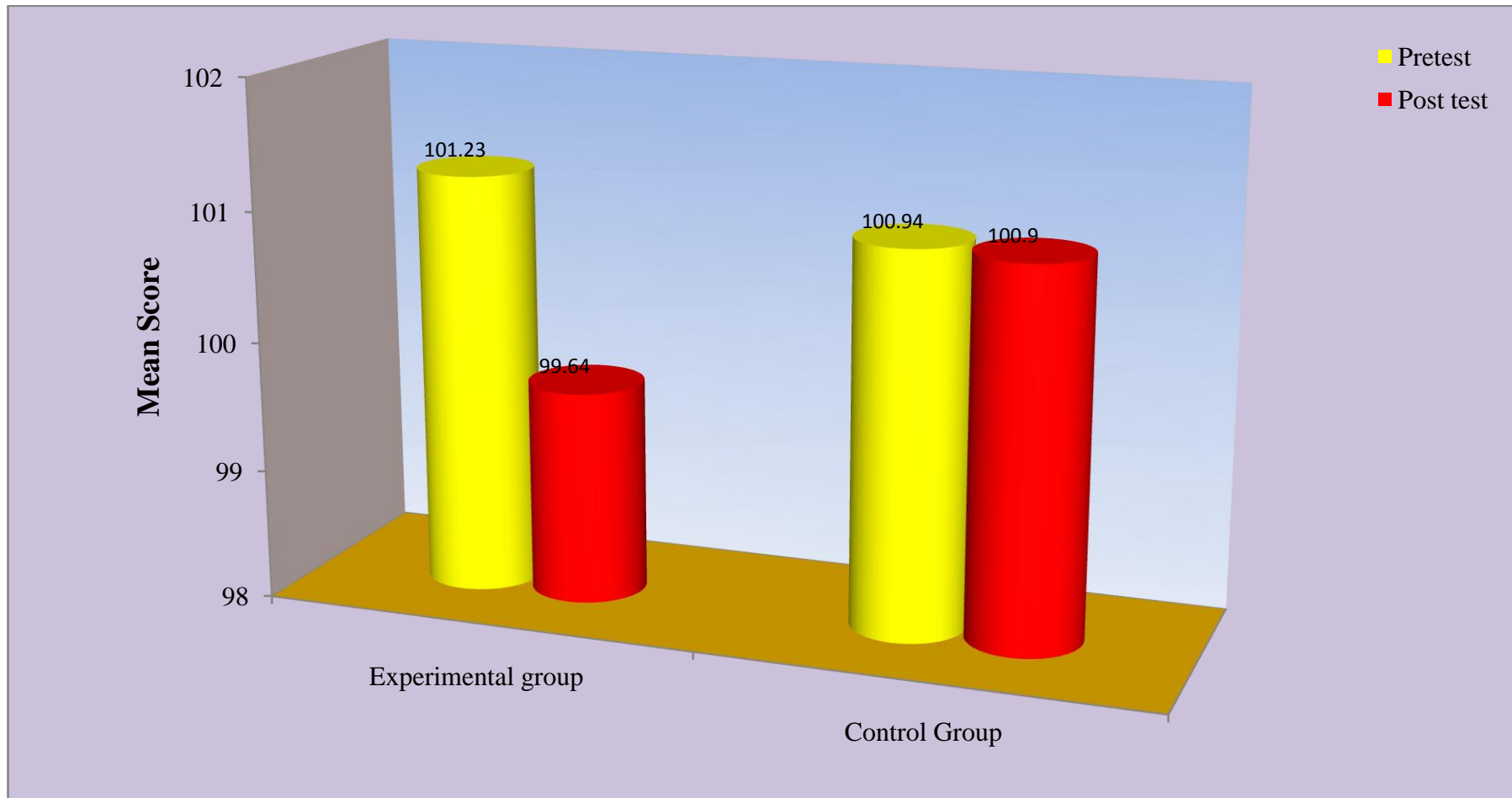


Fig.9: Comparison of pre and post test mean body temperature among children with fever in experimental and control group

Table-6: Comparison of post test mean body temperature of children with fever between experimental and control group.

N= 60 (30+30)

Group	Mean body Temperature	S.D	Mean difference	“t” value
Experimental	99.64	1.01	1.26	4.90 S*
Control	100.9	1.23		

P < 0.05 (S* = Significant)

Table 6 shows that the post test mean body temperature in experimental group was 99.64 ± 1.01 and in control group was 100.9 ± 1.23 . Mean difference was 1.26. The calculated “t” value 4.90 was significant at $P < 0.05$ level.

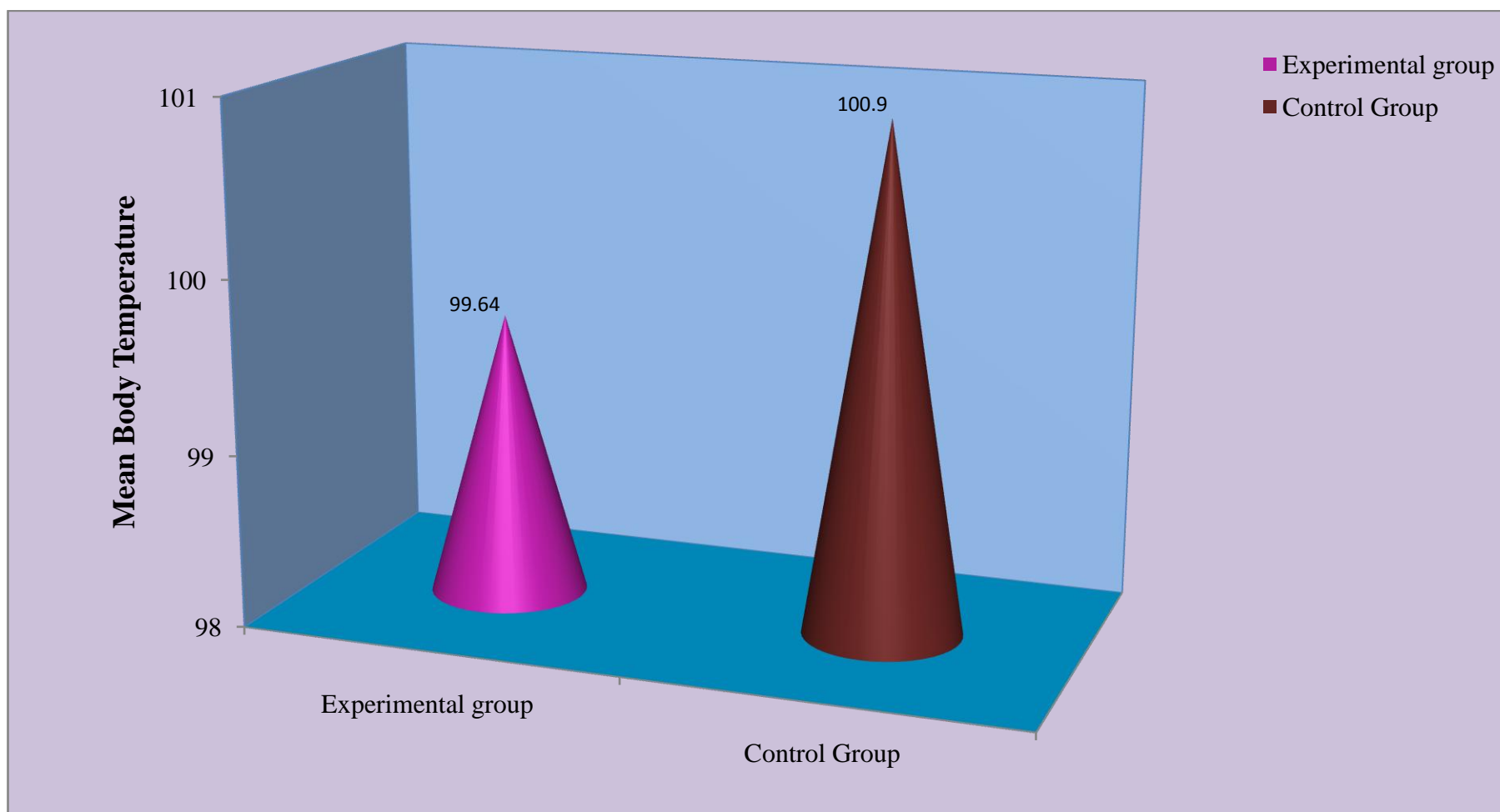


Fig.10: Comparison of post test mean body temperature of children with fever between experimental and control group

Table 7: Association of post test level of body temperature among children with fever and their selected demographic variables in experimental group.

N=30

Demographic variables	Normal (94.5-99°F)	Low fever (99.1-100°F)	Moderate fever (100.1-103°F)	Chi square Value
	f	f	f	
Age in years				$x^2 = 1.638$ NS
4-7	7	6	4	
8-11	2	2	3	
12-14	2	3	1	
Gender				$x^2 = 0.556$ NS
Male	6	8	4	
Female	4	4	4	
Duration of fever in days				$x^2 = 1.586$ NS
One	2	2	2	
Two	5	5	2	
Three	3	4	3	
Above 3	1	1	-	
Type of fever				$x^2 = 1.285$ NS
Intermittent	10	10	6	
Continuous	1	1	2	
Range of fever				$x^2 = 13.222$ S*
Low	7	-	1	
Moderate	5	10	6	
High	-	-	1	
Hyper	-	-	-	

Demographic variables	Normal (94.5-99°F)	Low (99.1-100°F)	Moderate (100.1-103°F)	Chi square Value
	f	f	f	
Use of medications				x ² = 0.293 NS
Yes	9	8	8	
No	2	2	1	

Table 7 shows that the demographic variable ranges of fever have shown statistically significant association with the post test level of body temperature among children with fever.

There was no significant association found between the age, gender, duration of fever, type of fever and use of medications.

CHAPTER-V

DISCUSSION

The main aim of the study was to assess the effectiveness of Warm Water Foot Bath Therapy on reduction of body temperature among children with fever.

This chapter deals with the discussion of the data analyzed based on the objectives of the study.

The first objective of the study was to assess the level of body temperature among children with fever.

In pretest majority of the children 70% had moderate fever. 23% had low fever and 7% had high fever and in post test 37% had normal, 37% had low fever and 26% had moderate fever in experimental group.

In pretest majority of the children 57% had moderate fever. 33% had low fever and 10% had high fever in post test 57% had moderate fever, 33% had low fever and 10% had high fever in control group.

The second objective of the study was to evaluate the effectiveness of Warm Water Foot Bath Therapy on reduction of body temperature among children with fever in experimental group.

The pretest mean body temperature was 101.23 ± 1.24 and the post test mean body temperature was 99.64 ± 1.01 . The calculated “t” value 10.56 was significant at $P < 0.05$ level in experimental group.

The pretest mean body temperature was 100.94 ± 1.24 and the post test mean body temperature was 100.9 ± 1.23 . The calculated “t” value 0.26 was not significant at $P < 0.05$ level in control group.

The post test mean body temperature in experimental group was 99.64 ± 1.01 and in control group was 100.9 ± 1.23 . The mean difference was 1.26 and the calculated “t” value was 4.90 was significant at $P < 0.05$ level.

Based on the above findings the stated hypothesis,

H1: There is a significant reduction in body temperature among children with fever who receive warm water footbath therapy was accepted.

The third objective of the study was to determine the association between the post test level of body temperature among children with fever and their selected demographic variables in experimental group.

The demographic variables age, gender, duration of fever, type of fever, range of fever and use of medication had not shown statistically significant association with post test level of body temperature among children with fever.

Hence the stated hypothesis,

H2: There is a significant association between the post test level of body temperature among children with fever and their selected demographic variables in experimental group was not accepted.

CHAPTER-VI

SUMMARY, MAJOR FINDINGS, IMPLICATIONS, RECOMMENDATIONS AND CONCLUSION

This chapter is divided into two sections in the first section summary major findings and conclusions were presented. In the second section, the implication in various areas of nursing practice, nursing education, nursing administration, nursing research and recommendation of further study were presented.

SUMMARY OF THE STUDY

The main objective of the study was to assess effectiveness of Warm Water Foot Bath Therapy on reduction of body temperature among children with fever in selected hospital at Perambalur.

A qualitative evaluative approach, quasi experimental non equivalent control group design was adopted for this study. Non probability purposive sampling technique was used to select the sample and the sample size was 60. Conceptual frame work – Ludwig Von Bertalanffy general system was used in this study. The tool selected for the present study is standardized digital thermometer to measure body temperature among children with fever. The intervention of Warm Water Foot Bath Therapy for 15 minutes for one time on the same day was done to experimental group only. The post test was done after 5 minutes of the intervention.

The collected data were analyzed by the descriptive and inferential statistics, interpreted in terms of objectives and hypotheses of the study. The study revealed that Warm Water Foot Bath Therapy is effective in reduction of the body temperature in children with fever.

I MAJOR FINDINGS OF THE STUDY

- Majority 53% of children in experimental group and 60% in control group belongs to age group of 4-7 years.
- Majority 60% of the children were male in both experimental and control group.
- Majority 40 % had fever for two days in both experimental and control group.
- Majority 80% of children had intermittent fever in experimental group and majority 87% of children in control group had intermittent fever.
- Majority 70 % of children had moderate fever in experimental group and majority 57% of children in control group had moderate fever.
- Majority 83 % of children in experimental group and majority 77% in control group were on treatment with medication.

II FINDINGS RELATED TTD SUTDY INTERVENTION

1. In Pretest, majority 70% of children had moderate fever where as in the post test majority 37% had normal body temperature in the experimental group.
2. Both in pre and post test majority 57% of the children had moderate fever in control group.
3. The Pretest mean of body temperature in experimental group was 101.23 ± 1.24 and the Post test mean body temperature was 99.64 ± 1.01 . The mean difference was 1.59, and the calculated "t" value 10.56 was significant at $p < 0.05$.
4. The pre test mean of body temperature in control group was 100.94 ± 1.23 and the post test mean body temperature was 100.9 ± 1.23 . The mean difference was 0.01. The calculated t value 0.26 was not significant at $p < 0.05$.

5. The post test mean body temperature in experimental group was 99.64 ± 1.01 whereas in the control group was 100.9 ± 1.23 , The mean difference was 1.26 and the calculated 't' value 4.90 was significant at $p < 0.05$.
6. The demographic variable range of fever had shown significant association and other demographic variables had not shown significant association with the post test level of body temperature among children with fever in experimental group.

IMPLICATIONS

The findings of the study have implication in various areas of nursing practice, nursing education, nursing administration and nursing research.

IMPLICATION FOR NURSING PRACTICE

- ❖ Appreciate the importance of Warm Water Foot Bath Therapy.
- ❖ Demonstrate the procedure of Warm Water Foot Bath Therapy
- ❖ Encourage the care giver to use Warm Water Foot Bath Therapy as a complimentary therapy for patient with fever.
- ❖ The nurse should contribute to the evidence based practice through the experience gained from Warm Water Foot Bath Therapy to reduce the body temperature.

IMPLICATION FOR NURSING EDUCATION

- ❖ The nurse educator should be oriented, guided and trained in Warm Water Foot Bath Therapy among children with fever.
- ❖ Demonstrate the procedure of Warm Water Foot Bath Therapy to the students.
- ❖ Teach the importance of Warm Water Foot Bath Therapy for the students.

- ❖ Encourage and bring into practice about the Warm Water Foot Bath Therapy in clinical posting.

IMPLICATION FOR NURSING ADMINISTRATION

- ❖ Nursing administrator can formulate protocols and organize continuing nursing education program on in-service education program for health professional regarding the effectiveness of Warm Water Foot Bath Therapy among children with fever.
- ❖ Conduct in-service education program and continuing nursing education program for effective Warm Water Foot Bath Therapy.
- ❖ Update their knowledge about current practices and treatment about effectiveness of Warm Water Foot Bath Therapy to reduce the fever through the journals ,conference and seminar.

IMPLICATIONS IN NURSING RESEARCH

- ❖ Promote effective utilization of research findings on children who had fever.
- ❖ Disseminate the findings of the research through conferences seminars and publishing in nursing journals.
- ❖ The study can be conducted in larger population to generalize the findings.

RECOMMENDATIONS

The study recommended the following future research:

- ❖ The similar study can be conducted in with larger sample for better generalizations.
- ❖ The study can be conducted in two different settings with similar facilities.
- ❖ The study can be conducted with different age group of people.

CONCLUSION

The purpose of this study was to assess the effectiveness of Warm Water Foot Bath Therapy among children with fever. From the above findings, it is evident that Warm Water Foot Bath Therapy is effective in reduction of body temperature among children with fever.

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ANNEXURE – I
LETTER SEEKING EXPERT’S OPINION FOR CONTENT
VALIDITY

From

301716651
II year M.Sc. (Nursing),
Thanthai Roever College of Nursing,
Perambalur – 621212

To

Respected Madam/ Sir

Sub : Requisition of content validity research tool regarding.

I am doing M.Sc. (Nursing) II year in Thanthai Roever College of Nursing, Perambalur, under the TamilnaduDr. M.G.R. Medical University, Chennai. As a partial fulfillment of my M.Sc. (Nursing) Degree program, I am conducting a research on **“A study to evaluate the effectiveness of Warm Water Foot Bath Therapy on reduction of body temperature among children with fever in selected hospital Perambalur”**. A tool has been developed for the research study. I am submitting the above stated for your valuable opinion, I will be thankful for your kind consideration. Kindly return it to the undersigned.

Thanking you

Place: Perambalur

Your Sincerely,

Date:

Reg.No.301716651

ANNEXURE - II
LIST OF EXPERT OPINION FOR CONTENT VALIDITY OF
RESEARCH TOOL

- 1. Prof .SherinG.Edwin M.Sc.(N).,**
Principal
Indira college of Nursing
Perambalur.

- 2. Prof. Parasakthi M.Sc.(N)**
Vice Principal
Sagunthala College Of Nursing
Trichy

- 3. Prof.Sangeetha M.Sc.(N)**
HOD in Child Health Nursing,
Vivekanandha College of Nursing
Tiruchengode.

- 4. Prof.ThirunagalingaPandiyar , M.Sc. (N)**
Faculty
Madurai Medical College.
Madurai

- 5. Dr.MahendranRamasamy M.D.,(Paed).,**
Consultant paediatrician
Perambalur

ANNEXURE - III
EVALUATION CRITERIA CHECK LIST FOR VALIDATION
INTRODUCTION

The expert is requested to go through the following criteria for evaluation. Three columns are given for responses and a column for remarks. Kindly place tick mark in the appropriate column and give remarks.

INTERPRETATION OF COLUMN

Column I : Meets the criteria

Column II : Partially meet the criteria

Column III : Does not meet the criteria

S.NO	Criteria	1	2	3	Remarks
1	Scoring <ul style="list-style-type: none"> • Adequacy • Clarity • Simplicity 				
2	Content <ul style="list-style-type: none"> • Logical sequence • Adequacy • Relevance 				
3	Language <ul style="list-style-type: none"> • Appropriate • Clarity • Simplicity 				
4	Practicability <ul style="list-style-type: none"> • It is easy to score • Does it precisely • Utility 				

Signature :

Name :

Designation :

Address :

Any other suggestion

ANNEXURE – IV
PERMISSION LETTER FOR RESEARCH PURPOSE

From

301716651
II year MSc (Nursing),
Thanthai Roever College of Nursing,
Perambalur.

To

Respected Madam/ sir,

I am doing II year M.Sc. Nursing in Thanthai Roever College Of Nursing Perambalur, under the Tamilnadu Dr.M.G.R medical university Chennai. As a partial fulfillment of my M.Sc. (Nursing) Degree programme. I am going to conduct A STUDY TO EVALUATE THE EFFECTIVENESS OF WARM WATER FOOT BATH THERAPY ON REDUCTION OF BODY TEMPERATURE AMONG CHILDREN WITH FEVER PERAMBALUR. I would like to select for my data collection. Hence I kindly request you to grant me permission to conduct my study in your hospital.

Thanking you

Place : Perambalur.

Date :

Your sincerely

301716651

ANNEXURE – V**CERTIFICATE OF ENGLISH EDITING****TO WHOMSOEVER IT MAY CONCERN**

This is to certify that **Reg No:301716651**, II-Year M.Sc. [Nursing] student of Thanthai Roever College of Nursing has done a dissertation study on **“A STUDY TO EVALUATE THE EFFECTIVENESS OF WARM WATER FOOT BATH THERAPY ON REDUCTION OF BODY TEMPERATURE AMONG CHILDREN WITH FEVER AT PERAMBALUR”**. This study was edited for English language appropriateness.

ANNEXURE - VI
DATA COLLECTION TOOL

DATA COLLECTION TOOL

SECTION I - DEMOGRAPHIC VARIABLES

Kindly furnish the following details by placing a tick mark in appropriate choice.

1. Age in years
 - a) 4-7 years
 - b) 8-11years
 - c)12-14 years
2. Gender
 - a) Male
 - b) Female
3. Duration of fever
 - a) one day
 - b) Two day
 - c) Three day
 - d) Above 3 days
4. Type of fever
 - a) Intermittent
 - b) Continuous
5. Range of fever
 - a) Low
 - b) Moderate
 - c) High
 - d) Hyper
6. Use of antipyretics
 - a) Yes
 - b) No

Section II

Assessment of level of body Temperature

BODY TEMPERATURE DATA SHEET

PRE TEST		POST TEST	
DATE / TIME	LEVEL OF BODY TEMPERATURE	DATE / TIME	LEVEL OF BODY TEMPERATURE