

A Study to Assess the Effectiveness of Warm Water Foot Bath on Well Being of Elderly People in a Selected Hospital, Guwahati, Assam

Kshetrimayum Rebis Devi¹, Mayengbam Benita Devi², Doli Deori³

M.Sc (Nursing), Rahman Institute of Nursing and Paramedical Sciences, Guwahati, Assam, India

Abstract: *Aim of the study : The study is to assess the effectiveness of warm water foot bath on well being of elderly people in a selected hospital, Guwahati, Assam. Objectives: 1.To assess the level of well being of elderly people. 2. To evaluate the effectiveness of warm water foot bath on level of well being of elderly people. 3. To determine the association of post- intervention of well being of elderly people with demographic variables. Material and Method: Pre-experimental one group pre-test post-test design, 40 elderly people were recruited from geriatric ward of Satribari Christian Hospital, Assam using purposive sampling technique. Demographic variables, Depression, Anxiety and Stress Scale (DASS21), Fatigue Assessment Scale (FAS) and Pittsburgh Sleep Quality Index (PSQI) was used to collect the data. Application of warm water foot bath was done and temperature was measured using thermometer. Result: The finding of the study revealed that out of 40 elderly people 12(30%) of the elderly people belongs to age group of 61-65years and 66-70 years, 27(42.5%) of the elderly people were female, 18(45%) of the elderly people completed high school, 12(30%) of the elderly people belongs to business and private employed, 36(90%)of the elderly people are married, 26(65%) of the elderly people gets support from children. Sleep medication were not prescribed for all 40(100%) of the elderly people. In the pre-intervention well being was not maintained by all i.e. 40 (100%) of the elderly people whereas in post-intervention, well being was not maintained by majority i.e 31(77.5%) of elderly people and only nine (22.5%) of the elderly people had normal well being. The mean of pre-intervention score of well being of elderly people (53.30) was lesser than the mean of post-intervention score of well being of elderly people (41.78). The calculated 't' value was 18.24 which was more than the tabulated value 2.02 (df 39) at $p < .001$. This shows that administration of warm water foot bath was effective in improving well being of elderly people. There was no significant association of post-intervention of well being of elderly people with the demographic variables at 0.05 level of significance. Conclusion: The study revealed that warm water foot bath was effective on well being of elderly people.*

Keywords: Warm water foot bath, well being, elderly people

1. Introduction

“To care for those who once cared for us is one of the highest honors.”

- Tia Walker

Worldwide, the age group of sixty years old and older is growing faster than any other age group. With this remarkable increase of older adults; promoting health and well-being becomes priority for ageing well. [1] WHO defines *Healthy Ageing* “as the process of developing and maintaining the functional ability that enables wellbeing in older age”. [2]

According to World Health Organization, between 2015 and 2050, the proportion of the world's population over 60 years will nearly double from 12% to 22%. By 2020, the number of people aged 60 years and older will outnumber children younger than five years. In 2050, 80% of older people will be living in low- and middle-income countries. [3]

The state of well-being is a multifaceted phenomenon in the older population which generally involves happiness, self-contentment, satisfying social relationships, and autonomy. [4]

Well-being is determined jointly by the interplay between individual characteristics and qualities of people's social environments, according to McNulty JK and Fincham FD. [5] Depression is a major mental health problem, which is yet to be recognized as an important public health

challenges. In India, elderly persons (60 years and above) constitute eight point six of the total population (India census 2011) which is projected to reach 19% by 2050. Thus, depression among elderly population is likely to be major cause of disease burden in the future. Depression is one of the most common illnesses in the elderly population. [6]

Globally, 15% of the elderly population is suffering from mental disorders, and stress is one major mental health problem affecting a sizeable proportion (10-55%) of the elderly population. The prevalence of stress and anxiety among the elderly population is gradually increasing and expected to reach double in the next one decade. [7] Fatigue is one of the five most common complaints for seeking medical advice in primary care, and is considered to be one of the main features of frailty in older adults. Although fatigue is a known debilitating entity associated with specific chronic diseases, not all patients with fatigue can be diagnosed with an underlying medical condition. [8]

Poor sleep quality can have profound physical effects on the elderly, including fatigability and an increased risk of falls. These effects threaten both mobility and independence. Poor sleep quality and sleep deprivation are also associated with effects on activities of daily living and cognitive impairment in the elderly. [9]

2. Need of the study

With increasing age the older population begins to struggle with various health problems and in the absence of appropriate care the older population suffer more from health problems that could have been prevented.

Other than stress the older population also struggle with fatigue, anxiety and sleep disturbances. Nearly five to seven percent of elderly patients who are attending primary care have a primary complaint of fatigue. The active elderly person who suddenly losses energy and they become easily fatigued. The number of persons above the age of 60 years is fast growing especially in India. India is second most popular country in world has 76.6 million people at over age of 60 years. Fatigue is often symptom of underlying medical or psychiatric illness. [10]

National sleep foundation suggest that along with fatigue because of the physical changes old aged people tend to have a harder time falling asleep and more trouble staying asleep than when they were younger. The foundation confirmed the prevalence of insomnia 46% of community dwelling adults aged between 65-74 reported insomnia symptoms. It is estimated that 40-70% of older adults have chronic sleep problems out of which 50% are undiagnosed. [11]

Warm foot bath therapy instigate the blood vessels to dilate which improves the blood circulation, the heat encourage sweating leading to release of toxin, thus warm foot bath relieves stress as it provides relaxation to the whole body leading to relieve from stress, anxiety and fatigue. Taking such a foot bath will stimulate blood circulation, re-energize self, reduce inflammation, and keep self-relaxed. Toxins accumulate in our body through our daily lives, often due to diet, stress and unhealthy lifestyles. Some toxic substances may lead to blockages which can hinder the free blood circulation, reducing its ability to transport nutrients and oxygen to the body that needs these for growth. Proper blood circulation can also flush away wastes from your body. With the help of foot bath, stress is reduced as toxins and wastes are removed once the blood circulation is stimulated. Warm foot bath is considered a wonderful natural sleep aid. Soaking your feet in the hot water before bed allows the kidney to replenish the body's blood flow while you are sleeping. Second, it can bring relaxation to your feet and ankles. The heated water warms cold feet and relaxes the muscles, tendons, and ligaments in the feet. Meanwhile, foot bath is thought to help with depression as they can ease tension, confusion, anger, and anxiety. [12]

Objectives

- To assess the level of well being of elderly people.
- To evaluate the effectiveness of warm water foot bath on level of well being of elderly people.
- To determine the association of post- intervention of well being of elderly people with demographic variables.

Hypotheses

Hypotheses will be tested at 0.05 level of significance

- H₁: There will be a significant difference between pre intervention and post intervention of well being of elderly people.
- H₂: There will be a significant association between post intervention of well being of elderly people with selected demographic variables.

3. Methodology

Research approach: A quantitative evaluative approach was used for the present study.

Research design: One group pre-test post-test design

Variables: (1) Independent variables: In this study the independent variable refers to the warm water foot bath. **(2) Dependent variables:** In this study the dependent variable refers to the well being of elderly people. **(3) Demographic variables:** In this study demographic variables are age, gender, educational status, past occupation, marital status, source of income, any medication prescribed for sleep.

Setting of the study: The present study was carried out in geriatric ward of Satribari Christian Hospital, Guwahati.

Population: Population for this study includes elderly people.

Target Population: Elderly people in a selected hospital, Guwahati.

Accessible Population: Elderly people admitted in geriatric ward of Satribari Christian Hospital, Guwahati.

Sample and sample size

In the present study, the sample were elderly people of age group 60 years and above who are willing to participate and who can read and write English or Assamese. The sample size selected for the study was 40 elderly people admitted in geriatric ward of Satribari Christian Hospital, Guwahati.

Sampling technique

Non probability purposive sampling technique was used for the present study.

Inclusion criteria

- Elderly people who are willing to participate.
- Elderly people who can read and write English or Assamese.

Exclusion criteria for sampling:

- Elderly people who have diabetes mellitus, foot sore.
- Elderly people who have loss of peripheral sensation.
- Elderly people who are not present at the time of data collection.

Description of the tool

The tool for the data collection for the present study has been organized as follows:-

Section A: Demographic Variables: This part consists of items for obtaining information of the elderly people which

includes age, gender, educational status, past occupation, marital status, source of income, any medication prescribed for sleep.

Section B1: DASS21

The DASS is a set of three self-report scales designed to measure the negative emotional states of depression, anxiety and stress. The original 42-item DASS was developed by Lovibond & Lovibond, (1995). Later, a shorter version of the DASS, the DASS-21 was developed by Lovibond & Lovibond (1995) to reduced administration time and has been used widely. The reliability for subscale for depression is 0.94, anxiety is 0.87, and stress is 0.9. It is divided into seven questions for each, depression(3,5,10,13,16,17,21), anxiety (2,4,7,9,15,19,20), and stress (1,6,8,11,12,14,18). Each item is scored on : 0 = Did not apply to me at all, to 3 = Applied to me very much or most of the time. Sum the score of each item to get a total score. Higher scores indicate greater levels of distress. [13]

Section B2: Fatigue Assessment Scale (FAS)

The Fatigue Assessment Scale (FAS) is a simple 10-item self-reported questionnaire designed by Michielson et al. to assess fatigue. Developers Michielson HJ, Vries JD, Heck GLV, Vijver JR and Sijtsma analysed the scale's psychometric properties and found an internal consistency of 0.90. It is a 10 item scale evaluating item of symptoms of chronic fatigue. Each item is answered using five point ranging from 1-never, 2-sometimes, 3-regularly, 4-often, 5-always. Total score 10-21: no fatigue (normal), 22-34: fatigue and ≥ 35 : extreme fatigue. [14]

Section B3: Pittsburgh Sleep Quality Index (PSQI)

The PSQI was developed in 1988, by Buysse DJ, Reynolds GF, Monk TH, Berman SR, Kupfer DJ to create a standardized measure designed to gather consistent information about the subjective nature of people's sleep habits and provide a clear index that both clinicians and patients can use. The reliability value of this item is found to be 0.83. The 19 self-rated items are combined to form seven component scores each of which has a range of 0-3 points. A score of "0" indicates no difficulty, while a score of "3" indicates severe difficulty. Then the seven component scores are then added and ≤ 5 associated with good sleep quality and ≥ 5 associated with poor sleep quality. [15]

Section C: Bath thermometer

Bath thermometer is a device use for measuring water temperature at the boiling point of water at 100° and its freezing point at 0°. Thermometer 110⁰ Mercury OMSON RACK S5A specification no.202508 was used in this study.

Translation of tool

Initially demographic variables was prepared in English. After obtaining the formal permission from the authors of the tools the Depression, Anxiety and Stress Scale (DASS21), Fatigue Assessment Scale (FAS) and Pittsburgh Sleep Quality Index (PSQI) were translated into Assamese by an expert of Language Officer from Transformation and Development Department. The Assamese Version of the tools were sent to the Original Authors for Approval. The Assamese Version of DASS21 was approved by Peter Lovibond, the Assamese Version of Fatigue Assessment

Scale was approved by Marjolein Drent, ild care foundation and the Assamese Version of Pittsburgh Sleep Quality Index (PSQI) was approved by Ashley Xavier, Mapi Research Trust. Then the translated tool of Assamese was re-translated into English language by another expert who was conversant with both languages

Content validity

Content validity of the structured demographic variables and the translated version of Depression, Anxiety and Stress Scale (DASS21), Fatigue Assessment Scale (FAS) and Pittsburgh Sleep Quality Index (PSQI) were given to five experts. Three experts from the field of psychiatric nursing and two experts from the field of psychiatrist who were subject experts and who are also well versed with the Assamese language.

Reliability of the tool

In order to establish reliability of the tool, parallel method was used. The reliability for Depression, Anxiety and Stress Scale (DASS21) was $r=0.93$, Fatigue Assessment Scale (FAS) was $r=0.87$, and Pittsburgh Sleep Quality Index (PSQI) was $r=0.93$ which showed that tools was reliable. The thermometer 110⁰ C of specification no.202508, OMSON RACK S5A is found tallied with the department's standard thermometer at Physics Lab of Department of Physics in Cotton University, Guwahati, Assam. The tested thermometer is reliable and valid for using in research purposes.

Pilot study

The pilot study was conducted from 4th June to 8th June at Satribari Christian Hospital, Chatribari, Assam., to assess the feasible of the study and to decide the plan for analysis

Data collection procedure

Formal permission was obtained from the concerned authorities. The data was collected from 9th June 2020 to 28th June 2020 from 40 elderly people in Satribari Christian Hospital. The samples were selected by non-probability purposive sampling technique. The purpose of the study was explained to the participants and informed consent was taken from them. On the first day pre-intervention assessment was done by using Depression, Anxiety and Stress Scale (DASS21), Fatigue assessment Scale (FAS) and Pittsburgh Sleep Quality Index (PSQI). On the same day warm water foot bath was given twice a day for 15 minutes at 41 °C. For another five days warm water foot bath was given twice a day for 15 minutes at 41 °C and on fifth day post-intervention assessment was done using Depression, Anxiety and Stress Scale (DASS21), Fatigue assessment Scale (FAS) and Pittsburgh Sleep Quality Index (PSQI).

Plan for data analysis: (1) Descriptive statistics: Collected data will be analyzed by using descriptive statistics such as frequency and percentage. (2) Inferential Statistics: The effectiveness of warm water foot bath on well being of elderly people will be tested by using paired 't' test. The association between post intervention of well being of elderly people with demographic variables will be tested by χ^2 test.

4. Results

Section I. Description of demographic variables of elderly people

Table 1: Frequency and percentage distribution of demographic variables of elderly people, n=40

Demographic Variables	Group	Frequency (f)	Percentage (%)
Age	61-65 Years	12	30%
	66-70 Years	12	30%
	71-75 Years	10	25%
	76-80 Years	5	12.5%
Gender	81-85 Years	1	2.5%
	Male	23	57.5%
	Female	17	42.5%
Education	Transgender	0	0%
	Illiterate	0	0%
	Primary	0	0%
	Middle school	3	7.5%
Past occupation	High school	18	45%
	Higher secondary	13	32.5%
	Graduate & above	6	15%
	Business	12	30%
Marital status	Government employed	6	15%
	Private employed	12	30%
	Unemployed	7	17.5%
	Farmer	3	7.5%
Source of income	Married	36	90%
	Unmarried	0	0%
	Widow/widower	4	10%
	Divorced/separated	0	0%
Any medication prescribed for sleep	Pension	6	15%
	Support from children	26	65%
	Saving	8	20%
	None	0	0%
Any medication prescribed for sleep	If yes_____	0	0%
	No	40	100%

The data in Table 1 shows that majority of 12(30%) of the elderly people belongs to age group of 61-65 and 66-70. Regarding gender, majority 27(42.5%) of the elderly people were female. About the educational status majority 18(45%) of the elderly people completed high school. With regard to past occupation majority 12(30%) of the elderly people belongs to business and private employed. Regarding the marital status majority 36(90%) of the elderly people are married. About the source of income majority 26(65%) of the elderly people gets support from children. Sleep medication were not prescribed for all 40(100%) of the elderly people.

Section II. Level of well being of elderly people

Table 2: Comparison of pre-intervention and post-intervention of well being of elderly people, n=40

Level of well being	Pre Intervention		Post Intervention	
	Frequency	Percentage	Frequency	percentage
Normal Well being	0	0%	9	22.5%
Well Being not maintained	40	100%	31	77.5%

The above Table 2. Indicates that in pre-intervention, well being was not maintained by all i.e 40 (100%) of the elderly people whereas in post-intervention, well being was not maintained by majority i.e 31(77.5%) of elderly people and only nine (22.5%) of the elderly people had normal well being.

Table 3: Comparison of pre-intervention and post-intervention of well being (Depression, anxiety and stress) of elderly people using DASS21, (n=40)

Depression	Pre-Intervention		Post-Intervention	
	Frequency	Percentage	Frequency	Percentage
Normal	0	0%	16	40.0%
Mild	9	22.5%	21	52.5%
Moderate	31	77.5%	3	7.5%
Severe	0	0%	0	0%
Extremely Severe	0	0%	0	0%
ANXIETY	Pre-Intervention		Post-Intervention	
	Frequency	Percentage	Frequency	Percentage
Normal	0	0%	15	37.5%
Mild	4	10.0%	19	47.5%
Moderate	28	70%	6	15%
Severe	8	20.0%	0	0%
Extremely Severe	0	0%	0	0%
STRESS	Pre -Intervention		Post -Intervention	
	Frequency	Percentage	Frequency	Percentage
Normal	0	0%	21	52.5%
Mild	33	82.5%	18	45.0%
Moderate	7	17.5%	1	2.5%
Severe	0	0%	0	0%
Extremely Severe	0	0%	0	0%

The above Table 3. Indicates that in pre -intervention majority 31(77.5%) of the elderly people were having moderate depression whereas in post-intervention, majority 21(52.5%) of the elderly people were having mild depression. And in pre-intervention majority 28(70%) of the elderly people were having moderate anxiety whereas in post-intervention, majority 19(47.5%) of the elderly people were having mild anxiety. Also in pre-intervention majority 33(82.5%) of the elderly people were having mild stress whereas in post-intervention, majority 21(52.5%) of the elderly people were having normal.

Table 4: Comparison of pre-intervention and post-intervention of well being (Fatigue) of elderly people using FAS (Fatigue Assessment Scale)

FAS	Pre Intervention		Post Intervention	
	Frequency	Percentage	Frequency	Percentage
No Fatigue (Normal)	13	32.5%	26	65.0%
Fatigue	27	67.5%	14	35.0%
Extreme Fatigue	0	0%	0	0%

The above Table 4.Indicates that in pre-intervention majority 27(67.5%) of the elderly people had fatigue whereas in post-intervention, majority 26(65.5%) of the elderly people hadno fatigue (normal)

Table 5: Comparison of pre-intervention and post-intervention of well being (Sleep) of elderly people using PSQI (PITTSBURGH SLEEP QUALITY INDEX)

PSQI	Pre Intervention		Post Intervention	
	Frequency	Percentage	Frequency	Percentage
Good Sleep Quality	3	7.5%	27	67.5%
Poor Sleep Quality	37	92.5%	13	32.5%

The above **Table 5**. Indicates that in pre-intervention majority 37(92.5%) of the elderly people had poor sleep quality whereas in post-intervention, majority 27(67.5%) of the elderly people had good sleep quality.

Section III Effectiveness of warm water foot bath on level of well being of elderly people

Table 6: Comparison of paired ‘t’ test of level of well being of elderly people between pre intervention and post intervention, n=40

Level of well being	Mean ±SD	‘t’	df	p-value
Pre-intervention	55.30±10.45	18.24	39	<.001
Post-intervention	41.78±7.64			

Significant at $p < 0.05$

Table 6. shows that the t-test showing comparison between pre-intervention and post-intervention. The Mean±SD of pre-intervention of well being was 55.30±10.45 and the Mean±SD of post-intervention of well being was 41.78±7.64. The calculated ‘t’ value was 18.24 which was more than the tabulated value 2.02 (df 39) at $p < .001$. Hence, the research hypothesis was accepted and null hypothesis was rejected. This shows that administration of warm water foot bath was effective in improving well being of elderly people.

Table 7: Paired ‘t’ test of pre-intervention and post-intervention of well being (Depression) of elderly people using DASS21(n=40)

Depression	Mean±SD	‘t’	df	p-value
Pre-intervention	7.45±1.13	12.28	39	<.001
Post-intervention	4.93±1.09			

Significant at $p < 0.05$

Table 7. shows that the t-test showing comparison between pre-intervention and post-intervention. The Mean±SD of pre-intervention of well being was 7.45±1.13 and the Mean±SD of post-intervention of well being was 4.93±1.09. The calculated ‘t’ value was 12.28 which was more than the tabulated value 2.02 (df 39) at $p < .001$. This shows that warm water foot bath reduces the level of depression of elderly people.

Table 8: Paired ‘t’ test of pre-intervention and post-intervention of well being (Anxiety) of elderly people using DASS21, (n=40)

Anxiety	Mean±SD	‘t’	df	p-value
Pre-intervention	6.73±1.06	12.10	39	<.001
Post-intervention	4.28±1.26			

Significant at $p < 0.05$

Table 8. shows that the t-test showing comparison between pre-intervention and post-intervention. The Mean±SD of pre-intervention of well being was 6.73±1.06 and the Mean±SD of post-intervention of well being was 4.28±1.26. The calculated ‘t’ value was 12.10 which was more than the tabulated value 2.02 (df 39) at $p < .001$. This shows that warm water foot bath reduces the level of anxiety.

Table 9: Paired ‘t’ test of pre-intervention and post-intervention of well being (Stress) of elderly people using DASS21 (n=40)

Stress	Mean±SD	‘t’	df	p-value
Pre intervention	8.70±0.9	6.10	39	<.001
Post intervention	7.43±1.2			

Significant at $p < 0.05$

Table 9 shows that the t-test showing comparison between pre-intervention and post-intervention. The Mean±SD of pre-intervention of well being was 8.70±0.9 and the Mean±SD of post-intervention of well being was 7.43±1.2. The calculated ‘t’ value was 6.10 which was more than the tabulated value 2.02 (df 39) at $p < .001$. This shows that warm water foot bath reduces the level of stress.

Table 10: Paired ‘t’ test of pre-intervention and post-intervention of well being (Fatigue) of elderly people using FAS (FATIGUE ASSESSMENT SCALE) (n=40)

Fatigue	Mean±SD	‘t’	df	p-value
Pre-intervention	23.7±6.91	11.11	39	<.001
Post-intervention	19.38±4.88			

Significant at $p < 0.05$

Table 10. shows that the t-test showing comparison between pre-intervention and post-intervention. The Mean±SD of pre-intervention of well being was 23.7 ±6.91 and the Mean±SD of post-intervention of well being was 19.38±4.88. The calculated ‘t’ value was 11.11 which was more than the tabulated value 2.02 (df 39) at $p < .001$. This shows that warm water foot bath reduces the level of fatigue.

Table 11: Paired ‘t’ test of pre-intervention and post-intervention of well being (Sleep) of elderly people using PSQI (Pittsburgh Sleep Quality Index) (n=40)

Sleep	Mean± SE	‘t’	df	p-value
Pre-intervention	8.78±2.24	14.16	39	<.001
Post-intervention	5.78±1.61			

Significant at $p < 0.05$

Table 11, Table 8 shows that the t-test showing comparison between pre-intervention and post-intervention. The Mean±SD of pre-intervention of well being was 8.78±2.24 and the Mean±SD of post-intervention of well being was 5.78±1.61. The calculated ‘t’ value was 14.16 which was more than the tabulated value 2.02 (df 39) at $p < .001$. This shows that warm water foot bath was effective in improving quality of sleep of elderly people.

Section IV Association of post intervention of well being of elderly people with demographic variables

Table 12: Chi square test showing the association of post-intervention of overall well being of elderly people with demographic variables, n=40

Demographic Variables	Groups	Post intervention		Total	Chi Square	df	p value
		Normal Well being	Well being Not Maintained				
Age	61-65 years	2	10	12	3.10	4	9.48 ^{NS}
	66-70 years	4	8	12			
	71-75 years	1	9	10			
	76-80 years	2	3	5			
	81-85 years	0	1	1			
Gender	Male	5	18	23	0.01	1	3.83 ^{NS}
	Female	4	13	17			
Educational status	Middle school	0	3	3	3.85	3	7.81 ^{NS}
	High school	4	14	18			
	Higher secondary	2	11	13			
	Graduate & above	3	3	6			
Past occupation	Bussiness	1	11	12	5.04	4	9.48 ^{NS}
	Government employed	3	3	6			
	Private employed	3	9	12			
	Unemployed	2	5	7			
	Farmer	0	3	3			
Marital status	Married	7	29	36	1.92	1	3.83 ^{NS}
	Widow	2	2	4			
Source of income	Pension	3	3	6	5.42	2	5.99 ^{NS}
	Support from children	3	23	26			
	Saving	3	5	8			

NS-Not significant at 0.05 level of significance

Table 12 Reveals that there was no significant association of post-intervention of well being of elderly people with the demographic variables at 0.05 level of significance. Hence the research hypothesis was rejected and null hypothesis was accepted.

Table 13: Chi square test showing the association of post-intervention of well being (depression) of elderly people with demographic variables (n=40)

Demographic variables	Groups	Post intervention			Total	Chi Sq	df	p
		Normal	Mild	Moderate				
Age	61-65 years	4	7	1	12	5.68	8	15.51 ^{NS}
	66-70 years	7	4	1	12			
	71-75 years	2	7	1	10			
	76-80 years	2	3	0	5			
	81-85 years	1	0	0	1			
Gender	Male	9	12	2	23	0.11	2	5.99 ^{NS}
	Female	7	9	1	17			
Educational status	Middle school	0	3	0	3	7.99	6	12.59 ^{NS}
	High school	6	9	3	18			
	Higher secondary	6	7	0	13			
	Graduate & above	4	2	0	6			
Past occupation	Business	4	5	3	12	12.40	8	15.51 ^{NS}
	Govt employed	4	2	0	6			
	Private employed	6	6	0	12			
	Unemployed	2	5	0	7			
	Farmer	0	3	0	3			
Marital status	Married	13	20	3	36	2.34	2	5.99 ^{NS}
	Widow	3	1	0	4			
Source of income	Pension	4	2	0	6	4.00	4	9.49 ^{NS}
	Support from children	8	15	3	26			
	Saving	4	4	0	8			

NS-Not significant at 0.05 level of significance

Table 13.reveals that there was no significant association of post intervention of depression of elderly people with the demographic variables at 0.05 level of significance.

Table 14: Chi square test showing the association of post-intervention of well being (anxiety) of elderly people with demographic variables, (n=40)

Demographic variables	Groups	Post intervention			Total	Chi Sq	df	p
		Normal	Mild	Moderate				
Age	61-65 years	4	7	1	12	8.46	8	15.51 ^{NS}
	66-70 years	7	3	2	12			
	71-75 years	1	7	2	10			
	76-80 years	2	2	1	5			
	81-85 years	1	0	0	1			
Gender	Male	8	13	2	23	2.47	2	5.99 ^{NS}
	Female	7	6	4	17			
Educational status	Middle school	0	1	2	3	8.40	6	12.59 ^{NS}
	High school	7	8	3	18			
	Higher secondary	5	7	1	13			
	Graduate & above	3	3	0	6			
Past occupation	Business	3	8	1	12	12.82	8	15.51 ^{NS}
	Govt employed	3	3	0	6			
	Private employed	7	4	1	12			
	Unemployed	2	3	2	7			
	Farmer	0	1	2	3			
Marital status	Married	13	17	6	36	0.86	2	5.99 ^{NS}
	Widow	2	2	0	4			
Source of income	Pension	3	3	0	6	4.16	4	9.49 ^{NS}
	Support from children	8	12	6	26			
	Saving	4	4	0	8			

NS-Not significant at 0.05 level of significance

Table 14 reveals that there was no significant association of post-intervention of anxiety of elderly people with the demographic variables at 0.05 level of significance.

Table 15: Chi square test showing the association of post-intervention of well being (stress) of elderly people with demographic variables, (n=40)

Demographic Variables	Groups	Post intervention		Total	Chi Sq	df	P value
		Normal	Mild				
Age	61-65 years	6	6	12	4.03	4	9.49 ^{NS}
	66-70 years	8	4	12			
	71-75 years	3	7	10			
	76-80 years	3	2	5			
	81-85 years	1	0	1			
Gender	Male	12	11	23	0.00	1	3.84 ^{NS}
	Female	9	8	17			
Educational status	Middle school	0	3	3	7.17	3	7.82 ^{NS}
	High school	11	7	18			
	Higher secondary	5	8	13			
	Graduate & above	5	1	6			
Past occupation	Business	5	7	12	6.39	4	9.49 ^{NS}
	Govt. employed	5	1	6			
	Private employed	7	5	12			
	Unemployed	4	3	7			
	Farmer	0	3	3			
Marital status	Married	19	17	36	0.11	1	3.84 ^{NS}
	Unmarried	2	2	4			
Source of income	Pension	5	1	6	3.69	2	5.99 ^{NS}
	Support from children	11	15	26			
	Saving	5	3	8			

NS-Not significant at 0.05 level of significance

Table 15.reveals that there was no significant association of post intervention of stress of elderly people with the demographic variables at 0.05 level of significance.

Table 16: Chi square test showing the association of post-intervention of well being (fatigue) of elderly people with demographic variables, (n=40)

Demographic Variables	Groups	Postintervention		Total	Chi Sq	df	p
		Normal	Fatigue				
Age	61-65 years	7	5	12	1.39	4	9.49 ^{NS}
	66-70 years	8	4	12			
	71-75 years	6	4	10			
	76-80 years	4	1	5			
	81-85 years	1	0	1			
Gender	Male	15	8	23	0.00	1	3.84 ^{NS}
	Female	11	6	17			
Educational status	Middle school	2	1	3	1.53	3	7.82 ^{NS}
	High school	10	8	18			
	Higher secondary	10	3	13			
	Graduate & above	4	2	6			
Past occupation	Business	6	6	12	2.53	4	9.49 ^{NS}
	Govt employed	4	2	6			
	Private employed	8	4	12			
	Unemployed	6	1	7			
	Farmer	2	1	3			
Marital status	Married	23	13	36	0.20	1	3.84 ^{NS}
	Unmarried	3	1	4			
Source of income	Pension	4	2	6	2.40	2	5.99 ^{NS}
	Support from children	15	11	26			
	Saving	7	1	8			

NS-Not significant at 0.05 level of significance

Table 16 reveals that there was no significant association of post intervention of fatigue of elderly people with the demographic variables at 0.05 level of significance.

Table 17: Chi square test showing the association of post intervention of well being (sleep) of elderly people with demographic variables, (n=40)

Demographic Variables	Groups	Post intervention		Total	Chi Sq	df	P value
		Good sleep quality	Poor sleep quality				
Age	61-65 years	9	3	12	1.86	4	9.49 ^{NS}
	66-70 years	7	5	12			
	71-75 years	6	4	10			
	76-80 years	4	1	5			
	81-85 years	1	0	1			
Gender	Male	17	6	23	1.02	1	3.84 ^{NS}
	Female	10	7	17			
Educational status	Illiterate	1	2	3	3.14	3	7.82 ^{NS}
	Primary school	11	7	18			
	Middle school	10	3	13			
	High school	5	1	6			
Past occupation	Business	9	3	12	5.32	4	9.49 ^{NS}
	Govt employed	5	1	6			
	Private employed	6	6	12			
	Unemployed	6	1	7			
	Farmer	1	2	3			
Source of income	Pension	5	1	6	6.75	2	5.99 ^S
	Support from children	14	12	26			
	Saving	8	0	8			

NS-Not significant at 0.05 level of significance

Table 17.reveals that there was no significant association of post intervention of sleep of elderly people with the demographic variables like age, gender, educational status, marital status, past occupation at 0.05 level of significance except source of income.

5. Summary

- Majority 12(30%) of the elderly people were from the age group 61-65 and 66-70.

- 23(57.5%) of the elderly people were male.
- 18(45%) of the elderly people were educated up to high school
- Majority 12(30%) of the elderly people were business and private employed
- 36(90%) of the elderly people were married
- 26(65%) of the elderly people belongs to support from children
- 40(100%) of the elderly people does not prescribed any medication for sleep

6. Recommendation

- The study can be replicated in different settings.
- The same study can be done on large number of sample
- Effectiveness of warm water foot bath can be assessed by conducting the study with control and experimental.

7. Conclusion

From the findings of the present study, it can be concluded that warm water foot bath on level of well being of elderly people was effective in improving sleep, reduce fatigue, depression, anxiety and stress.

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