

Effectiveness of Beet Root Juice on Reduction of Blood Pressure among People with Hypertension at Sothupakkam, Kanchipuram District

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ABSTRACT

Aim: Effectiveness of beet root juice on reduction of blood pressure among people with hypertension at Sothupakkam, Kanchipuram district

Objectives: (i) to assess the level of blood pressure among people with hypertension residing at Sothupakkam. (ii) to evaluate the effectiveness of beetroot juice on reduction of blood pressure among people with hypertension (iii) to find out the association between effectiveness of beetroot juice on reduction of blood pressure with the selected demographic variables.

Methodology: Researcher adopted the quantitative research approach, one group pre test and post test design, study samples with the age group 25-65 years old for 60 samples at Sothupakkam Kanchipuram district using purposive sampling technique

Results: The findings of the study was pre and post systolic mean difference 30.66 with the standard deviation 10.39 and applying paired 't' test value 22.8 and pre and post diastolic mean difference 17.33 with standard deviation 10.22 and applying the paired 't' test value 13.1 since the calculated value was greater than the table value at 0.05 level of significance. Hence it was significant improvement in reduction of blood pressure among people with hypertension. It has shown that the consumption of beet root juice was effective

Conclusion: The present study was conducted in Sothupakkam village with the sample size 60 people with hypertension and they had been administered with the beet root juice on reduction of blood pressure which showed the remarkable changes in the health status of the susceptible of people with hypertension and

they had give the feedback regarding the effectiveness of the natural home remedy.

Keywords: Beet root juice, hypertension, high blood pressure

INTRODUCTION

Hypertension is high blood pressure; also known as "silent killer" is a very common condition that can be lead to or complicate many health problems. About 31% people who had pressure exceeding 140/90mmHg were unaware of their elevated blood pressure.

Once identified elevated blood pressure, persistent for a lifelong period. There are number of reasons why people have hypertension, some of them are inherited such as being made or having a family history of elderly heart attacks or stroke. Other risks may be partly inherited such as predisposition to hypertension or obesity

World health organization (2015) Over all, approximately 20% of the world's adult are estimated to have hypertension, when hypertension is defined as blood pressure excess of 140/90mmHg. The prevalence dramatically increases in patients older than 60 years; in many countries, 50% of individuals in this age group have hypertension, contributing to more than 7.1 million per year

Indian council of medical and research study in 2014 involving 5537 individuals (3050 residents and 2487 rural residents) demonstrated 25% and 29%

prevalence of hypertension (140/90mmHg) among males and females respectively in urban Delhi and 13% and 10% in rural Haryana.

Recent studies using revised criteria (BP > or 140 and 90mmHg) have shown a prevalence of hypertension among urban adults. There are 31.5 million hypertensives in rural and 34 million in urban populations. A total 70% of these would be the stage I hypertension (systolic blood pressure 140-159mmHg and diastolic blood pressure 90-100mmHg). In Tamil Nadu the prevalence of hypertension ranges from 20-40% in urban adults and 12-17% among rural adults. The number of people with hypertension is projected to increase from 118 million in 2000 to 214 million in 2025, with nearly equal numbers of men and women.

A survey of 26,000 adults in south India showed a hypertension prevalence of 20% (men 23% and women 17%) but 67% of those with hypertension was unaware of their diagnosis. Majority of hypertensive subjects still remain undetected and the control of hypertension is also inadequate. This calls for urgent prevention and control measures for hypertension.

Prevalence of Hypertension in South East Asian Region

Prevalence of hypertension is increasing in many countries in the region. In India, raised blood pressure was increased from 5% in the 1960s to 12% in 1990s, and more than 30% in 2014. In Indonesia, the percentage of adult population with raised blood pressure was increased from 8% in 1995 to 32% in 2014. In Myanmar, the ministry of health reported the increase in the high blood pressure.

Prevalence of Hypertension in India

Indian Council of Medical and Research: study in 2014 involving 5537 individuals (3050 residents and 2487 rural residents) demonstrated 25% and 29% prevalence of hypertension (140/90mmHg) among male and female respectively in urban Delhi and 13% and 10% in rural

Haryana. Hypertension prevalence study was carried out (160/95mmHg) in rural Kerala during 2001 in the 20 plus age group and the prevalence was found to be 18%. Later studies in Kerala carried out among 30-64 years age group in 1998 and 55% among 40-60 age group during 2000.

Prevalence of Hypertension in Tamilnadu

International journal of public health reported at 21.4% of hypertension prevalence in about 10,500 people aged (25-64) in 11 villages in the state. Prevalence was nearly the same in both sexes. When it comes to hypertension prevalence, rural India is not far behind its urban counterpart and the earlier studies had documented 16% prevalence in rural areas and studies carried out later in other states had reported 20% of prevalence. Prevalence of hypertension in urban areas is 22-30%. The latest study gains importance as there is very big data on prevalence of hypertension in rural Tamil Nadu. In the rural population a large percentage of people are ignorant about the condition and it is indeed a major cause for concern. "About 75% people ignorant of their condition in rural areas"

Statement of the Problem

Effectiveness of Beet Root Juice on Reduction of Blood Pressure among People with Hypertension at Sothupakkam, Kanchipuram district

Objectives of the Study

- ❖ to assess the level of blood pressure among people with hypertension residing at Sothupakkam.
- ❖ to evaluate the effectiveness of beetroot juice on reduction of blood pressure among people with hypertension
- ❖ to find out the association between effectiveness of beetroot juice on reduction of blood pressure with the selected demographic variables.

HYPOTHESIS

H1: There will be post test level of blood pressure will be significantly lower than the pretest level of blood pressure.

H2: There will be a significant association between the pretest level of blood pressure and selected demographic variables.

MATERIAL AND METHODS

Researcher adopted the quantitative research approach, one group pre test and post test design, study samples with the age group 25-65 years old for 60 samples at Sothupakkam Kanchipuram district using purposive sampling technique

RESULTS AND DISCUSSION

Table 1.1 shows the health status of people with hypertension on reduction of blood pressure before and after consumption

of beet root juice. On the pre test, no normal hypertension persons, 15(25%) were pre hypertension persons, 45(75%) were hypertensive persons. During the post test, 40(66.7%) were normal hypertension persons, 20 (33.3%) were pre hypertension persons, and no hypertension persons was reported.

Table 1.1 Comparison of frequency and percentage distribution of the presence of people with hypertension before and after giving the beet root juice on reduction of blood pressure

S. No	Health Status	Normal		Pre hypertension		Hypertension	
		Freq	%	Freq	%	Freq	%
1.	Pre test	0	0	15	25%	45	75%
2.	Posttest	40	66.7	20	33.3	0	0

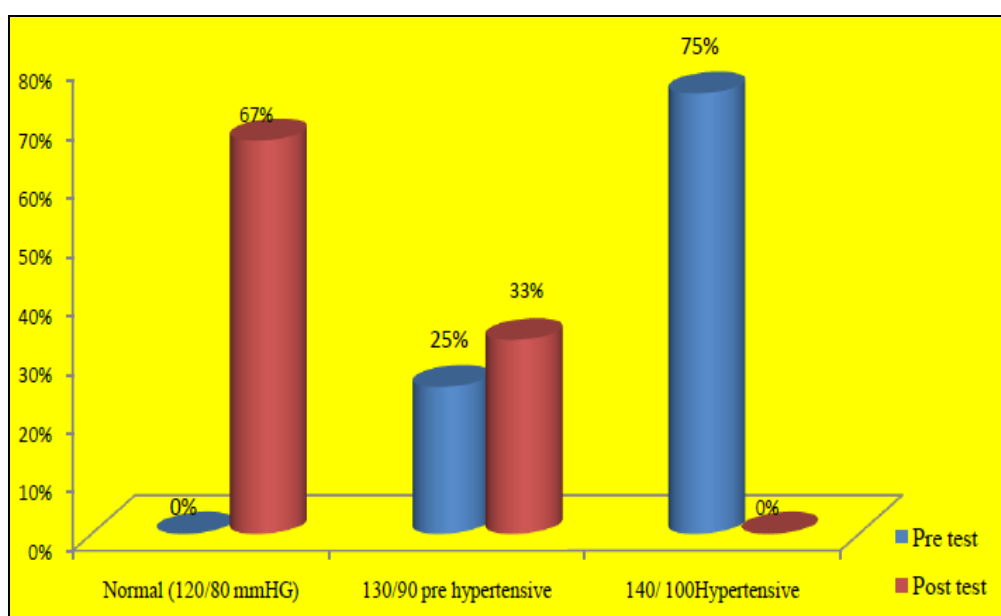


Fig 1.1 Pre test and Post test comparison for Blood Pressure of people with Hypertension

Table 1.2 Depicts the Improvement Score of the Reduction of Blood Pressure among the People with Hypertension before and After Consumption of Beet Root Juice

s. no	Blood Pressure	Mean Difference	Standard Deviation	't' value
1.	Pre systolic Post systolic	30.66	10.39	22.8
2.	Pre diastolic Post diastolic	17.33	10.22	13.1

This table shows the improvement in the mean score of pre and post systolic blood pressure mean difference 30.66 with the standard deviation 10.39 and applying

the paired 't' test value 22.8 and pre and post diastolic mean difference 17.33 with standard deviation 10.22 and applying the paired 't' test value 13.1 since the calculated value was greater than the table value at 0.05 level of significance. Hence it was statistically proved that there was highly significant improvement in reduction of blood pressure among the people with Hypertension. It has shown that the consumption of beet root juice was effective

Association between the Selected Demographic variables with the Effectiveness of Beet Root Juice on Reduction of Blood Pressure

S. NO.	Demographic variables	post test				chi square p value	p value
		Normal		Pre hypertension			
		No	%	No	%		
1.	Age						
	a)25-35 years	6	10.0	1	1.7	2.248	0.52
	b)36-45 years	7	11.7	2	3.3		
	c)46-55 years	12	20.0	7	11.7		
	d)Above 55 Years	15	25.0	10	16.7		
2.	Gender						
	a)Male	14	23.3	6	10.0	0.150	0.69
	b)Female	16	43.3	14	23.3		
3.	Religion						
	a)Hindu	34	60.0	14	23.3	5.640*	0.04
	b)Christian	4	6.7	4	6.7		
	c)Muslim	0	0.0	2	3.3		
	d)Others	0	0.0	0	0		
4.	Education						
	a)Illiterate	9	15.0	9	15.0	4.786	0.31
	b)Primary	12	20.0	4	6.7		
	c)High School	9	15.0	5	8.3		
	d)HSC	2	3.3	1	1.7		
	e)Graduate and Above	8	13.3	1	1.7		
5.	Occupation						
	a)Coolie	7	11.7	7	11.7	5.475	0.24
	b)Non Professional	3	5.0	1	1.7		
	c)Professional	7	11.7	0	0.0		
	d)Business	3	5.0	2	3.3		
	e)Unemployed	20	33.3	10	16.7		
6.	Type of work						
	a)Sedentary	25	41.7	11	18.3	4.148	0.12
	b)Moderate	15	25.0	7	11.7		
	c)Heavy	0	0.0	2	3.3		
7.	Income						
	a)Up to Rs 5000	23	38.3	12	20.0	2.952	0.39
	b)Rs 5001 - 10000	7	11.7	5	8.3		
	c)Rs 10001 - 15000	5	8.3	3	5.0		
	d)Above Rs 15000	5	8.3	0	0.0		
8.	Marital status						
	a)Married	24	40.0	15	25.0	3.257	0.35
	b)Unmarried	4	6.7	0	0.0		
	c)Divorced/Separated)Widow	5	8.3	1	1.7		
		7	11.7	4	6.7		
9.	Type of family						
	a)Nuclear family	25	41.7	13	21.7	0.036	0.85
	b)Joint family	15	25.0	7	11.7		
	c)Broken Family	0	0.0	0	0.0		
10.	Dietary pattern						
	a)Vegetarian	6	10.0	3	5.0	0.000	1.00
	b)Non Vegetarian	34	56.7	17	28.3		
11.	Consumption of non Vegetarian						
	a)Daily	4	6.7	4	6.7	1.650	0.80
	b)Weekly	13	21.7	7	11.7		
	c)Monthly	15	25.0	5	8.3		
	d)Occasionally	2	3.3	1	1.7		
	e)Never	6	10.0	3	5.0		
12.	Personal Habits						
	a)Alcoholism	2	3.3	0	0.0	1.360	0.71
	b)Betel chewing	5	8.3	3	5.0		
	c)Others	4	6.7	3	5.0		
	d)No bad habits	29	48.3	14	23.3		
13.	Habitual Pattern						
	a)Daily	4	6.7	3	5.0	1.904	0.75
	b)Weekly	1	1.7	0	0.0		
	c)Monthly	5	8.3	2	3.3		
	d)Occasionally	2	3.3	0	0.0		
	e)Never	28	46.7	15	25.0		
14.	Blood Pressure						
	a)<120/80mmHg	0	0.0	0	0.0	0.072	0.78
	b)120/80 – 140/90mmHg	5	8.3	3	5.0		
	c)Above 140mmHg	35	58.3	17	28.3		

15.	Family history of Disease						
	a)Respiratory disease	8	13.3	3	5	0.389	0.942
	b)HT	17	28.3	8	13.3		
	c)Heart diseases	5	8.3	3	5.0		
	d)Others	10	16.7	6	10.0		
16.	Hyper tension since						
	a)Less than 1 year	31	51.7	15	25.0	2.511	0.473
	b)1-3 years	6	10.0	3	5.0		
	c)3-5 years	1	1.7	2	3.3		
	d)More than 5 years	2	3.3	0	0.0		
17.	On treatment						
	a)Less than 1 year	19	31.7	10	16.7	0.717	0.869
	b)1-3 years	8	13.3	4	6.7		
	c)3-5 years	6	10.0	4	6.7		
	d)Above 5 years	7	11.7	2	3.3		
18.	Regular Activities						
	a)Yoga	19	31.7	8	15.0	1.232	0.74
	b)Meditation	13	21.7	3	13.3		
	c)Physical Exercises	6	10.0	3	5.0		
	d)None	2	3.3	0	0.0		
19.	Regular activities						
	Regular	23	38.3	7	11.7	3.574	0.16
	Sometimes	16	26.7	13	21.7		
	Irregular	1	1.7	0	0.0		
20.	Presence of co- morbidities						
	a)DM	13	21.7	6	10.0	2.445	0.48
	b)Cardiac disorder	3	5.0	1	1.7		
	c)Others	7	11.7	7	10.0		
	d)None	17	28.3	6	1.7		

In these table shows that there was significant association between religion and the effectiveness of beet root juice on reduction of blood pressure and other selected demographic variables showed no significant association with the effectiveness of beet root juice on reduction of blood pressure

DISCUSSION

The first objective was to assess the level of blood pressure among people with hypertension residing at Sothupakkam.

On the pretest mean value of pre systolic blood pressure was 140.66, with the standard deviation 7.24 and pre diastolic blood pressure mean was 87.66, with the standard deviation 4.99, post systolic blood pressure mean was 109.50, with the standard deviation 6.99 and, post diastolic blood pressure mean was 70.33 with the standard deviation 8.22.

Second objectives evaluate the effectiveness of beetroot juice on reduction of blood pressure among people with hypertension.

During the pre test score determinants, no normal hypertension, 15(25%) were pre hypertension, 45(75%)

were hypertensive persons after administering the beet root juice was given for 21 days the post test score determines, that 40(66.7%) were normal hypertension persons, 20(33.3%) were pre hypertension persons, and no hypertension persons were reported.

Hence it has been agreed that the post test level of blood pressure will be significantly lower than the pre test level of blood pressure

The third objective was to find out the association between effectiveness of beetroot juice on reduction of blood pressure with the selected demographic variables.

There was a significant relationship between religion and the effectiveness of beet root juice on reduction of blood pressure, and other selected demographic variables showed no significant association with the effectiveness of beet root juice on reduction of blood pressure

CONCLUSION

The statistical analysis shown that the mean and standard deviation of pre systolic mean was 140.66 with the standard deviation 7.24, pre diastolic mean was 87.66

with the standard deviation 4.99, and post systolic mean was 109.66 with the standard deviation 6.99 and post diastolic mean was 70.33 with standard deviation of 8.27 and, 't' test value was 22.8 and 13.1 with the $P < 0.001$ shows highly significant, and there was significant association between the selected demographic variables such as religion and the effectiveness of beet root juice on reduction of blood pressure, finally it was concluded that there was a significant improvement in the health status of the people with hypertension.

conducted in Sothupakkam village with the sample size 60 people with hypertension and they had been administered with the beet root juice on reduction of blood pressure which showed the remarkable changes in the health status of the susceptible of people with hypertension and they had give the feedback regarding the effectiveness of the natural home remedy.

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