



EFFECTIVENESS OF DRUMSTICK LEAVES TEA ON LEVEL OF BLOOD PRESSURE AMONG CLIENTS WITH HYPERTENSION AT SELECTED HOSPITAL

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ABSTRACT

Hypertension is an interesting disease entity of its own. It remains silent, being generally asymptomatic during its clinical course. As its clinical course is hidden beneath outwardly asymptomatic appearance, the disease does immense harm to the body in the form of target organ damage; hence, the WHO has named it "silent killer".⁵

This study was undertaken to evaluate the effectiveness of drumstick leaves tea on level of blood pressure among client's with hypertension at selected hospital Vellore during 2017-2018. The study was done in 60 hypertensive clients. These clients were randomly divided into two groups (n=30). The study was conducted by adopting quasi experimental, control group pretest posttest design. The experimental group was given drumstick leaves tea and control group was without intervention. Blood pressure were analyzed before and after the intervention (drumstick leaves tea) for five days. The blood pressure was measured by Sphygmomanometer, it was analyzed statistically by using descriptive and inferential statistics.

The result showed that pretest mean value of SBP was 153.5 with S.D 10.1 and the posttest mean value of SBP was 135 with S.D 8.71, were as pretest mean value of DBP = 94.2 with S.D= 8.7 and the posttest mean value of DBP was 82.2 with S.D 4.38. The calculated 't' value is 14.15 for SBP and $t = 12.97$ for DBP was found to be statistically significant at $p < 0.001$ level. This clearly shows that the administration of drumstick leaves tea on level of blood pressure among client with Hypertension had significant reduction in their posttest level of blood pressure among clients with Hypertension in experimental group.

In addition, the result observed that the calculated 't' value of $t = 4.89$ for SBP and $t = 3.77$ for DBP in control group was found to be statistically significant at $p < 0.001$ level.

This clearly shows that the administration of drumstick leaves tea on level of blood pressure among clients with Hypertension had significant reduction in their posttest level of blood pressure among clients with Hypertension in experimental group than the clients with Hypertension in the control group.

KEYWORDS : systolic blood pressure (SBP); Diastolic blood pressure (DBP); High blood pressure (HBP).

INTRODUCTION

Hypertension is ranked as fourth topmost disease based on its prevalence. It affects approximately one billion individuals worldwide. Hypertension as it could be described as "sleeping snake" which bites when it wakens up. If it sleeping one does not really bother, but when it bites, it bites with the venoms, thereby ending the various serious disabilities and even death occurs in large percentage.⁴ In developing country like India unawareness, negligence towards health services result in higher mortality rate as compared to developed country. Hypertension is an important medical and public health issue, exists worldwide.⁶

The goal of hypertension management is to prevent short and long-term complications by achieving and maintaining the blood pressure at 140/90 mm Hg or lower. Therefore, dietary modifications and lifestyle modifications should be actively performed not only before but also after starting of antihypertensive medications to improve patients controlling outcomes.⁷

In Ancient times food was a medicine. Urbanization, industrialization and cultural changes have greatly influenced our way of living and we tend to drastically deviate from those seeking apparently comfortable living conditions. Eating more artificially preserved and junk food items, life-style modifications and stressful life leads to so many disorders Like High Blood Pressure, Diabetes, Cardiac Diseases and obesity.⁸

These disorders may be prevented by early identification and treatment to promote our physical and mental health's all over the world. Studies shows that drinking drumstick leaves tea will reduce the blood pressure among hypertension clients.⁹ The Miracle of Moringa Tree Leaves (Moringa Oleifera), commonly called the "drumstick tree" and "horsesadish tree" is native of India but has been planted around the world by Regular intake of drumstick leaves powder prevents 300 diseases. Drumstick leaves powder is believed to have stabilizing effect on blood pressure, and it is believed to control the glucose level in case of diabetes mellitus. Drumstick leaves tea which has greater and positive role in the reduction of high blood pressure.¹⁰

MATERIALS AND METHODS:

Participants

Clients who diagnosed with hypertension (systolic pressure between 140-180 mm of Hg and diastolic between 90 -110 mm of Hg) and also Hypertension clients who are diagnosed to have type 2 diabetes mellitus. The Clients with other associated diseases like renal diseases, eye diseases were excluded and also Clients following other non-pharmacological therapy.

Study methods

A one group pre-test and post-test quasi-experimental design. And Non-probability purposive sampling technique were used to select the samples for this study. Assessment of level of blood pressure before employment of drumstick leaves tea was obtained and followed by administration of drumstick leaves tea is employed. Post assessment was conducted 7th day after administration of drumstick leaves tea for seven days. The participants instructed not to change their habitual physical activity level during the study period. In the present study, a structured interview schedule was used to assess the demographic variables of the samples. The level of blood pressure was measured by standardized sphygmomanometer. The blood pressure was measured before administration of drumstick leaves tea and after drinking drumstick leaves tea for seven days.

Statistical analysis

The data were analyzed by Descriptive statistics like Frequency and percentage distribution were used to analyze the variables of the study. Mean and standard deviation was used to compute before and after drumstick leaves tea. Inferential statistics - Paired "t" test was used to assess the effectiveness of drumstick leaves tea on level of blood pressure, and Chi square was used to associate the level of blood pressure with demographic variables.

RESULTS:

Table. 1, Represents the percentage distribution of pretest and posttest level of blood pressure in the experimental group and control group

Level of blood pressure	Experimental group		Control group	
	Pre test	Post test	Pre test	Post test

	f	%	f	%	f	%	f	%
Normal	0	0	0	0s	0	0	0	0
Pre-Hypertension	1	3.3	20	66.7	0	0	3	10
Stage 1 Hypertension	17	56.7	10	33.3	18	60	21	70
Stage 2 Hypertension	12	40	0	0	12	40	6	20
Total	30	100	30	100	30	100	30	100

The analysis of pretest level of blood pressure in experimental group revealed that majority 17 (56.7%) had moderate level of Blood Pressure, 12 (40%) had severe level of Blood Pressure and 1 (3.3%) had mild level of Blood Pressure.

Whereas the posttest level of blood pressure in experimental group revealed that 20 (66.7%) had mild level of blood pressure and 10 (33.3%) had moderate level of blood pressure.

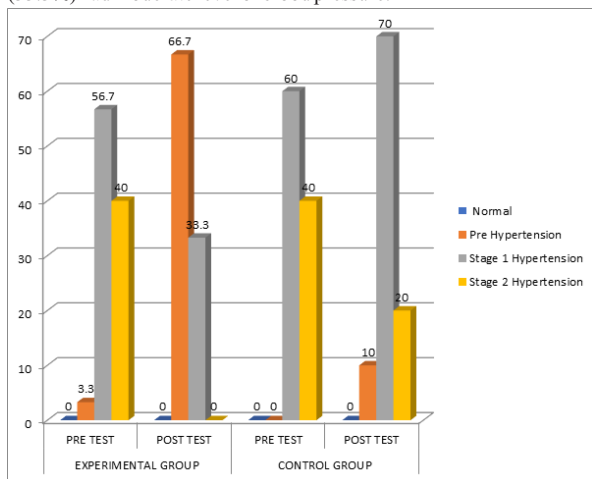


Fig.1 Represents the percentage distribution of pre test and post test level of blood pressure in the experimental group and control group

Table 2: Comparison of pretest and posttest level of blood pressure among clients with hypertension in experimental group. n=30

BP	Experimental pretest		Experimental post test		't'-value	P-value
	Mean	SD	Mean	SD		
SYS	153.5	10.1	135	8.71	14.15	P<0.001***
DIA	94.2	6.72	82.2	4.38	12.97	p<0.001***

Table 2 Represents comparison of pretest and posttest level of blood pressure score among clients with Hypertension in experimental group. The pretest mean value of SBP was 153.5 with S.D 10.1 and the posttest mean value of SBP was 135 with S.D 8.71. The pretest mean value of DBP was 94.2 with S.D 6.72 and the posttest mean value of DBP was 82.2 with S.D 4.38.

The calculated paired 't' value of t = 14.15 for SBP and t= 12.97 for DBP was found to be statistically significant at p<0.001 level. This clearly shows that the administration of drumstick leaves tea on level of blood pressure among client with Hypertension had significant reduction in their posttest level of blood pressure among clients with Hypertension in experimental group

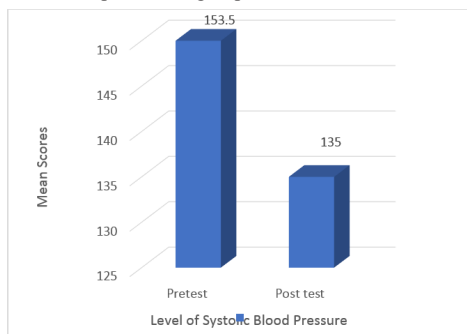


Fig 2 comparison of pretest and posttest level of systolic blood pressure Mean score among clients with hypertension in experimental group.

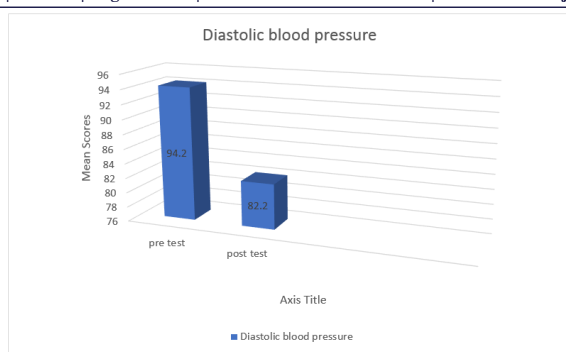


Fig 3 comparison of pretest and posttest level of Diastolic blood pressure Mean score among clients with hypertension in experimental group.

Table 3: comparison of posttest level of blood pressure score among clients with hypertension between the experimental and control group. N=60(30+30)

BP	Control posttest		Experimental post test		't'-value	P-value
	Mean	SD	Mean	SD		
SYS	146.4	9.42	135	8.71	4.89	p<0.001***
DIA	89	8.84	82.2	4.38	3.77	P<0.001***

*-P<0.05, significant and **-P<0.01 &***-P<0.001, Highly significant

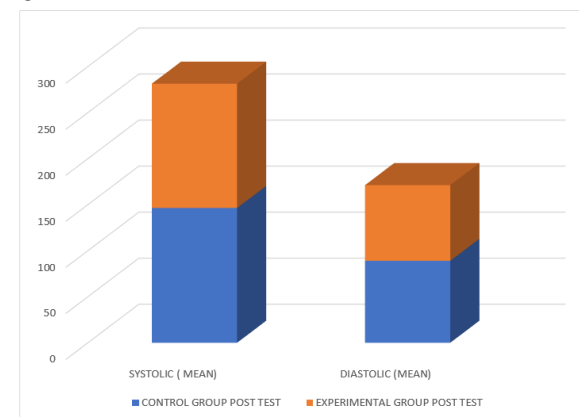


Fig 4 Comparison of posttest level of blood pressure score among clients with hypertension between the experimental and control group.

In fig 4 comparing the posttest level of SBP between the experimental and control group, the posttest mean value of SBP in the experimental group was 135 with S.D 8.71 and the posttest mean value of SBP in the control group was 146.4 with S.D 9.42. 10.1, posttest mean value of DBP in the experimental group was 82.2 with S.D 4.38 and posttest mean value of DBP in control group was 89 with S.D.8.84.

The calculated unpaired 't' value of t = 4.89 for SBP and t = 3.77 for DBP was found to be statistically significant at p<0.001 level.

This clearly shows that the administration of drumstick leaves tea on level of blood pressure among clients with Hypertension had significant reduction in their posttest level of blood pressure among clients with Hypertension in experimental group than the clients with Hypertension in the control group.

DISCUSSION:

The present study was observed that in control group the level of blood pressure significantly increased over time. Whereas, in Drumstick leaves tea in experimental group the levels of blood pressure were significantly decreased over time.

There have been several studies that examined the effectiveness of Drumstick leaves tea on level of blood pressure among hypertensive clients, Kajihara., (2008) suggested on his study that the antihypertensive effect of water extracts from drumstick leaves tea.

10g of the dried leaves with 100 ml of water were given to them by a single oral administration at 3 ml/kg body weight or by repeated oral administration at 3 ml/kg body weight /day for 1 weeks. The water extracts contained 0.3mg/ml of gamma –aminobutyric acid. Although the single oral administration of the water extract reduces systolic blood pressure in hypertensive clients, repeated oral administration for 1 weeks resulted in significant decreases compared with the control. These results suggest that the daily intake of drumstick leaves tea was effectively for prevention against hypertension.¹⁰

Oliver Hill et al, (2006), explained regarding the effect of moringa tea on treating various ailments and found out that the moringa tea has an effect to reduce hypertension and has said that intake of 1-2 tea bags a day i.e. 1500 mg/tea bag when dissolved in 300-500 ml of boiling water will cause dropping of the blood pressure within two hours after the intake of tea. Blood pressure will normalize when taken for a period of 1-2 weeks. The study concluded that Drumstick leaves tea reduces the high blood pressure. The present study results also revealed the effectiveness of Drumstick leaves tea on level of blood pressure among the hypertensive clients.¹¹

CONCLUSION:

Hypertension is called “Silent Killer” which is designed to emphasize the direct relationship between the risk of morbidity and mortality from increasing level of blood pressure. The study concluded that hypertension is a prevailing cardiovascular health problem in India. The main conclusion of this present study was the Drumstick leaves tea effectively reduces the blood pressure among clients with hypertension. This study clearly stated that drumstick leaves tea plays a vital role in reducing blood pressure among clients with hypertension.

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