

EFFECTIVENESS OF CUCUMBER JUICE ON HYPERTENSIVE CLIENTS IN SELECTED URBAN AREA OF SHENOY NAGAR CHENNAI

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Abstract

Background: The burden of non-communicable diseases (NCDs) in developing nations is increasing as a result of expanding urbanization, a growing economy, and shifting lifestyles. Hypertension, as a significant contributor to the burden of non-communicable diseases, is a global public health challenge. The global burden of hypertension is projected to be 1.56 billion in 2025; two-thirds of this will be occurring in developing countries. Hypertension disproportionately affects populations in low- and middle-income countries Wondimagegn Paulos Kumma, Bernt Lindtjørn, Eskindir Loha (2021).

Methodology: The research approach used for the study was quantitative approach. The research design adopted for the study was one group pretest and post test research design. The total size of sample comprises of 60 patients with hypertension, who fulfilled the sample selection criteria were selected for the study. **Result:** Effectiveness of cucumber juice on hypertension among patients with hypertension shows that the pretest mean score of systolic BP was 148.16 ± 12.52 and the post test mean score was 124.76 ± 10.41 . The calculated paired 't' test value of $t = 12.836$ was found to be statistically highly significant at $p < 0.001$ level. The pretest mean score of diastolic BP was 96.43 ± 7.22 and the post test mean score was 79.43 ± 10.35 . The calculated paired 't' test value of $t = 9.925$ was found to be statistically highly significant at $p < 0.001$ level. **Conclusion:** The investigator analysed the data and it could be concluded that the administration of cucumber juice on hypertension was an effective method to reduce the blood pressure level among clients with hypertension and also is evident that the blood pressure level were influenced by the demographic variables age and medication/ treatment received for hypertension.

Keywords: Hypertension, Cucumber Juice, Effectiveness.

INTRODUCTION

Among the **WHO (2010)** regions, prevalence of raised blood pressure was highest in Africa, where it was 46% for both sexes combined. Both men and women have high rates of raised blood pressure in the African region, with prevalence rates over 40%. The lowest prevalence of raised blood pressure was in the WHO Region of the America at 35% for both sexes. Men in this region had higher prevalence than women (39% for men and 32% for women). In all WHO regions, men have slightly higher prevalence of raised blood pressure than women. This difference was only statistically significant in the America and Europe.

Hypertension in India:

High blood pressure (BP) is a major public health problem in India and its prevalence is rapidly increasing among both urban and rural populations. In fact, hypertension is the most prevalent chronic disease in India.

In India (2012), 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.

ICMR (2011) predicts that developing countries will bear the brunt of this hypertension epidemic in 21st century. Currently more than 80% of people with hypertension live in low and middle income countries. It is estimated that more than 118 million people live with hypertension worldwide and it will reach 214 million adults from hypertension related causes.

Nearly 175 million people(40%) with hypertension were undiagnosed .The incidence of hypertension is high between the age group of 35-60 years, reasons for this increasing incidence is due to adaptation of more western life style, including fatty food, and too little exercises.

MATERIALS AND METHODS

The research approach used for the study was quantitative approach. The research design adopted for the study was one group pre test and post test research design. The total size of sample comprises of 60 patients with hypertension, who fulfilled the sample selection criteria were selected for the study.

Inclusive Criteria for this study Clients those who are newly and already diagnosed with hypertension without any complications and co morbidity. Male and Female aged above of 25 to 60 yrs Those who are taking regular medication and has compliance to treatment. The Formal permission was obtained from Principal of Saveetha College of Nursing and from the authority of selected community setting at Chennai for data collection.

The data collection period was 1 week. By using the purposive sampling technique 60 hypertensive clients who fulfilled inclusion criteria were selected. The investigator explained the purpose of the study to samples. A written consent was obtained from samples.

Pretest questionnaire was given for hypertensive clients. From next day onwards cucumber juice was given to the hypertensive clients two times in day in the morning and afternoon. After 7 days post test was conducted with same questionnaire and clinical assessment of blood pressure was done.

All participants cooperated well with investigators. At the end of the investigators thanked the study participants for their co-operation during the study. The data collected were coded and entered MS-Excel for further data analysis and interpretation.

SECTION A: Description Of The Demographic Variables Of The Patients With Hypertension

Table 1: Frequency and percentage distribution of demographic variables of patients with hypertension

N = 60

Demographic Variables	No.	%
Gender		
Male	34	56.7
Female	26	43.3
Age		
21 – 30 years	18	30.0
31 – 40 years	24	40.0
Above 40 years	18	30.0
Education		
High school	11	18.3
Higher secondary	26	43.3
Graduate	16	26.7
Post graduate	7	11.6
Occupation		
Employed (Full Time)	16	26.7
Employed (Part Time)	13	21.6
Self – employed	6	10.0
Unemployed	16	26.7
Student	5	8.3
Retired	4	6.7
Have you been diagnosed with hypertension?		
Yes	60	100.0
No-	-	-
Have you tried using cucumber juice as a treatment for hypertension?		
Yes	-	-
No	60	100.0
Did u have any family member who have been diagnosed with hypertension		
Yes	9	15.0
No	46	76.7
Don't know	5	8.3
How long you have hypertension?		
Less than 1 year	42	70.0
1 – 5 years	11	18.4
6 – 10 years	5	8,3
More than 10 years	2	3.3
Have you received any medication/treatment for hypertension?		
Yes	13	21.7
No	47	78.3
If yes, what type of medication/treatment?		
Medication	6	46.2
Physical therapy	3	23.1
Alternative medicine like (AYUSH)	4	30.8
Nutritional therapy	-	-
Diet		
Vegetarian	22	36.7
Mixed	25	41.6
Non-vegetarian	13	21.7
Religion		
Hindu	42	70.0
Muslim	8	13.3
Christian	10	16.7
Others	-	-

SECTION B: Assessment Of Level Of Blood Pressure Among Hypertensive Patients With Hypertension.

Table 2: Frequency and percentage distribution of level of blood pressure (Systolic BP) among patients with hypertension

N = 60

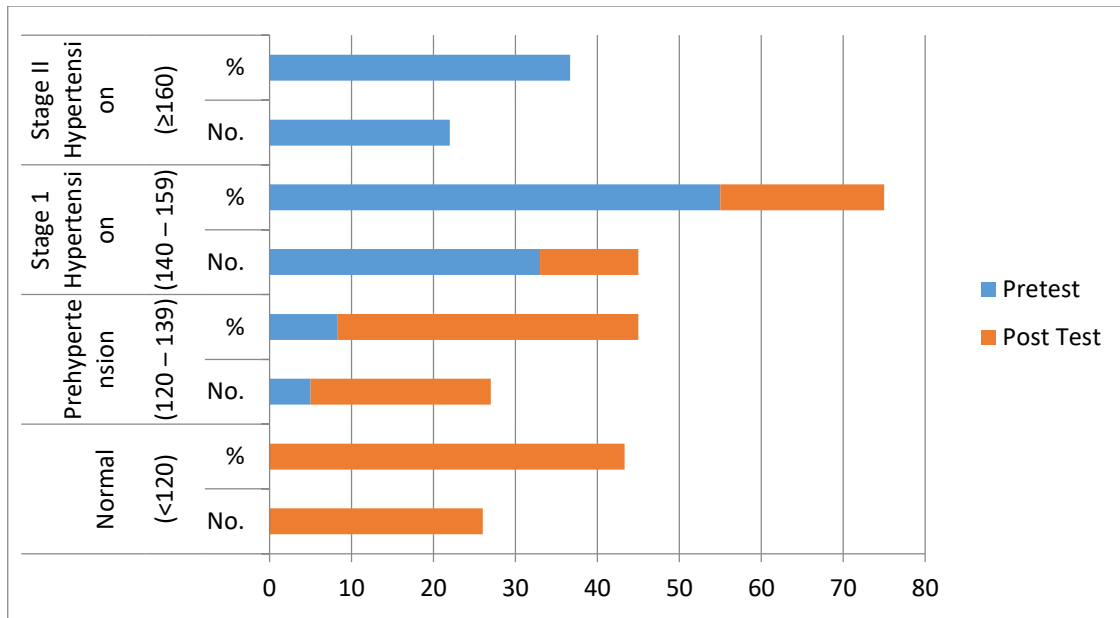
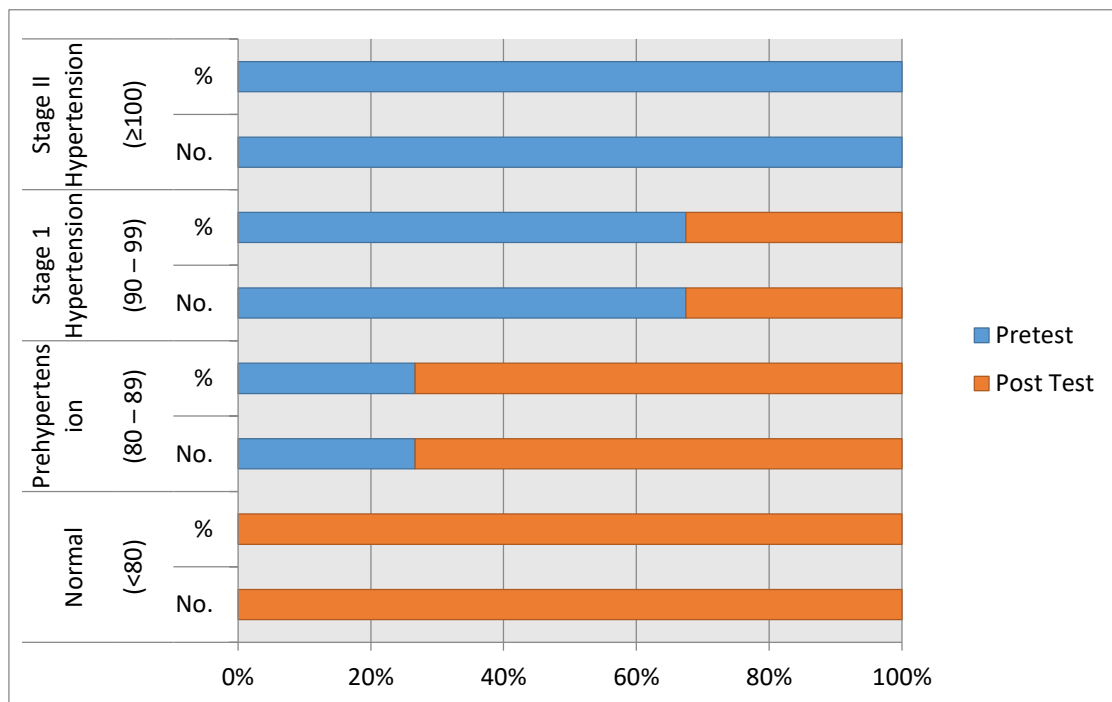


Table 3: Frequency and percentage distribution of level of blood pressure (Diastolic BP) among patients with hypertension

N = 60



SECTION C: Effectiveness Of Cucumber Juice On Hypertension Among Patients With Hypertension

Table 4: Comparison of pretest and post test level of blood pressure among patients with hypertension

N = 60

Variables	Test	Mean	S.D	Paired 't' Test Value
Systolic BP	Pretest	148.16	12.52	t = 12.836 p = 0.0001 S***
	Post Test	124.76	10.41	
Diastolic BP	Pretest	96.43	7.22	t = 9.925 p = 0.0001 S***
	Post Test	79.43	10.35	

***p<0.001, S – Significant

SECTION D: Association Of Post Test Level Of Hypertension With Selected Demographic Variables

Table 5: Association of post test level of blood pressure among patients with hypertension with their selected demographic variables

N = 60

Demographic Variables	F	Chi-Square Value	
		Systolic BP	Diastolic BP
Age			
21 – 30 years	18	$\chi^2=10.907$ d.f=4 p = 0.027 S*	$\chi^2=2.662$ d.f=4 p = 0.616 N.S
31 – 40 years	24		
Above 40 years	18		
Less than 1 year	42		
1 – 5 years	11		
6 – 10 years	5		
More than 10 years	2		
Have you received any medication/ treatment for hypertension?			
Yes	13	$\chi^2=7.628$ d.f=2 p = 0.022 S*	$\chi^2=2.524$ d.f=2 p = 0.283 N.S
No	47		
Hindu	42		
Muslim	8		
Christian	10		
Others	-		

*p<0.05, S – Significant, N.S – Not Significant

DISCUSSION

This chapter deals with the discussion of the results of the data analysis based on the objectives of the study. The aim of the study to assess the effectiveness of the effectiveness of cucumber juice on hypertensive patients in the selected community.

The objectives were

- 1) To assess the pre and post test level of blood pressure among hypertensive patients.
- 2) To determine the effectiveness of cucumber juice on hypertension among hypertensive clients.
- 3) To associate the post test level of blood pressure with the selected demographic variables.

DESCRIPTION OF THE DEMOGRAPHIC VARIABLES

The analysis revealed that most of the patients with hypertension, 34(56.7%) were male, 24(40%) were aged between 31 – 40 years, 26(43.3%) had higher secondary education, 16(26.7%) were employed (Full time) and were unemployed respectively, 60(100%) were diagnosed with hypertension and had not tried using cucumber juice as a treatment for hypertension, 46(76.7%) did not have any family members who had been diagnosed with hypertension, 42(70%) had been diagnosed with hypertension for less than 1 year, 13(21.7%) had been received medication / treatment for hypertension and in that 6(46.2%) had been treated with medication, 25(41.6%) had mixed diet and 42(70%) were Hindus.

The first objective was the pre and post test level of blood pressure among hypertensive patients

The analysis revealed in table 2 shows that in the pretest, 33(55%) had stage I hypertension, 22(36.67%) had stage II hypertension and 5(8.33%) had prehypertension. Whereas in the post test, after the administration of cucumber juice, 26(43.33%) were normal, 22(36.67%) had prehypertension and 12(20%) had stage I hypertension.

The findings from table 3 shows that in the pretest, 29(48.33%) had stage I hypertension, 23(38.33%) had stage II hypertension and 8(13.34%) had prehypertension. Whereas in the post test, after the administration of cucumber juice, 24(40%) were normal, 22(36.67%) had prehypertension and 14(23.33%) had stage I hypertension.

CONCLUSION

The investigator analysed the data and it could be concluded that the administration of cucumber juice on hypertension was an effective method to reduce the blood pressure level among clients with hypertension and also is evident that the blood pressure level were influenced by the demographic variables age and medication/ treatment received for hypertension.

Referances

- 1) AHA. (2017). What is high blood pressure? USA. Retrieved from %0Aheart.org/answersbyheart
- 2) Ali Gholami, et al., (2020). Is salt intake reduction a universal intervention for both normotensive and hypertensive people: a case from Iran STEPS survey 2016. *European Journal of Nutrition* volume 59, pages3149–3161(2020).
- 3) Bolin, L. P., Horne, C. E., Crane, P. B., & Powell, J. R. (2018). Low - salt diet adherence in African Americans with hypertension, (June).
- 4) Candra Kusuma, Erna, Anna (2018). The effect of cucumber juice (*cucumis sativus*) to blood pressure drop in elderly hypertension patients at Tresna Werdha Budi Sejahtera Social Institution Of Banjarbaru South Borneo 2017. *Indonesian Journal of Nursing Practices*, Vol. 2 No. 1.
- 5) Dinda Evania, Budi Punjastuti, Pritta Yunitasari, and Siti Maryati , (2022), "The Impact of Cucumber (*Cucumissativus*) Juice on Blood Pressure in Elderly With Hypertension" in *The International Virtual Conference on Nursing, KnE Life Sciences*, pages 481–487. DOI 10.18502/kls.v7i2.10346.
- 6) Fabiana B. Nerbass, et al., (2018). Sodium Intake and Blood Pressure in Patients with Chronic Kidney Disease: A Salty Relationship. *Blood Purif*; 45:166–172.
- 7) He FJ, MacGregor GA (2010). Reducing population salt intake worldwide: from evidence to implementation. *Prog Cardiovasc Dis*; 52:363–382.

- 8) He, F. J., & MacGregor, G. A. (2009). A comprehensive review on salt and health and current experience of worldwide salt reduction programmes. *Journal of Human Hypertension*, 23(6), 363–384.
- 9) Institute of Medicine: Dietary Reference Intakes for Water, Potassium, Sodium, Chloride, and Sulfate. National Academies Press, Washington, 2005, p 640.
- 10) Jafar TH, Islam M, Poulter N, Hatcher J, Schmid CH, Levey AS, Chaturvedi N. Children in South Asia have higher body mass-adjusted blood pressure levels than white children in the United States: a comparative study. *Circulation* 2005; 111:1291–1297.
- 11) Jian-Hong Miao., (2020). The evaluation of a nurse-led hypertension management model in an urban community healthcare. *Medicine*, 99: 27.
- 12) Kearney PM, Whelton M, Reynolds K, Muntner P, Whelton PK, He J. Global burden of hypertension: analysis of worldwide data. *Lancet* 2005; 365 :217–223.