Effectiveness of drumstick leaves juice in reduction of blood pressure among people with Essential hypertension

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Abstract

A quasi experimental design with pre test and post test control group and quantitative approach was used to assess the effectiveness of drumstick leaves juice on blood pressure among people with essential hypertension in selected rural Community Salem.. Data was collected from 25 peoples of Veerapandi for experimental group, and other 25 people of Chinnaseeragapadi for control group, by using non probability purposive sampling technique through structured interview schedule.

Findings revealed that the highest and similar percentage of the people were in the age group of 53-59 years (44%) and female (64%) in experimental and control group. All (100%) of them were Hindus in experimental group and (92%) in control group. The highest percentage (60%) of the people had no formal education in control group, and 36% in experimental group. Highest percentage (60%) of them were unemployed in control group and 28% in experimental group. Highest percentage (36%each) of the people in both group were in the monthly income of >Rs.5000. Highest percentage (64%) of them were joint family in experimental group, and 48% in control group. Highest percentages were (76%) in experimental group and 68% in control group had no bad habits. Highest percentage (20%) of them had smoking habits in control group and 14% in experimental group. Most of them (92%) were non vegetarian in control group and 68% of them in experimental group. Highest percentage (52%) of them had moderate body built in experimental group and 48% of the people in control group. Majority and similar percentage of them (84% each) were had associated illness in both groups. More or less similar percentage(71% & 70%) of them had diabetes in both experimental and control group.Highest percentage of them (78%) was had no family history of hypertension in control group and it was 68% in experimental group. Highest percentage of them (52%) had hypertension less then 1year in experimental group and it was 48% in control group.

Overall post test mean score of systolic blood pressure level in experimental group was 127.2 ± 2.82 whereas in control group it was 148.68 ± 3.82 and mean difference was 21.48. Further the diastolic blood pressure level was 86.5 ± 3.07 in experimental group and it was 94.16 ± 3.49 in control group and the mean difference was 7.66. It reveals that the effectiveness of drumstick leaves juice which is reducing the blood pressure level in experimental group.

Further the findings of this study revealed that there is a significant difference in pre and post test mean score of blood pressure level in experimental group, also significant difference in blood pressure level in experimental and control group. it can be concluded that the drumstick leaves juice was effective for reduction of blood pressure level among people with essential hypertension in experimental group.

Introduction

Human being must be leisure from stress to lead a normal healthy life. If they have sustained stress they are at the high risk of getting hypertension. Hypertension commonly called high blood pressure is sustained arterial pressure. It remains as an important health challenge. Chronic disease is an important of bodily structure and or function that necessitates a modification of the patient's normal life and has persisted even an extended period of time. The problem of chronic non communicable disease is increasing importance among the women population in both developed and developing countries (Williams, 2013).

Non communicable disease (NCD) can refer to chronic diseases which last for long periods of time and progress slowly. Sometimes, NCDs result in rapid deaths such as autoimmune diseases, heart diseases, stroke, cancers, diabetes, chronic kidney disease, osteoporosis, Alzheimer's disease, cataracts, and others.(Analva Mitra,2014).

Materials and methods

Research design and approach: An quasi experimental design and quantitative approach was used to assess the blood pressure level among people with essential hypertension.

Setting of the study: The study was conducted in Veerapandi rural area which is 2 km away from Vinayaka Mission's Annapoorana College of Nursing, Salem for experimental group and Chinnaseeragapadi, rural area which is ½ km away from Vinayaka Missions Annapoorana College of Nursing, Salem, for control group.

Population: The Population of the study was all the people with essential hypertension in Veerapandi and Chinna seeragapadi Salem in Tamil Nadu.

Sampling: The samples for the present study was people with essential hypertension in Veerapand and Chinaseeragapadi, salem.

Sample size: Sample size selected for the study was 50 people with essential hypertension among them, 25 people of Veerapandi area was assigned for experimental group, and other 25 people of Chinaseeragapadi was assigned for control group.

Sampling technique : Non probability purposive sampling technique was used to select the samples of the present study.

Criteria for selection of the sample
    Inclusive criteria
        The people who were
    •   between the age group of 25-59 years.
    •   both male and female.
    •   having Systolic blood pressure between140-159mmHg and diastolic blood.
             pressure between 90-99mmHg.

Exclusive criteria
        The people who were
    •   having peptic ulcer
    •   taking any medications for chronic condition such as Tuberculosis , Cancer.

Method of data collection

The tool used for the study were

- structured interview schedule to collect the demographic data and clinical variables.
- sphygmomanometer and stethoscope to measure the blood pressure
- lemon juice..

Description of the tool

The instrument used for this study was consists of two parts.

Section A

The structured interview schedule was consist of demographic data such as age, gender, religion, educational status, occupation, monthly income of family, type of family, and clinical data such as personal habits, dietary pattern, body build, other associated illness, family history of hypertension, and duration of illness.

Section .B

Sphygmomanometer was used to assess the blood pressure level. It is a standardised instrument to measure the blood pressure level.

Validity

The content validity of the tool was established in consulting with guide, coguide and experts from various fields such as Community Health Nursing, Medical Surgical Nursing and Statistician. Their suggestion and opinion was incorporated in modification of the tool. **Reliability**

Reliability of the tool was tested by implementing it on 5 people with essential hypertension in residing Makkalur village, Salem to test its feasibility. Inter rater method was used to find out the reliability of the tool (r=0.07).

Data collection procedure
Ethical consideration

Prior to data collection

- Written permission was obtained from the president of Veerapandi and   Chinna Seeragapadi, Salem.
- Informed oral consent was obtained from the participants.

Steps in data collection

The technique to be followed during data collection

- Explain about the purpose of the data collection to all the participants.
- People were made in relaxed and comfortable.
- Instruction related to tool were given to facilitate co-operation
- General questions asked related to demographic and clinical data
- Questions were repeated when required to facilitate answering.

Result and Discussion

Table No 4.4.1: Paired 't' test was calculated to assess the effectiveness of lemon juice for reduction blood pressure level among people with essential hypertension in experimental group.

n = 25

Blood pressure	Experimental group				Mean 't' value Difference
	Pre test		Post test		
	Mean	SD	Mean	SD	
Systolic blood pressure	145.28	4.46	127.2	2.82	18.08 4.303
Diastolic blood pressure	93.28	3.69	86.5	3.07	6.78 3.182

Table value 2.060   **p< 0.05 significant**

Paired 't' test was calculated to assess the significant difference between pre and post test blood pressure level among people with essential hypertension in experimental group. The findings shows that there is a significant difference at $p<0.05$ level. Hence, hypothesis H_1 was accepted. It shows the lemon juice was effective for reducing blood pressure level among people with essential hypertension in experimental group

Table No 4.4.2: Paired 't' test was calculated to analyze the significant Difference between post test blood pressure level among people with essential hypertension in experimental and control group.

n = 25

Blood pressure	Control post test		Experimental post test		Mean difference	't' value
	Mean	SD	Mean	SD		
Systolic blood pressure	148.68	3.82	127.2	2.82	21.48	5.12
Diastolic blood pressure	94.16	3.49	86.5	3.07	7.66	6.10

df=24   **Table value 2.060**   **p<0.05 significant**

Paired 't' test was calculated to analyze the significant difference between experimental and control group among people with essential hypertension. The findings shows that there is a significant difference at $p<0.05$ level. Hence, hypotheses H_2 was accepted. It shows that the lemon juice was effective for reduction of blood pressure level among people with essential hypertension in experimental group.(Table No.4.4.2).

Table 4.5.1 : Association between post test blood pressure level among People with essential hypertension with selected demographic and clinical variables.

n = 25

S.no	Demographic variables	X^2	Level of significance
1	Age	4.01	Significant
2	Gender	0.24	Not significant
3	Religion	0.01	Not significant
4	Education	0.06	Not significant
5	Occupation	3.98	Significant
6	Family monthly income in rupees	0.03	Not significant
7	Type of family	1.2	Not significant
8	Personal habit	4.09	Significant
9	Dietary pattern	6.13	Highly significant
10	Body built	3.82	Significant
11	Other associated illness	5.05	Highly significant
12	Family history of hypertension	6.10	Highly significant
13	Duration of illness	0.8	Not significant

df=1   Table value= 3.84   p<0.05 Significant

Chi-square test was calculated to find out the association in post test blood pressure level among people with essential hypertension with their demographic variables and clinical variables shows that, in experimental group, there was a significant association was found between post test blood pressure level and age, occupation, personal habits, dietary pattern, body built, other associated illness and family history of hypertension except gender, religion, education, family monthly income, type of family and duration of illness at p<0.05 level. Thus it can be interpreted that the difference in mean score values related to the above mentioned areas were by not chance and true difference. Hence the research hypothesis was accepted. It reveals that the drumstick leave juice was effective in reducing blood pressure level in irrespective of the demographic variables(Table No.4.5.1).

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