



## A Crosssectional Study to Assess the Dash Diet among Adults with Hypertension at Selected Rural Areas



**Prof. K. Kantha**  
Dept of Community Health  
Nursing  
Narayana College of Nursing,  
Chinthareddypalem,  
Nellore.

**Dr. J. Jasmine,**  
*College of Nursing, Mother Theresa Post Graduate  
and Research Institute of Health Sciences,  
A Government of Puducherry Institution,  
Indira Nagar, Gorimedu,  
Puducherry - 605006, India.*

**Dr. Indira. S**  
*Principal,  
Narayana College of Nursing, Nellore.*

**Abstract: Background:** Hypertension remains a global public health challenge. An estimated 26% of all adults worldwide have hypertension. The Dietary Approaches to Stop Hypertension (DASH) dietary pattern has significantly reduced high blood pressure among hypertensive adults. This study assessed the DASH diet adherence among adults with hypertension. **Objectives:** 1. To assess the level of DASH diet adherence among adults with hypertension. 2. To find out the association between the level of DASH diet adherence among adults with hypertension with their selected socio demographic variables. **Methods:** The adults with hypertension in this cross-sectional study are from rural areas of Nellore district. A total of 50 adults with hypertension were conveniently selected. Trained investigators administered a DASH diet adherence tool to each participant during a face to face interview and carried out data collection procedure. **Results:** The results shown that, out of 50 adults with hypertension with regard to the distribution of DASH diet, 9(18%) are having high adherence, 35(70%) are having medium adherence and 6(12%) are having low adherence. **Conclusion:** The study concluded that 35(70%) had medium adherence and 6(12%) had low adherence. Hence nursing educators can conduct in service education programs regarding DASH diet among adults with hypertension. **Keywords:** DASH diet adherence, hypertension, Adults.

**Introduction:** Hypertension is a chief risk factor for cardiovascular disease as well as a major public health problem in the United States due to its high occurrence. For example, the lifetime risk of developing hypertension in Americans aged 55-65 years has been estimated as 90%. Control of hypertension in the United States is inadequate. Nearly half of individuals with hypertension are not diagnosed or, if identified, not treated, and among treated hypertensives, only about half achieve the currently recommended goal of systolic blood pressure (SBP) <140 mm Hg and diastolic blood pressure (DBP) <90

mm Hg. Predictors of poor control include older age, male sex, and not having visited a doctor in the past 12 months. In addition, despite published guidelines, even those who do visit a doctor are often not adequately treated for elevated blood pressure (BP). In a survey accompanied at five Veterans Administration hospitals, antihypertensive therapy was intensified in only 6.7% of office visits although the fact that BP stayed elevated in 40% of those patients. The majority of primary care physicians report that they do not intensify treatment once SBP is 140 - 160 mm Hg or DBP is 90 - 95 mm Hg unless



the patient is younger than age 60 years. A large proportion of these physicians are unskilled with current national guidelines for hypertension control. Clearly, national efforts to improve control of high BP will require convincing clinicians to become more aggressive about its pharmacologic treatment. A complimentary approach for BP control is the increased use of effective nonpharmacologic interventions.

Nonpharmacologic strategies may also offer an opportunity to move persons with high-normal BP (the upper end of the prehypertension category by current guidelines) into a more advantageous BP category (either normal or optimal). High-normal BP, compared with optimal BP, more than doubles cardiovascular disease (CVD) risk in women and increases risk by 60% in men. Because CVD risk decreases with lower BP levels, even below the hypertension cut point, it is reasonable to suppose that nonpharmacologic approaches that reduce BP from high-normal to normal or optimal BP would reduce CVD risk. Such a change to lower categories of BP could also be expected to decrease the incidence of hypertension over time.

The Dietary Approaches to Stop Hypertension (DASH) dietary pattern, which emphasizes fruits, vegetables, and low-fat dairy products, as well as a reduced sodium intake diet, both significantly lower BP in persons with stage 1 hypertension and in those with high-normal BP. The DASH diet also lowers BP in those with isolated systolic hypertension.

The aim of the current study is to assess the

DASH diet adherence among adults with hypertension, Nellore.

**Detailed Research Plan:** This cross-sectional study was carried out in rural areas of Nellore district, the target population of this study consisted of all adults with hypertension who met the inclusion criteria like who are between 20-60 years, who are available during the data collection time.

The target population of this study consisted of 50 adults with hypertension. Sample size was calculated to assess the level of DASH diet adherence among adults with hypertension, Nellore, considering a confidence level of 95%, sampling error of 3 percentage points, percentage of losses estimated at 10%. Based on these parameters, we obtained a sample size of 50 adults with hypertension. For association tests, considering an estimated prevalence of the outcome of 50%, 80% power and 95% confidence level, this sample size would allow detecting as statistically significant DASH diet adherence ratio of up to 1.4 as a risk factor and up to 0.6 as protective factor for both genders.

**Tools for Data Collection:** The tool was divided in to 2 parts.

**Section-I:** It deals with demographic variables Age, Gender, Educational status, Occupation, Family Income, Marital status, Type of family, Dietary pattern, Use of anti hypertensive medication.

**Section-II:** It deals with assessment of DASH diet adherence among adults with hypertension.

**Data Collection Procedure:** This cross-sectional study was conducted in rural areas of Nellore district.



This study comprises of both male and female adults between 20-60 years, adults who are not willing to participate and to give informed consent were excluded from the study. DASH Adherence score was adopted to assess the DASH Adherence among the adults with hypertension.

Institutional ethics committee approved the study tool. Written informed consent was obtained from participants. The data collection procedure was carried out after obtaining formal written permission from the principal, Narayana College of Nursing and Medical officer of PHC, TP Gudur, Nellore. Data collection procedure was conducted from 22/1/2020 to 25/1/2020. 50 participants were selected by using non probability convenience sampling technique nature and purpose of the study was explained, confidentiality of information was assured by taking informed consent from the adults. Minimum of 8-9 participants per day were selected. The duration of data collection was 1 week. It took 20 minutes to complete the checklist for each sample. Checklist was administered to assess the level of DASH diet adherence in TP Gudur, Nellore. The collected data was organized, analyzed based on the objectives of study. Data was analyzed using the descriptive and inferential statistics used like Frequency and percentage distribution Mean, Median, Mode and Standard Deviation and chi square was used to test the assumption.

**Results and Discussion:** A total of 50 adults with hypertension were participated in the study.

The table 1 shows the socio demographic

profile of the participants.

**Table no.1: Frequency and percentage distribution of socio demographic profile of the among adults with hypertension. (n=50)**

<b>Demographic Variable</b>	<b>Fre</b>	<b>Per</b>
<b>Age</b>		
a. 21-30 years	11	22
b. 31-40 years	13	26
c. 41-50 years	10	20
d. 51-60 years	16	32
<b>Gender</b>		
a. Male	27	54
b. Female	23	46
<b>Marital Status</b>		
a. Married	20	40
b. Un married	25	50
c. Divorced	3	6
d. Widow	2	4
<b>Educational qualification</b>		
a. Illiterate	17	34
b. Primary education	20	40
c. High school	8	16
d. Intermediate	5	10
<b>Occupation</b>		
a. Coolie	12	24
b. Farmer	6	12
c. Un employee	22	44
d. Business	5	10
e. Housewife	5	10
<b>Family income</b>		
a. Rs.<5000/-	17	34
b. Rs.5000-7000/-	19	38
c. Rs.7001-9000/-	12	24



d. Rs.9001-11000/-	2	4
<b>Type of family</b>		
a. Nuclear	15	30
b. Joint	29	58
c. Extended	6	12
<b>Diet</b>		
a. Vegetarian	19	38
b. Non vegetarian	24	48
c. Ova vegetarian	3	6
d. Lacto vegetarian	4	8
<b>Use of anti hypertensive medication</b>		
a. Yes	50	100
b. No	0	0

**Table no.2: Frequency and percentage distribution of DASH diet among adults with hypertension. (n=50)**

Distribution of DASH diet	Fre	Per
a. High adherence	9	18
b. Medium adherence	35	70
c. Low adherence	6	12
<b>Total</b>	<b>50</b>	<b>100</b>

**Table no. 2:** In context to distribution of DASH diet, 9(18%) are having high adherence, 35(70%) are having medium adherence and 6(12%) are having low adherence of knowledge.

**Fig no.1: Percentage distribution among adults based on level of DASH diet.**

**Association between the level of DASH diet in hypertension among adults with their selected socio demographic variables shows** Marital status, Education, Occupation, Type of family and Diet were having significant association. Age, Gender and Family Income were non significant.

**Discussion:** The high rate of undiagnosed and uncontrolled hypertension is often cited as a clarion call for increased medical management of high BP. However, hypertension is already the most common non traumatic reason for a visit to a physician’s office, and antihypertensive medications cost more than \$10 billion per year. The resources that would be required to successfully control hypertension solely by increasing medical care and medication treatment for the estimated 32 million Americans with undiagnosed or inadequately controlled hypertension are considerable. In addition, it is clear that cardiovascular risk is not confined to levels that meet criteria for a diagnosis of clinical hypertension. Above optimal BP also carries significant risk and has recently been termed prehypertension to reflect this risk. Indeed, the number of persons with above optimal BP or stage 1 hypertension is so large that the majority of BP-related CVD events occur in this segment of the population. Clearly, to achieve the greatest reduction in these events, the medical management of hypertension must be complemented by effective nonpharmacologic strategies that can be applied at the population level.

Population-based change in dietary pattern has been proposed as a nonpharmacologic strategy for controlling and preventing hypertension. Our study assessed the level of DASH diet adherence among adults with hypertension. In this study, we included persons with stage 1 hypertension, including a subset with stage 1 ISH

Both the DASH diet and a reduced sodium





intake significantly improved BP control in persons with hypertension and led to optimal or normal BP in many persons with high-normal BP. Public health and clinical strategies for improving BP control rates should include recommendations to follow the DASH dietary pattern.

**Conclusion:** The study concluded that 35(70%) had medium adherence and 6(12%) had low adherence. Hence nursing educators can conduct in service education programs regarding DASH diet among adults with hypertension.

#### References:

1. Vasan RS, Beiser A, Seshadri S, et al. Residual lifetime risk for developing hypertension in middle-aged women and men: the Framingham Heart Study. *JAMA*. 2002; 287:1003-1010.
2. The sixth report of the Joint National Committee on prevention, detection, evaluation, and treatment of high blood pressure. *Arch Intern Med*. 1997; 157:2413-2446.
3. Hyman DJ, Pavlik VN. Characteristics of patients with uncontrolled hypertension in the United States. *N Engl J Med*. 2001; 345:479-486.
4. Berlowitz DR, Ash AS, Hickey EC, et al. Inadequate management of blood pressure in a hypertensive population. *N Engl J Med*. 1998; 339:1957-1963.
5. Hyman DJ, Pavlik VN. Self-reported hypertension treatment practices among primary care physicians: blood pressure thresholds, drug choices, and the role of guide lines and evidence-based medicine. *Arch Intern Med*. 2000; 160:2281–2286.
6. Chobanian AV, Bakris GL, Black HR. Seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. *Hypertension*. 2003; 42:1206-1252.
7. Vasan RS, Larsen MG, Leip EP, et al. Impact of high-normal blood pressure on the risk of cardiovascular disease. *N Engl J Med*. 2001; 345:1291–1297.
8. Appel LJ, Moore TJ, Obarzanek E, et al. A clinical trial of the effects of dietary patterns on blood pressure. *N Engl J Med*. 1997; 336:1117-1124.
9. Svetkey LP, Simons-Morton D, Vollmer WM, et al. Effects of dietary patterns on blood pressure: subgroup analysis of the Dietary Approaches to Stop Hypertension (DASH) randomized clinical trial. *Arch Intern Med*. 1999; 159:285-293.
10. Sacks FM, Svetkey LP, Vollmer WM, et al. Effects on blood pressure of reduced dietary sodium and the Dietary Approaches to Stop Hypertension (DASH) diet. (The DASH-Sodium Trial). DASH-Sodium Collaborative Research Group. *N Engl J Med*. 2001; 344:3-10.
11. Vollmer WM, Sacks FM, Ard J, et al. Effects of dietary patterns and sodium intake on blood pressure: subgroup analysis of the DASH Sodium trial. *Ann Intern Med*. 2001; 135:1019–1028.
12. Moore TJ, Conlin PR, Ard J, et al. The DASH diet is effective treatment for stage 1 isolated systolic hypertension. *Hypertension*. 2001; 38:155-158.
13. Arumugam Indira & Katari Kantha Hypertension among the Adults in Leguntapadu Vs Vavilla, Nellore *Imperial Journal of Interdisciplinary Research (IJIR)* Vol-2, Issue-11, 2016.