

Dietary Assessment on Selected Hypertensive Government Employees in the Southeast Coast Province of the Philippines: A Case Study Series

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Abstract. This study assessed the dietary practices of five selected hypertensive government personnel in Southeast Coast Province of Philippines as compared with the Philippine standard Required Energy Nutrient Intake (RENI). These hypertensive personnel with dietary restriction were purposively selected. Their dietary intake was determined using 24-hour dietary recall for three consecutive days. Data were calculated using the USDA National Nutrient Database for Standard Reference.

All cases had first or second degree relatives with hypertension, engaged in light physical daily activities (clerical, administrative or classroom teaching work). All had a prescribed anti-hypertensive maintenance medication but only two were compliant. They were on self-modified diet without professional prescription.

The hypertensive personnel had inadequate intake of calorie, Ca (276.20 mg), K (1,155.40 mg) and Na (787.60mg). These were much lower than the prescribed RENI of 500, 2000 and 5000 mg respectively. Their self-imposed dietary restrictions may have influenced the inadequacy of the essential mineral nutrients.

The study confirms the common concept of dieting which is often self-prescribed, and practiced to mean, “abstaining food” which leads to malnutrition and complicates rather than manages hypertension, even among better schooled employees.

Keywords: hypertension, dietary management, assessment, calcium, potassium, sodium

1. Introduction

Hypertension is an important public health problem worldwide [1], and its incidence in the global adult population in 2000 had reached 26.4%. It was projected to increase to 29.2% by 2025 [2]. Hypertension is an independent predictor of cardiovascular disease, cerebro-vascular accidents and death [3]. It was ranked sixth and fourth in the Philippines morbidity and mortality, respectively [4]. The general dietary management for hypertension includes reduced sodium (Na) [5], adequate calcium (Ca) and potassium (K) which are claimed to lower blood pressure [6].

Assessing the diet of hypertensive government personnel is baseline information towards generating strategies and instruments for appropriate interventions that prevent and control hypertension through diet management. Findings of this study will be useful to raise the awareness among the hypertensive personnel about the significant role of diet as a risk factor of hypertension.

2. Objectives of the Study

This study aimed to assess the dietary practices of the hypertensive government employees in the Southeast Coast Province of the Philippines. Specifically this study aimed:

- To describe the hypertensive personnel’s health profile in terms of anthropometric characteristics, vital sign, lifestyle, physical activity, family history of hypertension, illnesses and medication;

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- To determine and describe their dietary profile in terms of terms of calorie, calcium (Ca), potassium (K), sodium (Na) consumption and other dietary restrictions;
- To compare the estimated Calcium (Ca), Potassium (K) and Sodium (Na) content in their diet with the Philippine standards, Recommended Energy Nutrient Intakes (RENI).

3. Method

3.1. Study Design

This is a descriptive study of a small group, case series. Hypertension was the common case and each respondent was considered as individual case. The individual dietary assessment on nutrient intake in Calcium (Ca), Potassium (K) and Sodium (Na) were estimated based on individual case.

3.2. Study Subjects

Five hypertensive government personnel of in the Southeast Coast Province of the Philippines were purposively selected among the confirmed hypertensive personnel and were further evaluated using Category A: 40 years or older, with prescribed maintenance medication, and had no other diagnosed illnesses or disorders. Category B: with no dietary restriction, with prescribed or un-prescribed dietary restriction. Selection was further limited to those who agreed to be a part of the study. Each respondent were considered as a case.

3.3. Data Gathering Instruments

This study utilized two data gathering instruments; (a) an interview schedule which served as a guide in gathering the data on health and dietary profile; (b) the Food and Nutrition Research Institute-Department of Science and Technology (FNRI-DOST) 24-Hour Diet Recall Form [7] was used to record the daily food items, beverages, snacks, and food supplements the individual case has eaten each day in a period of three days immediately before the interview. The amount of food consumed was expressed in standard measures or serving sizes.

3.4. Dietary Data Collection and Data Analysis

Interview schedule was used in determining individual case health and dietary profile. Their daily food intake were recorded in the standard FNRI 24-Hour Diet Recall Form through a detailed investigation of food items, beverages, snacks, and food supplements including manner of preparation, ingredients and additives used, number of servings, serving sizes of the individual case has eaten each day in a period of three days immediately before the interview.

The nutrient values of each food and drink item in terms of Calorie, Ca, K and Na were analyzed using the USDA National Nutrient Database for Standard Reference [8]. The nutrient value of each food item was expressed in milligram (mg). Individual nutrients intake in a period of three days were described in mean mg intake of Ca, K and Na. The means were compared with the RENI, and standard deviation (SD) was calculated to show the variations.

4. Results and Discussion

4.1. The Cases and Their Health Profile

Each of the five hypertensive cases had first or second degree relatives with hypertension, and engaged in light physical daily activities which were limited to clerical, administrative or classroom teaching work. All had a prescribed anti-hypertensive maintenance medication but only two were compliant.

4.2. Diet Profile

The five hypertensive cases had a self-modified diet without professional prescription. Diet restrictions included carbohydrates, meat and salt. Their self-imposed dietary restrictions obviously contributed to their inadequate intake of calorie and intake of essential minerals. Only one had calorie intake which had met the Recommended Energy Requirement (RER). All had low mean intake of Ca (276.20 mg), K (1,155.40 mg) and very low intake of 787.60 mg Na. Assessment of their diet showed that all respondents were taking the essential minerals way below the RENI Standards of 500 mg, 2000 mg and 5000 mg [9], respectively.

Table 1. The health profile (anthropometric and vital characteristics) of the five hypertensive government employees in Southeast coast province of Philippines.

Health Parameters	Case					Mean	SD
	1	2	3	4	5		
Age of Each Case	40	42	44	49	54	45.80	5.67
BMI: Description	normal	overweight	overweight	normal	overweight		
Calculation	19.8	28.0	25.0	19.8	25.3	23.6	3.63
Blood Pressure:							
SBP mmHg	140	160	180	200	150	166	24.08
DBP mmHg	110	110	110	120	90	108	9.80
Stage of Hypertension	1	2	2	2	1		0.55

Table 2. Mean (mg) Ca, K and Na in the diet of hypertensive personnel from the East Coast Province of Philippines.

Mineral	Case					Mean	SD	RENI Standard
	1	2	3	4	5			
Ca	241	68	634	281	157	276.20	216.12	500
K	1,286	792	1,142	1,113	1,444	1,155.40	242.07	2,000
Na	627	403	896	780	1,232	787.60	309.44	5,000

Diet with not enough K, Ca, or Mg is a risk factor for hypertension [10]. Moreover, the hypertensive cases' dietary Na was too low compared with the WHO recommended of 2000 mg in reducing blood pressure [11]. FNRI-DOST recommended that Required Energy and Nutrient Intake (RENI) for Filipinos shall be followed in modifying diet to attain dietary requirements.

This case series had clearly described the low dietary intake of Ca, K and Na of the hypertensive individual cases. This also confirms that the common concept of dieting means, "abstaining food" which leads to malnutrition and complicates rather than managing hypertension even among better schooled employees.

This study implies that a dietary Ca and K and Na shall conform to the RENI standards in managing hypertension. These data have health significance and therapeutic implications. However, individualized prescribed diet should be more appropriate.

4.3. Recommendations

- **Policy.** It is suggested that a physician's prescriptions for hypertensive individuals shall include individualized diet which shall be referred to a Dietitian for interpretation, transcription and dietary counseling.
- **Education.** Information-education-communication materials for hypertensive people should be produced to complement the diet prescription.
- **Research.** Further study on factors associated with insufficient intake of Ca, K, and Na should be considered.

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