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PREVALENCE AND CAUSES OF HYPERTENSION AMONG RURAL ADULTS IN TRANS –YAMUNA AREA OF ALLAHABAD

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ABSTRACT

The Present study was carried out in Chaka block and Jasarablock of Allahabad. A total of one hundred and fifty respondents out of which 75 subjects from chaka block and 75 subjects from Jasara block aged 20-35 years of age were selected and they were personally interviewed with the help of pretested interview schedule by visiting the study area (Chaka and Jasara block).The anthropometric measurements of the respondents i.e. height in cm and weight in kg were taken. Dietary intake was determined by 24 hour dietary recall methods and the average nutrient intake was calculated by using the food composition tables, and compare with RDA (ICMR, 2004).To figure out all the observation it is concluded that mostly non vegetarian, smokers, obese people with a family history of hypertension were found to be hypertensive. Most of the respondents were malnourished as was depicted by their pale skin and their being highly underweight. The respondents were being made aware about the type of diet they should consume and to adopt the healthy lifestyle practice with the help of the leaflet that was being prepared.

Key words: Nutritional status, Consumption, Recommended Dietary Allowances, Prevalence.

INTRODUCTION

Blood pressure is the pressure that blood exerts against the blood vessel walls as the heart pump blood. The pressure increase when the heart contracts and pushes blood in to the blood vessels and lower when the heart relaxes. Hypertension is defined as having a sustained systolic and diastolic blood pressure greater than 140 and 90 mm Hg respectively (Streppel *et. al.*, 2008).

Hypertension is a of great public health concern worldwide due to its significant contribution to the global health burden and its role as a prominent risk factor for the development of a no. of disease processes. People with high blood pressure reported headaches as well as lightheadedness, vertigo, tinnitus, altered vision or fainting episodes.

This study on the prevalence and causes of hypertension among the rural adults to pay attention become World Health Organization has estimated that hypertension causes one in eight deaths worldwide, making hypertension the third leading killer in the world. One in five adults may have hypertension (Whitsell, 2011).

The medical research council of UK (2003) conducted a trial involving treatment with drugs, the stroke rate was reduced with drug treatment but there was no difference in the death rate. This study is an effort to make

the rural people of this age group aware of this condition, its causes, its complications and the way to escape it.

MATERIALS AND METHODS

The study was conducted in two blocks Chaka and Jasara of Allahabad district. A total number of one hundred and fifty respondents out of which 75 subjects from chaka block and 75 from chaka block aged 20-35 years of age were selected purposively by random sampling included in the study.

Pre-structured interview questionnaires were used to collect information regarding age, education, occupation, food habits, type and size of family, Religion, caste, total family income and precipitate income, type of house and fuel. Nutritional knowledge of the subject was assessed by using questionnaires.

Twenty-four hour dietary recall and food frequency questionnaire methods were used to assess the dietary intake of the respondents. Average of different nutrients intake values was calculated by using Food composition table values (Gopalan *et. al.*, 2002). The calculated value was compared with RDA (ICMR, 1998). The anthropometric measurements of the respondents like height, weight were measured as per standard methods given by Park (2002). BMI of the respondents was

computed from body weight in kilograms divided by height in meter square. Classification system (James *et. al.*,1988) was used to define the extent of malnutrition in the subjects in the form of Chronic Energy Deficiency (CED). The clinical assessment of the respondents like Systolic blood pressure and Diastolic blood pressure was measured with the help of sphygmomanometer and stethoscope (Srilakshmi, 2005).

RESULTS AND DISCUSSION

Table 1 Shows that out of 150 respondents were 67.33 percent male and 32.67 percent were female and Majority of the respondents was living in nuclear families (54%).there are 51.33 % majority on the 31-35 of age. Out of total population (150 respondents 76.67 % were illiterate. In activity pattern most of the women were moderate worker 46% followed by heavy worker 54%. Maximum rural adults 39.33 % belonged to lower income group with an average monthly income of less than Rs. 10,000 followed by 42.67 %.

Table -1 Socio-demographic data of rural adults in the Trans-Yamuna area of Allahabad district

S. no.	Particulars	N=150	Percentage (%)
1.	Sex:		
	Male	101	67.33
	Female	49	32.67
2.	Age (Years):		
	20-25	34	22.67
	26-30	48	32
	31-35	68	51.33
3.	Religion:		
	Hindu	108	72
	Muslims	19	12.67
	Christians	23	15.33
4.	Occupation:		
	labourer	42	28
	Agriculturist	47	31.33
	Pheri wale	25	16.67
	Rickshaw-chalak	26	17.33
	Others (shopkeeper, thekedar, housewives etc)	10	6.67
5.	Education:		
	Illiterate	115	76.67
	Primary	22	14.67
	High school	5	3.33
	Intermediate	-	-
	Graduation	8	5.33
	Post- graduation	-	-
6.	Activity level		
	Moderate	69	46
	Heavy	81	54
7.	Family type:		

	nuclear	81	54
	joint	69	46
8.	Monthly Income		
	<Rs. 10,000	59	39.33
	Rs. 10,000- 20,000	64	42.67
	>Rs. 20,000	27	18

Table -2 Frequency distribution of rural adults in the Trans-Yamuna area according to their food habits and dietary pattern

S. no.	Particulars	N=150	Percentage (%)
1.	Food habits:		
	vegetarian	50	33.33
	Non vegetarian	60	40
	Ova-lacto	40	26.67
2.	Type of milk consumed:		
	Cow's milk	88	58.67
	Buffalo's milk	40	26.67
	Toned milk	22	14.67
3.	Oil used for cooking:		
	Mustard oil	66	44
	Mustard oil + Sesame oil	37	24.67
	Mustard oil + Dalda	34	22.67
	Sesame oil + dalda	13	8.67
4.	Excess consumption of saturated fats (desi ghee, vanaspati ghee, butter etc):		
	Yes	83	55.33
	No	67	44.67
5.	Frequently skip meals:		
	Yes	25	16.67
	No	125	83.33
6.	Prefer sweets:		
	Yes	92	61.33
	No	58	38.67
7.	Prefer spicy food much:		
	Yes	84	55.33
	No	66	44.67
8.	Prefer eating junk food :		
	Yes	58	38.67
	No	92	61.33
9.	No. of glass of water taken per day:		
	5-10	54	36
	10-15	86	57.33
	15-20	10	6.67

FOOD HABITS AND DIETARY PATTERN

Food habits out of 150 respondents, 40 % was non vegetarian, 33.33 % was vegetarian and 26.67 % was ova-lacto. Afsahn *et.al*, 1995 reported that hypertension was higher among non-vegetarian as compared to vegetarian and ova-lacto. There are majority of respondents were taking the cow's milk was high (58.67%) as compared to buffalo's milk (26.67 %) and 16.67 % were taking toned milk. 44 % respondents used mustured oil for cooking, 24.67 % used sesame oil, 22.67 % used dalda along with mustard oil and 8.67 % used sesame oil along with dalda. The number of glass of water taken per day by the respondents was 5-10 glasses by 36.5 respondents, 10-15 glasses by 57.33 % respondents and 15-20 glasses by 6.67 % respondents. Nazni *et.al*. (2012) finds in her study that hibiscus tea lowers the blood pressure in hypertensive adults.

Table-3 Frequency distribution of rural adults in the Trans-Yamuna area of Allahabad district according to the habits of addiction

S. no.	Particulars	N=150	Percentage (%)
1.	smoke		
	No	39	26
	Occasionally	41	27.33
	Chain smoker	70	46.67
2.	Drink		
	No	27	18
	occasionally	64	42.67
	Heavy- dinker	59	39.33
3.	Paan		
	No	81	54
	Yes	69	46
4.	Use table salt		
	No	71	47.33
	sometimes	45	30
	Daily	34	22.67
5.	Tobacco		
	No	40	26.67
	sometimes	60	40
	Daily	50	33.33

LIFESTYLE PRACTICES OF THE RESPONDENTS

Smoking among the respondents, 46.67 % or chain smokers, 27.33 % were occasional smokers and 26 % didn't smoke at all. There are 39.33 % respondents were highly consumed alcohol; occasionally by 42.67 % and 18 % didn't drink. 46 % respondents were found to be regular pan eaters while 54 % were not. 22.67 % majority of respondents consumed table salt, 30 % used some times and 47.33 % didn't use any table salt. The tobacco was used by 33.33 percent respondents daily, 40 % used occasionally and 26.67 % didn't use it.

Table -4 Frequency distribution of rural adults in the Trans-Yamuna area according to the clinical assessment

S. no.	Particulars	N=150	Percentage (%)
1.	Skin quality		
	Pale or unhealthy	48	32
	Satisfactory	68	51.33
	fine	34	22.67
2.	Often feel lethargic or weak		
	Yes	69	64
	No	81	54
3.	Any family history of		
	no	51	34
	Don't know	63	42
	Hypertension/Heart disease	25	16.67
	Diabetes	11	7.33
4.	Suffering from Diabetes mellitus		
	Yes	17	11.33
	No	133	88.67
5.	Symptoms of hypertension		
	Uneasiness	20	13.33
	Uneasiness + Stress	20	13.33
	Uneasiness + Anger	10	6.67
	Uneasiness + Headache	26	17.33
	No	74	49.33

CLINICAL ASSESSMENT OF THE RESPONDENTS

In the family history 32 % respondents had pale and unhealthy skin, 51.33 % had satisfactory skin quality where as 22.67 % had fine skin quality. 46 % respondents felt lethargic where as 54 % didn't felt so. Out of 150, 34 % had no family history of hypertension, 42 % didn't know about that, 16.67 % had a family history of hypertension and 7.33 % had diabetes. The symptoms were uneasiness at times was felt by 13.33 % respondents, stress along with uneasiness was felt by 6.67 %, headache 17.33 % and 49.33 % didn't show any symptoms. Most of hypertensive respondents show the tendency of getting hyper at times.

The mean anthropometric measurements of respondent of Allahabad are presented in Table 4. The mean body height and weight were 167.54 cm, 65.87kg (in men) according to ICMR (66.77 kg) and 155.4 cm, 60.87kg (in women) was greater than the ICME standard value (58.75 kg).

Table 5: Anthropometric measurements

Measurements	Gender	No. of respondents	Observed mean	Standard value	Differences
Height (cm)	Men	101	167.54	165.72	-1.82
	Women	49	155.4	160.35	4.95
Weight (kg)	Men	101	65.87	66.77	0.9
	Women	49	60.87	58.75	-2.12

Table -6 Prevalence of obesity among rural adults in Trans- Yamuna area of Allahabad district according to their calculated BMI:

S. no.	Particulars	Results	N=150	Percentage (%)
1.	BMI (Kg/m²)			
	<25	Non-Obese	68	45.33
	25-29.99	Mild	35	23.33
	30-39.99	Moderate	45	30
	40 and above	Severe	2	1.33

The prevalence of obesity among rural respondents of Allahabad according to BMI grades is given in Table6. Among study population 45.33% respondents belonged to the category of normal BMI, 23.33% respondents were mild obese, 30% were moderate and 1.33 % were obese. Obesity is major driver for the widely prevalent hypertension.

Table -7 Frequency distribution of rural adults in the Trans- Yamuna area according to their Systolic and Diastolic blood pressure:

S. no.	Particulars	N=150	Percentage (%)
1.	Systolic B.P. (mm of Hg)		
	<=100	25	16.67
	101-120	54	36
	121-140	48	32
	141-160	9	6
	161-180	4	26.67
	181-200	4	26.67
	201-220	6	4
2.	Diastolic B.P. (mm of Hg)		
	70-80	55	36.67
	81-90	39	26
	91-100	28	18.67
	101-110	16	10.67
	111-120	6	4
	121-130	-	-
	131-140	3	2
	141-150	3	2

DIFFERENT RANGE OF SYSTOLIC AND DIASTOLIC BLOOD PRESSURE

The systolic blood pressure of 16.67 % respondents was less than 100 mm of Hg, 36 % had 101-

120 mm of Hg, 32 % had between 121-140 mm of Hg, 6 % having between 141-160 mm of Hg, 2.67 % had between 161-180 mm of Hg, 2.67 % had between 181-200 mm of Hg and 4 % had 201-220 mm of Hg. The diastolic blood pressure of 36.67 % was 70-80 mm of Hg, 26 % had 81-90 mm of Hg, 18.67 had 91-100 mm of Hg, 10.67 % had 101-110 mm of Hg, 4 % had 11-120 mm of Hg, 2 % had between 131-140 mm of Hg and 2 % had between 141-150 mm of Hg. In systolic B.P. there was 120 to 140 mild hypertension, 140-160 moderate hypertension, and >160 had severe hypertension and in diastolic B.P there was 90-104 mild hypertension, 105-120 moderate hypertension, and >120 respondents had severe hypertension.

Table -8 Prevalence of hypertension among rural adults in Trans- Yamuna area of Allahabad district:

Results	N	Percentage (%)
Non-Hypertension	79	52.67
Mild	40	26.67
Moderate	9	6
Severe	22	14.67

Table 8. Shows that the 14.67 % were found severely hypertensive, 6 % were moderately hypertensive, 26.67 % had mild hypertension and 52.67 % were not hypertensive at all.

Table 9- Average consumption of food groups (N=150)

Everyday		
Food groups	N	Consumption (%)
Cereals	150	100
Pulses	68	45.33
Green leafy vegetables	2	1.33
Roots and tubers	118	78.67
Oils and fats	150	100
Milk and milk products	7	4.67
Meat	2	1.33
Fruits	9	6
Sugar and jiggery	143	95.33

Table 10- Average Nutrient consumption of respondents

Nutrients	Consumption (g/ day)			
	Men		Women	
	Intake	RDA	Intake	RDA
Energy (kcal)	2582	3800	2175	2925
Protein (gm)	84	60	60	50
Calcium (mg)	429	400	357.85	400

Iron (mg)	31	28	26	30
Thiamine (mg)	0.72	1.2	0.799	0.9
riboflavin (mg)	0.65	1.4	0.94	1.1
folic acid (µg)	89.08	100	86.08	100

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Table 10 Shows that the average nutrients intake of all the nutrients by the respondents. The RDA of hypertensive adults provides 20 kcal per day per kg body weight of calories for obese individuals and 25 Kcal per kg body weight for non-obese (Srikakshmi, 2005). Here the difference (of average intake) is calculated from the normal RDA for moderate and heavy workers. It was found out at the average intake of almost all the nutrients was found to be lesser than the RDA. However the intake of protein was found to be more than the normal RDA for both men and women.

CONCLUSION

It is concluded that the blood pressure of the rural adults ranged from severely hypertensive to moderately hypertensive and 52.67 percent had no hypertension. Mostly non vegetarian, smokers, obese people with a family history of hypertension were found to be hypertensive. Majority of the respondents were malnourished as was depicted by their pale skin and their extreme BMI. With the help of leaflet prepared, the respondents were made aware about the type of diet they should consume, taking in to considerable locally available food stuff, for the maintenance of proper weight management as well as proper B.P. levels. They were also made conscious about proper weight management through appropriate lifestyle practices for maintaining proper B.P. levels. This study helps the rural adult to know about their nutritional needs as well as the dietary recommendations for the hypertensive.

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