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# A Study About Correlates and Alertness on Hypertension

KEYWORDS


| * Dr. R.G. Anand | Dr. S.Latha Maheshwari | A.N.Kalpana |
|---|---|---|
| Assistant Professor,Department of Community medicine,ACS Medical college,Chennai.91 * Corresponding Author | Assistant Professor,Department of Community medicine,Govt Stanly Medical college,Chennai.91 | Research Scholar, Department of Population Studies ,Chennai -91 |


**ABSTRACT** *High blood pressure is a major public health problem, because it is undetected and uncontrolled. Recent studies have shown that every known person with hypertension there are two persons with either undiagnosed hypertension or prehypertension. This study was conducted to identify the risk factors associated with hypertension and to study the awareness about hypertension. A community-based cross-sectional study among adults aged more than 20 years. A comprehensive pre tested pre structured questionnaire was used. Chi square test was used as test of significance, co efficient regression was calculated to check the correlation of variables. There was a strong association of prevalence of hypertension and people's lifestyles also. Smokers were tend to be more hypertensive than non¬-smokers and the same trend was found between alcoholics and non alcoholics. In individuals with higher B.M.I., the prevalence of hypertension was also increasing; and those who were physically inactive not doing any exercise, (cycling, walking etc), the prevalence of hypertension was found to be high. Only 49% of the hypertensives were aware of their blood pressure status, and only 25% of them were being treated. There is a continued need for community based education programme for hypertensives, who are unaware of their diagnosis and incorporate such programme into the existing primary health care system.*

**Introduction**: The prevalence of chronic diseases is showing an upward trend in most countries due to Increasing life expectancy in most countries and greater number of people are living to older ages and are at greater risk to chronic diseases of various kinds, the rapidly changing life styles and behavioural pattern of the people (eg. smoking, alcoholism etc.) combined with predicted decrease in the morbidity and mortality from infectious diseases, the future burden of noncommunicable diseases is likely to be a major emerging health challenge for developing countries. Hypertension is one of the most important contributors to heart disease stroke which together make up the world's number one cause of premature death and disability. Hypertension is reported to be the seventh contributor to premature death in developing countries. Recent reports indicate that nearly 1 billion adults had hypertension in 2000 and this is predicted to increase to1.56 billion by 2025. The prevalence of hypertension in the early twentieth century varied among different studies in Rural India from 2 to 8%, and increases with age in all populations. Various factors might have contributed to this raising trend. Prevalence among rural adults has increased from 10-15%. Hypertension awareness and control status is low and only a quarter of the rural people being aware of its presence. Preventive measures are required so as to reduce obesity, increasing physical activity, decreasing salt intake and related risk behaviors.

**Objectives:**

To identify the risk factors associated with hypertension.

To study the awareness about hypertension among the study population.

**Review of Literature:**

**Family History:** Sherman J.J. et al. after adjusting for BMI a significant family history x age x gender interaction suggested that the effect of family history on systolic blood pressure by age and gender. The influence of positive family history becomes apparent in males by age 20 and females by age 22. Gopinath, S.L. Chandha in their epidemiological study of hypertension carried out on a random urban sample of young persons (15.24 yrs) of Delhi and found 43.1% of hypertensive had Family History of hypertension.

**Physical Activity:** Jajoo U.N. et al. detected the prevalence of hypertension in an asymptomatic rural community from Central India, being higher in women and the level of physical activity, economic status, body mass index showed a real association with hypertension Singh R.B. et aL found Coronary Artery Disease and coronary risk factors were 2 to 3 times higher among the urban compared with their rural subjects, which may be due to sedentary behaviour and alcohol intake among urban.

**Smoking and Alcohol:** Gupta et al. found smoking and alcohol intake both individually and collectively were related to high prevalence of hypertension as well as Coronary Artery Disease (C.A.D.).

**Body Mass Index BMI:** Akatsu.H. et al. found 17% prevalence of hypertension and most of them were overweight/ obese women with upper body type obesity which is associated with increased cardiovascular risk.

**Salt:** Mufunda J A al assessed sodium sensitivity by measuring the Bp response to acute dietary sodium restriction and sodium loading and found mean arterial pressure in rural and urban subjects increased when they change from low to high salt. **Urinary Sodium and Potassium ratio** Kaufman J.S. et al. found mean sodium potassium ratio in 24 hour urine sample was 2.6 (1.0) and higher among urban residents correlated with systolic and diastolic blood pressure.

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**Multiple Risk Factors:** Singh R.B. Beghum.R. et al. in their multi variate analysis revealed that age, higher BMI and higher socioeconomic status were independently associated with hypertension in both sexes. Higher dietary fat and salt in take and lower physical activity were weakly but significantly associated with hypertension.

**Materials and Methods:** A crosssectional study was conducted among 810 samples in the Primary Health Centre (Naravarikuppam) area, using cluster sampling technique.

**Study Population**
Adult's population aged 20 years and above of both sexes was considered eligible to be included in the study.

**Study Instrument:**
A comprehensive structured questionnaire consisting of objective type question was developed and modified by pilot testing and on expert advice. The first part sought information on the sociodemographic aspect like age, sex, occupation, and education, per capital income, marital status. The second part sought information on the lifestyle like smoking, alcohol consumption, physical activity, family history of hypertension, Diabetes, dietary habits and oral contraceptive use and third part consists of question regarding the awareness about hypertension among the study population, followed by measurement of blood pressure and calculation of BMI.

**Statistical Analysis**
Data entry was made using FoxPro software and analysis was done using EPI 6 and SPSS packages. Percentage was calculated for variables and 95% confidence intervals were calculated (Appendix fV), The chisquare test was used as test of significance. Coefficient regression was calculated to check the correlation of variables with systolic and diastolic blood pressure.

**Limitation**
A major shortcoming of present investigation is the use of blood pressure measurements obtained on a single occasion to characterize hypertension of the study population. Single visit measurements even when averaged may overestimate the prevalence of hypertension by 17%.

**Results:**
**Habits**
Smokers (239) and alcoholics (152) were found in the study population. Other habits like pan/tobacco chewing were very few hence not considered for analysis.

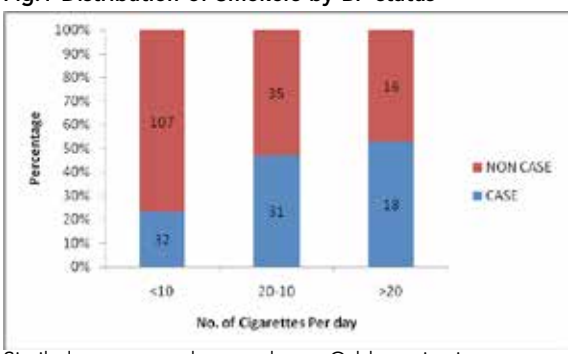
**Smoking**
The prevalence of hypertension was more in smokers (30.93%) than the nonsmokers (20.31%). Even the exsmokers had higher prevalence (46.67%). The O.R. of hypertension among smokers (including exsmokers) was 2.01 (C.I. 1.41 to 2.86) Table 1.

**Table 1**
**Smoking And Hypertension**

| Habit | Hypertension | Normal | Total | Chi Square | P-Value |
|---|---|---|---|---|---|
| Smoking Yes | (30.93%)60 | 134 | 194 | 21.79 | 0.000** |
| No | (20.31%) 116 | 455 | 571 | | H.S. |
| Ex | (46.67%)21 | 24 | 45 | | |

Among 66 smokers who smoked 1020 cigarettes/day, 31 individuals (47%) developed hypertension, whereas 18 individuals (53%) developed hypertension out of 34 who smoked >20 cigarettes/day. Trend Chisquare (16.32) (P00005) showed a significant increase in hypertension as the smoking quantity increased (Fig. 8).

**Fig.1 Distribution of Smokers by BP status**



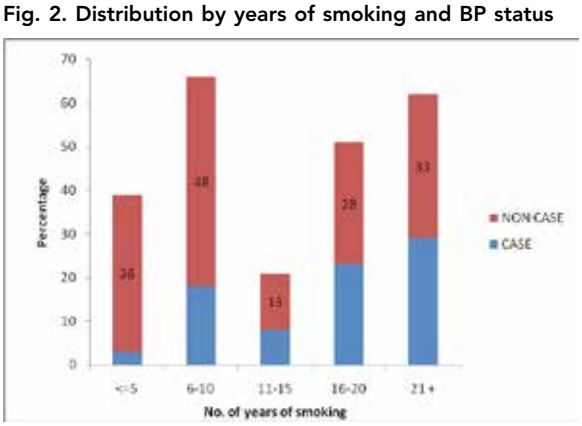

Similarly, among the smokers, Odds ratio increases to 10.55 as the duration of smoking increases to more than 20 years.

**Table 2**
**Duration Of Smoking And Hypertension**

| Period | Hypertension | Normal | Total | OR |
|---|---|---|---|---|
| ≤ 5 years | 3 | 36 | 39 | 1.00 |
| 6 -10 years | 18 | 48 | 66 | 4.50 |
| 11-15 years | 8 | 13 | 21 | 7.38 |
| 16-20 years | 23 | 28 | 51 | 9.86 |
| 21 years & More | 29 | 33 | 62 | 10.55 |
| Total | 81 | 158 | 239 | |

In this study, the prevalence of hypertension increased as the duration of smoking increased.

**Fig. 2. Distribution by years of smoking and BP status**




**Alcoholic**
The prevalence of Hypertension was significantly higher in alcoholics (chisquare=39.82, p=0.0000) than nonalcoholics (45.28% among alcoholic

where as 19.79% in nonalcoholic), Even the exalcoholic had higher prevalence (41.30%).

Compared to nonalcoholic (Table 3).

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**Table 3**
**Alcoholic And Hypertension**

| Habit | Hypertension | Normal | Total | Chi Square | P-Value |
|---|---|---|---|---|---|
| Alcohol Yes | 48 | 58 | 106 | 39.82 | 0.0000** |
| No | 130 | 528 | 658 | | |
| Ex | 19 | 27 | 46 | | |
| Total | 197 | 613 | 810 | | |

**Family History**
The prevalence of hypertension was more in individuals with family history than in individuals with no Family History.

**Table –4**
**Family History Of Hypertension**

| Family History | Hypertension | Normal | Total | Chi-square | P-value | OR |
|---|---|---|---|---|---|---|
| Father Yes | 57 | 75 | 132 | 40.91 | 0.0000** H.S. | 4.23 (2.61-6.88) |
| No | 49 | 273 | 322 | | | |
| Not Known | 91 | 265 | 356 | | | |
| Mother Yes | 37 | 56 | 93 | 16.26 | 0.0000** H.S. | 2.67 (1.59-4.47) |
| No | 73 | 295 | 368 | | | |
| Not Known | 87 | 262 | 349 | | | |
| Both Parent | | | | 13.32 | 0.0003** H.S. | 4.28 (1.73-10.69) |
| Yes | 13 | 11 | 24 | | | |
| No | 85 | 308 | 393 | | | |

**Food Habit**
The prevalence of hypertension among the study population did not show any relation to the food habit (Table 5).

**Table 5**
**Hypertension And Food Habits**

| Food | Hypertension | Normal | Total |
|---|---|---|---|
| Vegetarian | 25 | 68 | 93 |
| Non-Vegetarian | 172 | 545 | 717 |
| Total | 197 | 613 | 810 |

P = 0.5406.

Awareness About Hypertension In The Study Population

The level of awareness regarding high blood pressure among the study population was significantly different between those with hypertension and the normal subjects. This, was 62.94% among hypertensions and only 53.01% among normal individual (Table 6)

**Table 6**
**Awareness About High Blood Pressure**

| BP Awareness | Hypertension | Normal | Total |
|---|---|---|---|
| Aware | 124(62.94) | 325(53.01) | 449 |
| Not-aware | 73 | 288 | 361 |
| Total | 197 | 613 | 810 |

P = 0.0147

**Table 7**
**Percentage of persons with hypertension Who were aware treated and controlled**

| Hypertensives (n = 197) | | |
|---|---|---|
| Aware | Treated | Controlled |
| 96 | 49 | 12 |
| 49% | 25% | 6% |

**Discussion:**
The habits of smoking and alcohol consumption were widely prevalent among males in this study population and found strongly associated with hypertension. Analysis showed that the prevalence of hypertension were found increasing as the quantity (Number of eighties / day) and duration of smoking increased in the community. Therefore these personal habits were considered most important in the aetiopathogenesis of hypertension in these population. Similar association were found in the other studies also.

There was a close link between the hypertension and family history of hypertension in this study population. Individuals with history of hypertensive father showed an increased prevalence of hypertension (OR4.23) than the individuals with history of hypertensive mothers (OR2.67), whereas, if both the parents were hypertensive, the prevalence of hypertension was still higher. (O.R. 4.28). Gopinath N. et al., in their epidemiological study of hypertension in the urban sample of young persons (1520 years) in Delhi also found that family history of hypertension was present in 43. 1% of hypertensives.

Only 49% of the hypertensives were aware of their blood pressure status, and only 25% of them were being treated. It is note worthy that only 6% were controlled with medication

De Lena S.M. et al., conducted a study on the prevalence of hypertension in a small population of Buenos Aircs (Spanish) and noticed 47% of the hypertensive individuals were aware of being hypertensive, 35% were treated and only 7.6% were controlled with the medication[49].

**Recommendations**
Imparting appropriate training to medical and paramedical personnel in P.H.C. to reorient their approaches in diagnosis and treatment of elevated blood pressure would be crucial.

**Conclusion:**
A striking lack of awareness of elevated blood pressure was found among the participant and the suboptimal rate of control among those treated. To achieve the final goal of eliminating all blood pressure related diseases in this community, detection and treatment of hypertension must be complemented by equally energetic approaches directed at primary and primordial prevention of hypertension.

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