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Research article

A study to assess knowledge regarding hypertension among hypertensive clients in a selected urban slum of Kolkata

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Abstract

Introduction: Hypertension, the most prevalent non-communicable disease is a major risk factor for cardio and cerebrovascular complications. Obtaining information from hypertensive patients about their knowledge on hypertension is important for effective management of the disease. **Aim:** To assess knowledge about hypertension and its association with demographic characteristics of hypertensive people of an urban slum of Kolkata.
Methods: This was a descriptive study involving 100 hypertensive patients in the selected urban slum of Kolkata, West Bengal. A self- structured validated questionnaire was used to obtain information from hypertensive people. Knowledge regarding hypertension was assessed using a 25-item questionnaire and was scored as inadequate (≤8), average (9-17) and adequate (≥19). SPSS 16 was used for statistical analysis.
Results: Mean age of participants was 49.1yrs and most were male (52%), married (38%) and had a high school education (57%). The mean knowledge score was 10.3 (SD± 2.43) and 56%, 38% and 6% of study participants had inadequate, average and adequate knowledge respectively. All demographic characteristics except marital status and religion had a significant association with knowledge score ($p<0.05$).
Conclusion: The participants had low knowledge score, and demographic characteristics were significantly associated with knowledge score. Health care providers should ensure in imparting knowledge regarding health maintenance and management.

Keywords: Hypertension, Knowledge, Demographic characteristics, Association

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1. Introduction

Hypertension is a silent killer disease in both developed and developing countries. It is the most significant risk factor for mortality and morbidity of cardiovascular organ leading to various major organ damages [1]. Hypertension is one of the leading causes of the global burden of disease. Hypertension doubles the risk of cardiovascular diseases including coronary artery disease (CAD), Congestive Heart Failure (CHF), Ischemic and hemorrhagic stroke, renal failure and peripheral arterial diseases [2].

Blood pressure levels, the rate of age-related increase in blood pressure, and the prevalence of hypertension vary among countries and subpopulation within a country. Hypertension is present in all population except for a small number of individuals living in primitive, culturally isolated societies [3] The WHO has estimated that about 62% of cardiovascular disease and 49% ischemic heart disease burden worldwide are attributable to suboptimal blood pressure levels whereby high blood pressure is estimated to cause 7.1 million deaths annually, accounting for 13% of all deaths globally [3]. Kearny et al. in 2005 projected that the number of adults with hypertension will increase by 60% by 2025 [4].

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As per World Health statistics of 2012, the non-communicable disease was the most common cause of all global deaths occurred in 2008. Cardiovascular diseases (48%) cause the largest proportion of non-communicable diseases deaths. Raised blood pressure was one of the attribute able (13%) risk factor of all global deaths. Hypertension is reported to be the fourth contributor to premature death in developed countries and the seventh in developing countries [5].

Hypertension is the term used to denote elevated blood pressure. Depend on methods of patient ascertainment, 80-95 % of hypertensive patients are diagnosed as having "essential hypertension" (also referred to as primary or idiopathic hypertension). Essential hypertension tends to be familial and is likely to be the consequence of an interaction between environmental and genetic factors. The prevalence of essential hypertension increases with age. Individuals with relatively high blood pressure at younger ages are at increased risk for the subsequent development of hypertension. [2, 6].

In India, the prevalence of hypertension has increased among rural (10-15%) and urban (25%) adults. From an epidemiologic perspective, there is no obvious level of blood pressure that defines hypertension. Many research findings show that it is highly advisable to reduce and maintain the blood pressure to normal to avoid complications that arise from high blood pressure. To reduce or control blood pressure, anti-hypertensive agents are used along with lifestyle modifications. Drug therapy is recommended for individuals with a blood pressure more than or equal to 140/90 mm of Hg. The effectiveness of antihypertensive drug and its benefit is related to the magnitude of blood pressure reduction. Single agent or a combination of drugs may be used to treat hypertension depends on their age, the severity of hypertension, other risk factors, and comorbid conditions. There are various guidelines like Joint National Commission for the prevention, Detection, Evaluation, and Treatment of High Blood Pressure report, British Hypertension Society Guidelines (BHSG), and 2003 European Society of Hypertension (ESH). A European Society of Cardiology guideline for the management of arterial hypertension suggests various protocols to be followed while using antihypertensive agents for the treatment of different stages of essential hypertension [6-8].

Major advancement occurred in the healthcare system in promoting the awareness, early detection, treatment, and adequate control of hypertension (HTN); however, studies indicate that about 50%–75% of patients diagnosed with or being treated for HTN does not have adequate control of their blood pressure [9-13]. Effective control of hypertension is achieved by increasing public knowledge and awareness, especially about the complications associated with uncontrolled blood pressure. In 1972, the National High Blood Pressure Education Program was launched to enhance the public's knowledge about HTN and the seriousness of the disease condition [14]. These education programmes were effective to some extent [15]. Data from the National Health and Nutrition Examination Survey (NHANES II and NHANES III) reported that there was an increase in BP awareness during the time period 1976–1991 from 51% to 73% [16]. Few studies have assessed HTN knowledge and awareness in the general population and found that there was a decreased level of knowledge and awareness [17, 18]. Assessment of knowledge is a crucial element of hypertension control, but little information is available from developing countries where hypertension has lately been recognized as a major health problem.

Even though studies have been conducted evaluating knowledge and awareness among the hypertensive population,[19- 21] these studies have been relatively small and not comprehensively assessed HTN knowledge and awareness, and have not attempted to validate patients' responses. It is important to know patients' clinical blood pressure data to understand the relationship between their knowledge regarding hypertension, and blood pressure control so that it can be evaluated in the context of their clinical values.

The purpose of this study was to assess HTN knowledge, among the hypertensive population of the urban community of Kolkata. The objectives of the study were to assess the knowledge about hypertension and to associate the level of knowledge with selected demographic characters.

2. Methods

Research Design

A quantitative approach and descriptive survey design were adopted for the present study. The study was conducted in ward 77 of Kidderpore urban slum under Kolkata Muncipal Corporation, West Bengal. The sample included in the study was hypertensive people of age group 31-70 yrs. People who were not in a state to understand the questions due to mental or neurological disorders were excluded from the study. Non-probability purposive sampling was adopted to select samples for the study. The sample size was calculated as per the prevalence of adequate knowledge from previous studies and it was calculated to be 100. A structured questionnaire was used to collect the demographic characteristics and knowledge about hypertension. Blood pressure was measured using the same calibrated sphygmomanometer twice, once after establishing rapport and second after completion of the questionnaire. An average of both the readings is taken into consideration.

The knowledge was scored as inadequate (<50%), moderate (50-75 %) and adequate ($\geq$75%) knowledge. The purpose of the study was explained to the subjects and written consent was obtained. Permission was obtained from Swasthya Bhawan Salt Lake for data collection from ward no 77 of Kidderpore urban slums. The main study was conducted in Jul–Aug 2016. Descriptive and

inferential statistics were used for data analysis using SPSS 16.

3. Results

The collected data were tabulated, analyzed and interpreted.

Demographic characteristics:

Frequency and percentage distribution of socio-demographic characteristics of adults with hypertension are shown in Table 1. Of the 100 hypertensive people belonged to 100 families of an urban slum, 32% were in the age group of 51-60 yrs. Mean age of the sample was 50.1 (SD±10) yrs and more than half (52%) were male. Married people accounted for 38 % of the total sample; the rest were single, widowed or divorced. The majority (61%) were Muslims and were studied up to high school (57%). Laborers consisted of 36% of the total sample, and 09% were unemployed. The family history of hypertension was present in 42% of the sample; however, 12% agreed that they were not aware of it. Among those who had a family history of hypertension, 26% reported that their father was hypertensive. More than half (52%) of the sample conveyed that they were diagnosed to have hypertension for more than five years duration. Most (60%) of them have not attended any formal education on hypertension. At the time of data collection, 88% of the sample found to be hypertensive and 12% were normotensive [Table no 2, 3].

Table no 1: Frequency and percentage distribution of demographic characteristics

n = 100

Characteristics	Frequency	(%)
Age in years: 31 -40	22	22
41-50	28	28
51-60	32	32
61-70	18	18
Gender: Male	52	52
Female	48	48
Marital status: Married	38	38
Unmarried	20	20
Widow/widower	30	30
Separated/ Divorced	12	12
Religion: Hindu	17	17
Muslim	61	61
Others	22	22
Education: Illiterate	13	13
Primary school	27	27
High School	57	57
Characteristics	Frequency	(%)
Graduation and above	03	03
Occupation: Labourer	36	36
Private	23	23
Government	14	14
Retired & pensioners	18	18
Unemployed	09	09
The family history of HTN:Yes	42	42
No	46	46
Not Known	12	12
If 'Yes' Specify: Mother	16	16
Father	26	26
Duration of HTN: < 5 yrs	48	48
>5yrs	52	52
Attended education on HTN-Yes	40	40
No	60	60
BP - Normotensive	12	12
Hypertensive	88	88
Hypertensive	00	00

Knowledge Level regarding Hypertension

The frequency and percentage distribution of knowledge level regarding hypertension are shown in Table 2.

Table no 2: Distribution of level of knowledge regarding HTN n = 100

Knowledge Level	Frequency	%	Mean	Standard deviation
Inadequate	56	56	10.3	2.43
Average	38	38		
Adequate	06	06		

Table 2 explains that out of 100 people with hypertension, 56% had inadequate knowledge, 38% had the average knowledge and only 06% had adequate knowledge regarding hypertension. The mean knowledge score was 10.3 (SD± 2.43).

Association of knowledge with selected demographic characteristics:

Table 3 shows the association of knowledge regarding hypertension with selected demographic characteristics. The association between level of knowledge on hypertension with age, gender, education, occupation, family history of hypertension, attended formal education on hypertension and blood pressure reading at the time of data collection were statistically significant at p 0.05 levels [Table no 03].

Table 3: Association of knowledge with selected demographic characteristics

n = 100

Characteristics	n	Knowledge score			Chi-square
Age in years:		Inadequate	Average	Adequate	
31 -40	22	03	14	05	67.1445 P<0.00001(S)
41-50	28	06	21	01	
51-60	32	31	01	00	
61-70	18	16	02	00	
Gender					8.7763 P= 0.012423 (S)
Male	52	36	15	01	
Female	48	20	23	05	
Marital status:					7.7656 P = 0.255786 (NS)
Married	38	16	20	02	
Unmarried	20	14	04	02	
Widow/widower	30	18	11	01	
Separated/ Divorced	12	08	03	01	
Religion:					1.5974 P = 0.812491(NS)
Hindu	17	10	05	02	
Muslim	61	34	24	03	
Others	22	12	09	01	
Education:					57.1098 P<0.00001 (S)
Illiterate	13	12	01	00	
Primary school	27	16	11	00	
High School	57	28	26	03	
Graduation and above	03	00	00	03	
Occupation:					20.339 P = 0.009127 (S)
Labourer	36	29	05	02	
Private	23	08	14	01	
Government	14	08	04	02	
Retired & pensioners	18	07	10	01	
Unemployed	09	04	05	00	
The family history of HTN:					10.0308 P = 0.039913 (S)
Yes	42	16	22	04	
No	46	32	12	02	
Not Known	12	08	04	00	
If 'Yes' Specify :					1.0096 P = 0.603622 (NS)
Mother	16	06	08	02	
Father	26	06	16	04	
Duration of diagnosis					1.8128 P = 0.403971(NS)
< 5 yrs	48	30	15	03	
>5yrs	52	26	23	03	
Formal education					22.8553 P = 0.00001 (S)
Yes	40	11	24	05	
No	60	45	14	01	
BP					21.2639 P = 0.000024 (S)
Normotensive	12	02	06	04	
Hypertensive	88	54	32	02	
Hypotensive	00	00	00	00	

S = Significant NS = Non significant

4. Discussion

Hypertension is an enormous public health issue because it is a reversible risk factor for stroke, is chaemic heart disease, congestive heart failure, renal failure and peripheral vascular disease. It is important to assess the hypertensive patient's knowledge regarding their disease condition so that it helps them to comply with medication.

The first objective of the study was to assess the knowledge about hypertension. The present study addresses only the baseline or existing knowledge about hypertension among people with hypertension. The outcome of the study revealed that the majority (56%) had inadequate knowledge on hypertension.

Mahajan H, et al. in Mumbai conducted a study to assess the knowledge, attitude, and practice of hypertension in

hypertensive patients. The results showed that the majority of patients had poor scores in the knowledge, attitude, and practice of hypertension [22]. Similarly, another study conducted in California, USA [23] showed that hypertensive patients had inadequate knowledge and awareness about their disease condition. There are studies that are not in line with the present study findings. In a study in Sri Lanka to assess the patient's knowledge and awareness about hypertension and adherence to antihypertensive medication, revealed that the majority (69%) had adequate knowledge about hypertension [24]. A cross-sectional prospective study on the prevalence, knowledge, awareness, and attitudes of hypertension and its risk factors among pharmacists estimated that 90% of respondents had good knowledge about hypertension [25]. Similar results were reported in other studies [26, 27]. In this study low scores of knowledge may be due to poor literacy and low occupation status and unavailability of appropriate information regarding hypertension.

The majority (32%) of the sample were in the age group of 51-60 yrs and mean age of the sample in this study was 50.1 yrs. A study on Hypertension knowledge, attitude, and practice in adult hypertensive patients showed the age of patients ranged from 19 yrs-90 yrs with a mean age of 50.5 yrs [28]. Most of the studies on the prevalence of hypertension show that the majority of hypertensive patients are in the age group of 51-60 yrs [16, 29].

In our study more than half (52%) were male, and 38% were married. These findings are in consistent with the study conducted by Venkatachalam J et al [30] and Angelina Alphonce Joho [31]. Most participants in this study were laborers or unskilled workers with a high school education. These findings are similar to Mahajan et al. [22]. In this study, only 40% of participants received formal education on hypertension from their clinics. These findings are inconsistent with other studies [27].

One of the objectives of the study was to find the association of knowledge with selected demographic characteristics. In our study, there was a statistically significant association between age and knowledge about hypertension. This result was similar to another study finding where there was a significant relationship between knowledge score about hypertension and age of the participants [32]. This was in agreement with other studies [33-36].

In our study, the statistically significant association was observed between knowledge score and gender. This finding was supported by other studies [36-38] and was in disagreement with other studies [32, 33, 35, 39]. We studied the influence of marital status and religion on knowledge about hypertension and found to be non-significant. This was in line with the findings of studies to assess the prevalence of hypertension and knowledge regarding prevention of stroke [40] and effect of knowledge on control of blood pressure [41]. In contrast, other studies reported that marital status is significantly associated with knowledge score [42, 43].

A statistically significant relationship was seen between the knowledge score and educational level of the participants of this study. Samal D et al. [44] In Vienna highlighted that education level was significantly associated with knowledge of increased risk, possible consequences of hypertension and knowledge about non-medication treatment options among hospitalized patients with stroke. These findings were in consistent with other study results [32, 36, 41- 43, 45, 46]. This result was, however, contrary to findings of Bollu M et al. [47] in which the participant's education level did not have any association with knowledge score.

In this study, it was found that a participant's occupation has a significant association with knowledge score. These findings were in agreement with many studies [32, 35, 43, 45, 48, and 49] and disagree with other study findings (41).

A statistically significant association was found between family history of hypertension and knowledge about hypertension. This finding was comparable with other study results [36, 42, and 50.51]. But a divergent report was seen in a few studies [33, 35, 52].

Knowledge about hypertension and duration of disease was significantly associated with our study. This finding was analogous to many studies as the longer the people suffered from chronic disease like hypertension, the better their knowledge regarding their disease condition [32, 33, 36, 53]. On the other hand, some studies showed no significant association between duration of hypertension and knowledge regarding hypertension [35, 41, 46].

The present study revealed that participants who received a formal education regarding hypertension had a significantly high level of knowledge score. This result was parallel to the findings of the community-based cross-sectional study by Kasa [48] where knowledge about hypertension was significantly associated with health information received. It was also supported by many other studies [33, 35, 38].

This study has shown that knowledge score and blood pressure control are significantly associated. Similarly, many other studies disclosed that participants who had adequate knowledge helped themselves to have their blood pressure under control [44, 52, 54]. But it was alarming that some studies showed no association with knowledge score and blood pressure control [41, 53].

Limitations:

A descriptive survey design using a non-probability sampling with small sample size has the limitations for generalization as it does not represent the true population. There is no standardized tool available to assess the knowledge regarding hypertension. So the questionnaire we prepared and the scoring must have created some artificial significance or non- significance.

Conclusion

Considering the low rate of knowledge on hypertension among hypertensive patients health care providers need to reinforce the activities to improve their knowledge level focusing on the importance of taking regular medicine, follow up and adopting healthy lifestyle changes. The patients need to be given a clear understanding of every aspect of their care. The community needs to be sensitized the issues of non-communicable diseases like hypertension by Government through various health policies and health programmes. Public enlightenment campaigns can be organized through mass media like radio and television. Further, it is recommended that high powered studies are also needed to assess the knowledge level of hypertensive patients to generalize the findings.

Conflict of interest:

The authors declare that there is no conflict of interests.

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