Does being under treatment improve knowledge attitude practice for hypertension: A hospital-based study from North India

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ABSTRACT

Background: Studies suggest that approximately half of patients with raised blood pressure (BP) are undetected, that half of those detected are not treated, and that half of those treated are not controlled, famously described as the “rule of halves.” Importantly, the cornerstone of the primary prevention of cardiovascular diseases is early detection and drug treatment (antihypertensive) of patients with high BP. Studies across populations in developed world have shown that awareness and management of high BP levels are far from optimal. The present study was planned with the aim to assess the knowledge, attitude, and practices (KAP) regarding hypertension in hypertensive patients visiting Tertiary Care Hospital in North-West India.

Materials and Methods: Already diagnosed hypertensive patients seeking care at the tertiary care center were selected for this study. The participants were recruited using consecutive sampling technique. All participants were interviewed with the help of a semi-structured questionnaire after obtaining a written informed consent. The components of the KAP were recorded using a score sheet.

Results: In all, 394 hypertensive patients of whom majority (239/394; 61%) were males, were included in the study. The KAP score among the study subjects was 88.4%, 90.83%, and 95.83%, respectively. Males had higher knowledge about normal BP levels which was statistically significant (P < 0.01). Among the attitude, regular intake of anti-hypertensive drugs, regular investigations, lifestyle changes, avoidance of salt and allopathic medicines being the best for the treatment of hypertension were found to be significant statistically (P < 0.01).

Conclusion: The high score among the study population can be attributed to the fact that all study participants were diagnosed patients of hypertension seeking care in a tertiary care hospital.

Keywords: Hypertension, hypertensives, knowledge, attitude, practices

Introduction

Hypertension has emerged as a disease entity of significant importance in many developing nations, including India, which are in epidemiological transition from communicable diseases to noncommunicable diseases (NCD’s). Hypertension is one of the major contributors to the global burden of diseases causing 9.4 million deaths worldwide globally which comprises one-third of global preventable premature deaths. A host of factors such as aging of the populations, rapid urbanization along with lifestyle factors those favor sedentary habits, obesity, alcohol consumption, and increased salt intake have been incriminated for the emergence of hypertension and other coronary vascular diseases.

Hypertension is a common disease entity which can be controlled through both pharmacological treatments as well as lifestyle factors. Using pharmacological measures for...
treating hypertension gives twin benefit of decreasing blood pressure (BP) and subsequent adverse cardiovascular events. The lifestyle measures for lowering BP include restricted salt and alcohol intake, increasing physical activity and reducing weight. The advantage of lifestyle modifications lies in the collateral benefit of controlling other cardiovascular risk factors like raised cholesterol levels, cessation of smoking, control of blood sugar in diabetic patients, thereby emphasizing the importance of multi-factorial approach to effective risk reduction in hypertensives. Due to the scarcity of resources and concomitant burden of other NCD in a country like ours, it is imperative to promote lifestyle modifications along with cost-effective use of health services for the control of these chronic diseases.

Existing behavior change models emphasize evaluating the perceptions, attitudes, and beliefs along with outcome expectation for understanding behavior patterns so as to incorporate the necessary behavior change. It is in this context that assessment of knowledge, attitude, and practices (KAPs) is useful in chronic diseases like hypertension and diabetes mellitus as lifelong adoption of healthy lifestyle practices is key to their prevention and control.

Studies have shown that many patients did not have the appropriate knowledge about NCDs like hypertension and diabetes mellitus so increasing their knowledge and awareness about such diseases will help in reducing the morbidity and mortality of such diseases. Studies also suggest that approximately half of patients with raised BP are undetected, that half of those detected are not treated, and that half of those treated are not controlled, famously described as the “rule of halves.” Importantly, the primary prevention of cardiovascular diseases has been early detection and drug treatment (antihypertensive) of patients with high BP. Studies across populations in developed world have shown that awareness and management of high BP levels are far from optimal.

Materials and Methods

The current study was conducted in Outpatient Department (OPD) Clinic of a Tertiary Care Hospital of North-West India. The study was conducted from October 1, 2015, to December 31, 2015. A KAP questionnaire was administered to hypertensive patients (seeking care for hypertension) after establishing its validity among patients attending OPD clinic of the tertiary care hospital. Before the start of the study, approval to conduct the study was obtained from Institutional Ethical Committee of GMC Jammu.

All the patients visiting the OPD block of internal medicine were enquired about and only those who were known hypertensive (as per records available with the patients) were selected for the study purposes. Thus, all such consecutive patients willing to participate in the study were recruited for inclusion. Written informed consent was obtained from each of the study subjects before administering the questionnaire. Those who were not willing to be interviewed were excluded from the study.

A semi-structured interview schedule was constructed by an expert group of public health specialist from the tertiary care center. It was administered in local dialect. A prepiloting of the questionnaire before its use was performed for evaluating its suitability in information gathering. After a preplot session was completed, the authors amended the questionnaire, wherever necessary based on unanimous decision by the expert group. The aim of this step was to arrive at a questionnaire that was unambiguous, appropriate, and acceptable to the respondents.

After the necessary modifications were incorporated, it was pilot tested on 25 randomly selected known OPD patients of hypertension to assess the utility of the questionnaire. These 25 patients were not included in the study sample. After the utility of the questionnaire was established, the study was conducted on previously diagnosed hypertensive patients visiting the OPD of internal medicine irrespective of age, gender, and residence. All the study subjects were evaluated for sociodemographic factors followed by administration of KAP questionnaire. The KAP questionnaire consists of 25 questions (knowledge 10, attitude 10 and practices 5).

The data thus collected was analyzed and tabulated into proportions and percentages. For statistical analysis, OpenEpi Version 2.3 (www.OpenEpi.com) was used, and Chi-square test was used as test of significance with P < 0.05 considered statistically significant.

Results

Of the total 394 hypertensive patients interviewed in the current study, 239 (61%) were males [Table 1]. The majority of them belonged to Hindu religion. About 71% were literate up to secondary level and more. The major work status of the respondents was service class and business. Two hundred and twenty-eight (90%) out of 394 of the respondents had hypertension of more than 1 year duration. The majority of the patients (213/394; 84%) belonged to urban areas. Among the various risk factors studied in the hypertensive patients, only alcohol intake was found to be statistically significantly associated with the sex (P < 0.01). Only two female patients gave a positive history of alcohol intake thus depicting the traditional patterns in the Indian females in this part of the country [Table 2]. Attitude about the hypertension was also found to be good among the respondents [Table 3]. Attitudes like regular intake of antihypertensive, regular investigations, lifestyle changes, allopathic medicines as being the best, avoiding external salt in diet; all were found to be statistically highly significant (P < 0.01). The knowledge of both the sexes regarding hypertension was good [Table 4]. Among the males, knowledge of smoking being a major cause was slightly on lower side (76.15%) while female patients had lower knowledge (78.06%) about obesity.
being associated with hypertension. A Higher proportion of the male patients knew about normal BP levels than their female counterparts which was found to be statistically highly significant ($P < 0.01$). Recent BP levels were more often remembered by male hypertensive patients, and it was also found to be statistically significant ($P < 0.01$). The results of practices being followed by the respondents were found to be excellent [Table 5]. All the practices which were enquired were religiously being followed by the respondents which was further enforced by very few respondents having uncontrolled hypertension. None of the practices were found to be statistically significant as practices among both male and female patients were found to be of very high quality.

### Discussion

From the results of the current study, it was found that with advancing age, both the sexes tended to be more hypertensive, a phenomenon that has been well-documented in the past. Among the various risk factors studied, stress at work, smoking and alcohol intake along with body mass index (BMI) $\geq 25$ were more prevalent. These results are in total contrast to those reported by Mahajan et al. who reported that more number of hypertensive patients had a family history of hypertension. Tobacco consumption in any form, BMI $\geq 25$ kg/m$^2$ and diabetes mellitus as comorbidity.

Overall knowledge score in the current study was 88.4% (3484/3940). Our results are in accordance with the findings of Oliveria et al. and Babaei et al. who reported KAP rates up to 90%–96% and 89.6% in their respective studies. Our knowledge results are also in agreement with those reported by Bollu et al. and Parmar et al. in their respective studies. In contrast, Mahajan et al. reported poor score regarding knowledge in hypertensive patients which were ascribed to illiteracy and low socioeconomic status. Kusuma et al. reported knowledge in more than a half of the studied population. Bhardwaj et al. in rural communities of Himachal Pradesh also reported a low awareness rate to the tune of 22%. Even Dorobantu et al. reported awareness rate of 44.26% in Romania in contrast to good basic knowledge reported by Aubert et al. in Seychelles. Low knowledge levels were also reported by Lyalombe and Lyalombe from Nigeria.

The attitude and practice score in the subjects was 90.83% (3579/3940) and 95.83% (1888/1970) respectively;
Table 3: Attitudes of study population regarding hypertension

| Attitudes                                                                 | Yes (%) | Total percentage | P   |
|---------------------------------------------------------------------------|---------|------------------|-----|
| Male (n=239)                                                              | Female (n=155) |
| Do you think anti-HTs be taken regularly even if BP returns to normal with medication | 227 (94.98) | 120 (77.42) | 86.2 | 0.0000 |
| Do you think regular investigations are important to rule out complications | 235 (98.33) | 125 (80.65) | 89.4 | 0.0000 |
| Do you think that life-style changes can help in controlling BP            | 237 (99.16) | 105 (67.74) | 83.4 | 0.0000 |
| Do you think that allopathic medication is best in treating HT             | 235 (98.33) | 128 (82.58) | 90.4 | 0.0000 |
| Do you think it is important to maintain record/log book for BP monitoring | 217 (90.79) | 143 (92.26) | 91.5 | 0.1910 |
| Do you think regular checking of BP is important                          | 225 (94.14) | 141 (90.97) | 92.5 | 0.2414 |
| Do you think that HT is a life-long disease                               | 230 (96.23) | 140 (90.32) | 93.2 | 0.0204 |
| Do you think that intake of green leafy vegetables/ fruits is good in daily diet | 238 (99.58) | 136 (87.74) | 93.6 | 0.0000 |
| Do you avoid extra salt in your diet                                      | 206 (86.19) | 109 (70.32) | 78.2 | 0.0001 |
| Do you think that excess alcohol can worsen BP levels                     | 232 (97.07) | 152 (98.06) | 97.5 | 0.7403 |

Table 4: Knowledge about hypertension among study subjects

| Knowledge                                                                 | Yes (%) | Total percentage | P   |
|---------------------------------------------------------------------------|---------|------------------|-----|
| Male (n=239)                                                              | Female (n=155) |
| Do you know that HT is a disease                                          | 231 (96.65) | 149 (96.13) | 96.3 | 0.7806 |
| Do you know what are the symptoms of HT                                   | 215 (89.96) | 136 (87.74) | 88.8 | 0.4939 |
| Do you know the normal levels of BP                                       | 228 (95.40) | 130 (83.87) | 89.6 | 0.0001 |
| Is smoking a major cause of HT                                             | 182 (76.15) | 126 (81.29) | 78.7 | 0.2303 |
| Is obesity associated with HT                                              | 197 (82.43) | 121 (78.06) | 80.2 | 0.2881 |
| Do you know complications of HT                                            | 211 (88.28) | 147 (94.84) | 91.5 | 0.0257 |
| Would lowering high BP improve a person’s health                          | 227 (94.98) | 146 (94.19) | 94.5 | 0.7326 |
| Can patient himself do things to lower his BP                             | 205 (85.77) | 136 (87.74) | 86.7 | 0.5843 |
| Were you informed by doctor that what your personal BP reading should be   | 201 (84.10) | 127 (81.94) | 83.0 | 0.5749 |
| Do you remember your BP level at most recent level                        | 233 (97.49) | 139 (89.68) | 93.5 | 0.0014 |

Table 5: Practices followed by study subjects

| Practices                                                                 | Yes (%) | Total percentage | P   |
|---------------------------------------------------------------------------|---------|------------------|-----|
| Male (n=239)                                                              | Female (n=155) |
| Are you taking regular anti-HTs and going for regular follow-up           | 230 (96.23) | 150 (96.77) | 96.5 | 0.7986 |
| Are you taking diet as advised                                            | 237 (99.16) | 151 (97.42) | 98.2 | 0.2053 |
| Are you doing regular exercise to maintain weight                         | 223 (93.31) | 139 (89.68) | 91.4 | 0.2073 |
| Are you avoiding extra salt in your daily life                            | 229 (95.82) | 145 (93.55) | 94.6 | 0.3292 |
| Should you keep in touch with physician regularly                         | 233 (97.49) | 151 (97.42) | 97.4 | 0.9518 |

though attitude levels were a bit lower in females in comparison to male counterparts. Our results only partly concur with those reported by Aubert et al[29] who reported positive attitude and appropriate practices in a smaller proportion of participants. However, other authors[20,21,22,29] reported very low rates of attitudes and practices. In context to Farquhar’s model of behavioral change,[9] our findings suggest that most of the subjects have acquired sufficient knowledge and a majority of them have shown real motivation in terms of wish and attempt to change as per their high scores. Almost all of them have reached the stages of skills and actions whereby individuals actively engage in a new behavior. Authors have tried to explain the high outcome expectation in hypertension control and adoption of healthy lifestyle practices. First, most of the respondents due to high literacy, urban background, and good socioeconomic status had adequate awareness of chronic nature and deleterious impact of hypertension on health. Moreover, lifestyle patterns prevailing in a society at a certain time are shaped by attitudes, beliefs, behavior, etc., and good literacy and knowledge melts the barriers of ignorance. Finally, the study subjects must had perceived that they had the adequate skills to adopt healthy lifestyle practices. It was amply demonstrated in the current study where the majority of hypertension patients had their BP well-controlled.

**Conclusion**

The high score among the study population could be attributed to the fact that all study participants were diagnosed patients of hypertension seeking care in a tertiary care hospital.

**Limitations**

Lack of validated questionnaire for KAP among hypertensive patients, small sample size and it being a hospital-based cross-sectional study may be some of the limitations of the current study. Another limitation of the KAP surveys is the social
desirability whereby respondents are reluctant to admit socially poorly acceptable KAP to avoid giving a negative impression may be another reason for such a high outcome of the KAP results.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

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