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# Knowledge regarding risk factors of hypertension among non-healthcare workers working in hospital

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**Abstract**
**Introduction:** Hypertension is one of the major contributors to the global disease burden. Reviews have shown that non-healthcare workers are aware about frequently occurring conditions like common cold, fever, diarrhea, dehydration etc. along with diabetes and hypertension; but there is dearth of data regarding knowledge of risk factors of chronic illnesses in this group that motivated the researcher to take up a study with the objective of assessing the knowledge level regarding risk factors of hypertension among non-healthcare workers in selected hospitals of Pune city and its association with selected demographic variables.
**Materials and Methods:** Non-experimental descriptive design was adopted, 200 (125-males and 75-females) non-healthcare workers were selected through non-probability purposive sampling technique using structured questionnaire consisting of 15 items. Conceptual framework used for the study was Pender's health belief model.
**Findings:** Majority 122 (61%) of the participants had average knowledge regarding risk factors of hypertension, and 19 (9.5%) had poor knowledge. Itemized analysis of the data brought out the fact that 47 (23.5) participants were not aware regarding the information that hypertension runs in family; 58 (29%) participants did not have adequate knowledge that females are more prone to develop hypertension during menopause and 31 (15.5%) participants did not have knowledge concerning consumption of oral contraceptive pills that can develop hypertension. There was significant association of knowledge (P value < 0.001) regarding risk factors of hypertension with occupation, work experience and institutional health check-up and demographic variables of age, gender, marital status, educational qualification, habits and type of diet are not significantly associated (P value = > 0.05).
**Conclusion:** Hypertension is very common non-communicable disease yet there is knowledge deficit among non-healthcare workers in certain areas that includes non-modifiable and lifestyle factors.

**Keywords:**Knowledge, risk factors, hypertension, non-healthcare workers

## Introduction
"If you're not paying for it through the health plan, you pay for it in the emergency room."
David Lehman

Hypertension is a major contributor to the global disease burden. It poses an important public health challenge to both economically developing and developed countries, including Asia. The prevalence and rate of diagnosis of hypertension in children and adolescents appears to be increasing. Reduction of blood pressure reduces this risk in people with and without hypertension and is a desired goal in children and adults.
As per MoHFW, ICMR project in 2018 Raised blood pressure attributes to the leading risk factor for morbidity and mortality in India. Hypertension is attributable to 10.8% of all deaths in India. Hypertension has been long recognized as one of the major risk factors for cardiovascular disease and premature deaths worldwide, and is one of the most common lifestyle "Silent Killer" diseases today, with every third person having suffered from it. In India, it exerts substantial public health burden on cardiovascular health status and the health care system. It is estimated that 16% of Ischemic Heart Disease, 21% of Peripheral Vascular Disease, 24% of Acute Myocardial Infarctions and 29% of strokes are attributed to hypertension.

## Need for thestudy
Lack of awareness regarding hypertension among public often leads to fatal consequences due to hypertension and related morbidities. Lack of awareness also results in poor health seeking behavior and reluctance in adoption of healthy life style.

A meta-analysis reports that the awareness levels for HTN were consistently above 35% in almost all studies from urban areas of India. Potential modifiable and non-modifiable risk factors exist for hypertension. Common modifiable factors includes obesity, high salt consumption, excess dietary fat, lack of dietary fibers, alcohol intake, high body mass index, physical activity and stress.

Sebastian NM *et al*. (2016)[9] conducted the study on Hypertension in Kerala: A study of prevalence, control, and knowledge among adults. The aim of the study was to reveal the prevalence, proportion of hypertension cases treated and controlled, and the knowledge and practice among hypertensives. The result shows that the prevalence of hypertension was 32.3%. Among them 55% were already diagnosed and 45% newly diagnosed during the study. The prevalence increases with age. Prevalence of pre-hypertension was 43.7%. Among those treated, only 33.9% had their BPs controlled. The percentage of those who were aware of dietary restriction was 79.4% and 76% were practicing. The percentage of subjects aware of a need for regular BP check was 83.6% but 69% were doing so. Only 42.6% were aware of a need for other lifestyle changes and 34.4% were practicing. Age, family history, and sedentary lifestyle were identified as correlates of hypertension. The study concludes that the prevalence of hypertension and prehypertension is high and the control of hypertension among those treated is low.

As per above reviews and statistics the researcher felt a great need to identify knowledge of the predisposing risk factors which is vital in the modification of lifestyle behaviour conducive to optimal cardiovascular health. While working in the hospital, researcher experienced that those non-healthcare workers have some awareness regarding common diseases like common cold, fever, diarrhea, dehydration etc. along with diabetes and hypertension; but there is dearth of data regarding knowledge of risk factors of chronic illnesses in this group that motivated the researcher to take up a study with the objective of assessing the knowledge level regarding risk factors of hypertension among non-healthcare workers.

**Objectives of This Study**

1. To assess the knowledge regarding risk factors of hypertension among non-health care workers.
2. To find the association between level of knowledge with selected demographic variables of non-health careworkers in selected hospitals of Pune city.

**Material And Method**

Non-experimental descriptive design was adopted, 200 (125-males and 75-females) non-healthcare workers were selected through non-probability purposive sampling technique using structured questionnaire consisting of 15 items. Data analysis was done by using descriptive statistics, Chi-Square test was applied.

**Description of Tool**

**The tool includes two sections**

Section A: Demographic Data

Section B: Structured questionnaire on risk factors of hypertension

**Result and Discussion**

**Section A:** Analysis related to the demographic variables of non-healthcare workers in frequency and percentage distribution.

**Table 1:** Demographic variables of non-healthcare workers(n=200)

| Demographic Data | | | |
|---|---|---|---|
| **Parameters** | | **Frequency** | **Percentage(n=200)** |
| Age | 21-30 | 75 | 37.5 |
| | 31- 40 | 93 | 46.5 |
| | 41-50 | 30 | 15 |
| | 51-60 | 2 | 1 |
| Gender | Male | 125 | 62.5 |
| | Female | 75 | 37.5 |
| Marital Status | Married | 162 | 81 |
| | Unmarried | 35 | 17.5 |
| | Divorced | 1 | 0.5 |
| | Widow/Widower | 2 | 1 |
| Educational Qualification | Primary | 18 | 9 |
| | Secondary | 92 | 46 |
| | Higher secondary | 33 | 16.5 |
| | Graduate | 56 | 28 |
| | Post Graduate | 1 | 0.5 |
| Habits | Smoking | 0 | 0 |
| | Tobacco | 10 | 5 |
| | Alcohol | 13 | 6.5 |
| | Others | 0 | 0 |
| | No any | 177 | 88.5 |
| Type of Diet | Vegetarian | 55 | 27.5 |
| | Non vegetarian | 142 | 71 |
| | Eggiterian | 3 | 1.5 |

Table no. 1 shows that out of 200 (100%), 168 (84%) belonged to the age group 21-40 years, out of which maximum participants 93 (46.5%) fell in the age group 31-40 years; 30 (15%) belonged to the age group of 41- 50 years, and merely 2 (1%) belonged to the age group of 51-60 years. Further, the data shows that, majority 125 (62.5%) of non-healthcare workers were males compared to females 75 (37.5%). Additionally, the data reveals that, 162 (81%) of the

participants were married whereas 35 (17.5%) non-healthcare workers were unmarried, out of which 2 (1%) were divorced and only 1 (0.5%) was widow. Regarding the educational status of the participants 92 (46%) completed their secondary education, 56 (28%) were graduates, higher secondary 33 (16.5%) and only 18 (9%) availed primary education. It was worth noting that there was 1 (0.5%) participant who held the degree post graduation. It was observed that, 13 (6.5%) were alcoholic, and 10 (5%) had habit of chewing tobacco but good to note that, 177(88.5%) participants did not have any habits. Regarding the diet 142 (71%) were non-vegetarians, 55 (27.5%) were vegetarians while 3 (1.5%) were eggiterians amongst the participants.

**Table 2:** Frequency Distribution of Participants based on Personal information of the non- healthcare workers. (n=200)

| Demographic Variable | | Frequency | Percentage |
|---|---|---|---|
| Occupation | BMT (Biomedical Technician) | 7 | 3.5% |
| | Ambulance Drivers | 4 | 2% |
| | Pantry workers | 8 | 4% |
| | Receptionists | 2 | 1% |
| | HR clerks and executives | 25 | 12.5% |
| | Security Guards | 96 | 48% |
| | Social workers | 9 | 4.5% |
| | Peons/Sweepers (class IV staff) | 49 | 24.5% |
| Years of Work Experience in Hospital | < 3.5 | 134 | 67% |
| | 4-6.5 | 45 | 22.5% |
| | 7 & above | 21 | 10.5% |
| Institutional Health check-up | Every 6 months | 25 | 12.5% |
| | Every year | 46 | 23% |
| | Occasionally | 100 | 50% |
| | No | 29 | 14.5% |

Table no. 2 illustrates that a large number 96 (48%) of participants were working as security guards, followed by 49 (24.5%) as peons/sweepers, 25 (12.5%) as clerks and executives in HR Department, 9 (4.5%) were working as social workers and 8 (4%) as pantry workers; Remaining 7 (3.5%) as biomedical technicians who are working for the maintenance of biomedical equipments, 4 (2%) as ambulance drivers and only 2 (1%) are working as receptionists. Most of the non-healthcare workers 134 (67%) had less than 3.5 years experience whereas 45 (22.5%) of participants had 4 to 6.5 years experience, and 21(10.5%) had more than 7 years experience. The data depicts that 100 (50%) participants undergo institutional health check-up occasionally whereas almost 46 (23%) get their health check up done every year. Besides, 25 (12.5%) get their health checked every 6 month. Also there were 29 (14.5%) participants who never had undergone any health check up.

**Section B:** Analysis related to knowledge regarding risk factors of hypertension among non-healthcare workers.

**Table 3:** Mean Score and Standard Deviation of participants based on knowledge score regarding risk factors of hypertension among non-healthcare workers. (n=200)

| Knowledge | Frequency | Percentage | Mean Score | S.D. |
|---|---|---|---|---|
| Good | 59 | 29.5% | 8.91 | 2.502 |
| Average | 122 | 61% | | |
| Poor | 19 | 9.5% | | |

Table No. 3 Shows the analysis of the structured questionnaire tool on Knowledge regarding risk factors of hypertension among non-healthcare workers, which reflects that majority 61% non-health workers are having Average knowledge, 29.5 are having Good knowledge and 9.5% non-health workers were having poor knowledge with mean score as 8.91 and S.D. as 2.502.

**Section C**

Item analysis of the responses of the participants on structured questionnaire for assessment of knowledge regarding risk factors of hypertension.

**Table 4:** Frequency distribution of participants regarding knowledge on non-modifiable factors causing hypertension (n= 200)

| Q.No. | Items | Right Answer | |
|---|---|---|---|
| | | Frequency | Percentage |
| 1. | Population of which age group is more likely to get? (Old age group) | 106 | 53% |
| 2. | Population of which of the followinggenders are at risk of developing hypertension? (Both male and female) | 84 | 42% |
| 3. | At which stage of life females are more prone to develop hypertension? (Menopause) | 58 | 29% |
| 4. | Which of the following statement is TRUE incase of hypertension? (Hypertension runs in family) | 47 | 23.5% |

Table no. 4 shows questions related to non-modifiable factors of causing hypertension those were included in the Questionnaire were four in number as per sequence of Qs. No. 1, 6, 11, 12.

Item Analysis done for the factors revealed that, 106 (53%) participants knew that the population of old age group is more likely to get hypertension. Whereas 84 (42%) participants were aware that both male and female are at risk of developing hypertension. But only 58 (29%) participants knew more females develop hypertension after menopause. A very few number of participants 47 (23.5%) were aware that hypertension runs in family.

**Table 5:** Frequency distribution of participants regarding knowledge on lifestyle related torisk factors of hypertension (n=200)

| Q.No. | Items | Right Answer | |
|---|---|---|---|
| | | Frequency | Percentage |
| 1. | Which of the following habits are likely to give riseto blood pressure? (Alcoholism, Smoking, Exercise) | 124 | 62% |
| 2. | Excessive consumption of which of thefollowing drinks are likely to develop hypertension? (Coffee and Tea) | 119 | 59.5% |
| 3. | Which among the following type of diet contribute to high blood pressure? (Salt rich diet) | 155 | 77.5% |
| 4. | Regular consumption of which of the followingfood items tend to cause hypertension? (Papad and Pickle) | 133 | 66.5% |
| 5. | Which of the following physical factors could cause hypertension? (Very fat individual) | 195 | 97.5% |
| 6. | Which of the following physical activities can put an individual at risk for hypertension? (Joggingfor 45 minutes once a month) | 150 | 75% |
| 7. | Which of the following activity have less chancesof developing hypertension? (Meditation, Physical exercise, Regular health check-up) | 109 | 54.5% |
| 8. | Which of the following emotional factors is responsible for developing hypertension? (Anxiety and Stress) | 171 | 85.5% |
| 9. | An increase of fat deposition in the blood vessel is due to: (Lack of exercise & high fat diet) | 151 | 75.5% |
| 10. | Consumption of which of the following medications can develop hypertension? (Oral Contraceptive Pills) | 31 | 15.5% |

Table no. 5 delineates questions related to lifestyle factors tending to cause hypertension. Those included in the questionnaire were ten in number as per sequence of Qs. No. 2, 3, 4, 5, 7, 8, 9, 10, 13, 15.

Majority of the participants knew most of the lifestyle factors that give rise to hypertension. Maximum participants 195 (97.5%) knew that very fat individual is more likely to get hypertension. 155 (77.5%) participants were aware that salt rich diet contributes to high blood pressure. It is good to know that 124 (62%) participants knew that alcoholism, tobacco chewing and smoking are the habits which are likely to give rise to blood pressure. Although 109 (54%) participants were aware that meditation, yoga, and regular health check-up are the activities due to which there are less chances of developing hypertension but due to the hectic schedule of people now a days they could not follow. Despite 171(85.5%) participants knowing that emotional factors are responsible for developing hypertension, it is unavoidable for many people.

It is important to note that only 31(15.5%) participants were aware that excessive consumption of oral contraceptive pills can develop hypertension in females and it is also significant to mention that 149 (74.5%) participants knew that co-morbidities such as diabetes mellitus and renal disease can lead to hypertension.

**Section D:** Association of demographic variables with knowledge score of non-healthcare workers regarding risk factors of hypertension.

**Table 6:**Association between level of knowledge regarding risk factors of hypertension with selected demographic variables of non-healthcare workers (n=200).

| Sr. No | Demographic variable | Knowledge Score | | | Chi- square (cal.) | P-value | Inference |
|---|---|---|---|---|---|---|---|
| | | Poor | Average | Good | | | |
| **1.** | **Age** | | | | | | |
| A | 21-30 | 11 | 51 | 13 | 12.16321 | 0.058425 | No association |
| B | 31-40 | 7 | 53 | 33 | | | |
| C | 41-50 | 1 | 16 | 13 | | | |
| D | 51-60 | 0 | 2 | 0 | | | |
| **2.** | **Gender** | | | | | | |
| A | Male | 13 | 79 | 33 | 1.634567 | 0.802566 | No association |
| B | Female | 6 | 43 | 26 | | | |
| C | Transgender | 0 | 0 | 0 | | | |
| **3.** | **Occupation** | | | | | | |
| A | BMT | 0 | 3 | 4 | 81.35379 | 0.00001 | Association |
| B | Driver | 0 | 2 | 2 | | | |
| C | Pantry | 0 | 5 | 3 | | | |
| D | Receptionist | 0 | 0 | 2 | | | |
| E | HR | 0 | 0 | 3 | | | |
| F | Guard | 13 | 73 | 10 | | | |
| G | Clerk | 0 | 3 | 19 | | | |
| H | Social worker | 0 | 0 | 9 | | | |
| I | MPW | 6 | 36 | 7 | | | |
| **4.** | **Marital Status** | | | | | | |
| A | Married | 15 | 93 | 54 | 8.849986 | 0.182192 | No association |
| B | Unmarried | 4 | 27 | 4 | | | |
| C | Divorced | 0 | 0 | 1 | | | |
| D | Widow/Widower | 0 | 2 | 0 | | | |
| **5.** | **Educational Qualification** | | | | | | |
| A | Primary | 3 | 13 | 2 | 2.839521 | 0.944021 | No association |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| B | Secondary | 11 | 67 | 14 | | | |
| C | Higher secondary | 2 | 26 | 5 | | | |
| D | Graduate | 3 | 15 | 38 | | | |
| E | Post Graduate | 0 | 1 | 0 | | | |
| **6.** | **Years of work Experience In Hospital** | | | | | | |
| A | 0-3 | 16 | 87 | 31 | 9.57 | 0.048 | Association |
| B | 4-6 | 2 | 25 | 18 | | | |
| C | 7 & above | 1 | 10 | 10 | | | |
| **7.** | **Habits** | | | | | | |
| A | Smoking | 0 | 0 | 0 | 2.839521 | 0.944021 | No association |
| B | Tobacco | 2 | 6 | 2 | | | |
| C | Alcohol | 0 | 7 | 6 | | | |
| D | Others Specify | 0 | 0 | 0 | | | |
| E | No any | 17 | 109 | 51 | | | |
| **8.** | **Institutional Health Checkup:** | | | | | | |
| A | No | 2 | 23 | 4 | 39.56551 | 0.0001 | Association |
| B | Every 6 months | 10 | 13 | 2 | | | |
| C | Every year | 2 | 25 | 19 | | | |
| D | Occasionally | 5 | 61 | 34 | | | |
| **9.** | **Type of diet** | | | | | | |
| A | Vegetarian | 8 | 35 | 12 | 4.546901 | 0.337022 | No association |
| B | Non vegetarian | 11 | 84 | 47 | | | |
| C | Eggiterian | 0 | 3 | 0 | | | |

Data presented in Table no. 6 shows that there is significant association of knowledge of non- healthcare workers regarding risk factors of hypertension with the occupation, work experience and institutional health checkup which is evident from the obtained Chi-square value and P-value respectively less than 0.001 level of significance. Thus it can be inferred that above mentioned variables are influencing the knowledge of non- healthcare workers regarding risk factors of hypertension. Demographic variables such as age, gender, marital status, educational qualification, habits and type of diet are not significantly associated as p-value is more than 0.05 level of significance.

## Discussion

The discussion of the present study was based on the results achieved after the analysis of collected data. It is described in the view of the objective of the current study.

The findings of the present study are supported by cross sectional study conducted by, Rizwana.B. Shaikh *et al*.,(2011)[2, 22]. Stress, high cholesterol, obesity, and smoking were identified as risk factors by 75.5, 73.6, 77.6, and 71.8%, respectively; 69.1% considered high salt intake as risk factors. Coffee consumption was considered as a risk factor by 35.5%, physical inactivity 47%, and oral contraceptives 13.6%. Half the group did not consider a family history as a risk factor, 60% did not consider older age as a risk factor, and 88% did not think male gender was a risk factor. Knowledge of modifiable risk factors was better than that of non-modifiable risk factors. Respondent's knowledge about some gaps in knowledge regarding both modifiable and non-modifiable risk factors of hypertension among students.

## Recommendations

1. It is suggested that the study may be replicated using a larger population of community.
2. A study can be done to assess the prevalence of hypertension on non-healthcare workers.
3. A study can be done to assess the prevalence of hospital acquired infections among non- healthcare workers.

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