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Orginal Article

FREQUENCY OF UNDIAGNOSED HYPERTENSION IN HEALTHCARE WORKERS OF KHYBER TEACHING HOSPITAL PESHAWAR

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ABSTRACT

Objectives: *To measure the frequency and determinents of undiagnosed hypertension in Healthcare Workers of Khyber teaching hospital peshawar and to determine the association of their Hypertension with demographics.*

Materials and Methods: *It was a cross-sectional analytical study done at Khyber Teaching Hospital, Peshawar from January 2023 to May 2023. A sample of 312 healthcare workers was selected by using non-probability convenient sampling technique. A questionnaire having both open-ended & closed-ended questions was used. After acquiring their informed consent, face to face interview along with measuring blood pressure was done. For analysis of the data, statistical package for social sciences (SPSS) version 20 was used. Data was represented using figures and tables.Chi square test was used for analysis.*

Results: *The study included 312 participants with a mean age of 33.8 ± 9.4 years.Out of 312 participants, 62.8% were doctors, 26.9 % were paramedics, and 10.3 % were supporting staff. Among the participants, 40 (12.8%) of the participants were hypertensive, and 272 (87.2%) were non-hypertensive.3.5 % of the participants believed hypertension to be due to stress & anxiety; 3.2 % believed it to be obesity; 2.6 % believed it to be lack of exercise; 1 % believed it to be high salt intake, 0.3 % believed it to be smoking, and 0.3 % believed high cholesterol levels while 89 % believed all of these can be the causes of hypertension. It was found that age, family history of hypertension and Co morbidities were statistically significant, while the other factors turned out to be non significant.*

Conclusion: *A significant number of participants were found hypertensive. Associated factors of hypertension were stress, anxiety, obesity, lack of exercise, high salt intake, smoking, and high cholesterol levels.*

Key words: *Hypertension, Healthcare workers, Risk factor*

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INTRODUCTION

Hypertension is a major risk factor for cardiovascular diseases such as ischemic heart disease (IHD), atherosclerosis, cardiovascular events such as myocardial infarction (MI), and stroke[1]. Hypertension is a highly complex and global health problem. It is becoming increasingly common in adults, and there are a number of associated health problems caused by high blood pressure.Behavioral changes and self-care may prove more effective in controlling hypertension[2].

Hypertension is the persistent increase in blood pressure (BP) above the optimal range[3]. Acceptance

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thresholds in Systemic Hypertension are systolic blood pressure (SBP) ≥ 140 mmHg and/or diastolic Hypertension (DBP) ≥90 mmHg[4]. Hypertension may be essential hypertension or secondary hypertension. The secondary hypertension is accompanied by several medical conditions. Some of the risk factors of hypertension are having smoking, excessive alcohol consumption, obesity, excessive sodium intake, physical inactivity, and excessive stress[4]. This can be prevented with proper management. Hypertension is a notorious for many deadly diseases. It is the leading cause of mortality worldwide, for minimum of 45% of deaths due to myocardial infarction and 51% of deaths due to Cardiac events[5].

Approximately 1 billion people around the world currently live with high blood pressure, and this number will reach 1.56 billion by 2025, and may reach to 29.2% of the world's population[6]. Increased risk of hypertension impacts healthcare worker productivity, further impacting already low patient-to-physician ratios.

A study conducted in a tertiary care hospital in India showed that the depression among hypertensive patients in India was 39.8%[7]. Healthcare workers play a vital role in the health and well-being of our communities, but the health of our doctors and nurses is also paramount. This is because in order to perform your job effectively, you must first be healthy. As health has role in proper decision making of a person. The decision making by a healthcare provider is of utmost importance. Another study conducted in India showed that the prevalence of hypertension among physicians was 29.4% and 13.7%, respectively[8]. Possible causes of high blood pressure in doctors and nurses include the amount of work they do at the hospital, short work intervals, stress, lack of exercise, and restlessness. Night shifts are associated with an increased risk of hypertension among hospital employees. Hypertension is becoming increasingly common among healthcare professionals[9]. A study done at Lahore in 2022 on risk factors among healthcare workers in Covid19 showed that health care workers specially the Nurses had high level of stress and need for psychological wellbeing[10]. The aim of this study is to determine the frequency of hypertension and its determinants among healthcare workers in Khyber Teaching Hospital Peshawar, who are not known hypertensives, but are prone to stressful environment and as upto our knowledge no literature was found regarding the issue in the area. This will not only add the knowledge about the magnitude of the problem but also will act as an evidence for policy makers for healthcare workers.

MATERIALS AND METHODS

It was a cross-sectional analytical study. The study was done at Khyber Teaching Hospital Peshawar during January 2023 to May 2023. Health care workers like Doctors, Nurses, Pharmacist, Laboritory staff, supporting staff and wards and Operation theatre and security guards were included and those who were known hypertensive were excluded from the study.According to WHO sample size calculator, taking prevalence of patient satisfaction 29.4%[9], sample size of 312 was selected.Non-Probability convenient sampling was used The study was conducted after approval was obtained from the ethical board Khyber Medical College Peshawar. Before including them in the study, informed consent from health workers was taken. Detailed information was provided to participants about the nature of the study and the types of questions. Blood pressure (BP) was measured using a standard mercury sphygmomanometer and stethoscope of same quality across all the participiants in resting condition. Three readings were taken 3 hours apart at least and those having high blood pressure on all readings were taken as hypertensives.A questionnaire having both open-ended & closed-ended questions was used.

Data was analyzed using S.P.S.S version 20 for windows. All the results are presented in the form of tables and graphs. Quantitative variables like age was calculated as Mean ± S.D.

Qualitative variables like hypertension, determinants and gender are presented in the form of frequencies and percentages. The effect modifiers like age, monthly income, and workload were stratified to see the effect of these on the outcome variable. Association was determined through the Chi-square test. P-value ≤ 0.05 was taken as significant.

RESULT

A total of 312 participants were included in the study, of which, 217 (69.6 %) of the study participiants were males and 95 (30.4 %) were females. The mean age of the respondents was 33.8 ± 9.4 years. Out of 312 participants, 196 (62.8%) were doctors,

84 (26.9 %) were paramedics, and 32 (10.3 %) were supporting staff.

According to the collected data, 3.5 % of the participants believed it to be stress & anxiety; 3.2 % believed it to be obesity; 2.6 % believed it to be lack of exercise; 1 % believed it to be high salt intake, 0.3 % believed it to be smoking; and 0.3 % believed high cholesterol levels while 89 % believed all of these can be the causes of hypertension. This is shown in Fig 1.

The risk factors association was checked via chi-square test. It was found that age ,family history of hypertension , Co-morbidities and the family history of the participants were found statistically significant, as the p-value in these cases was less than 0.05. (Table .2) while the other factors such as gender, sleep duration, smoking history and hospital workload were found statistically not significant.

DISCUSSION

The current cross-sectional analytical study is an attempt to assess the frequency of hypertension and associated risk factors among the healthcare workers of Khyber Teaching Hospital Peshawar. The participants didn't know about their hypertensive status. A total of 312 participants including doctors,

Table 1: Hypertension status of the participants

Options	n	%
No	272	87.2
Yes	40	12.8
Total	312	100.0

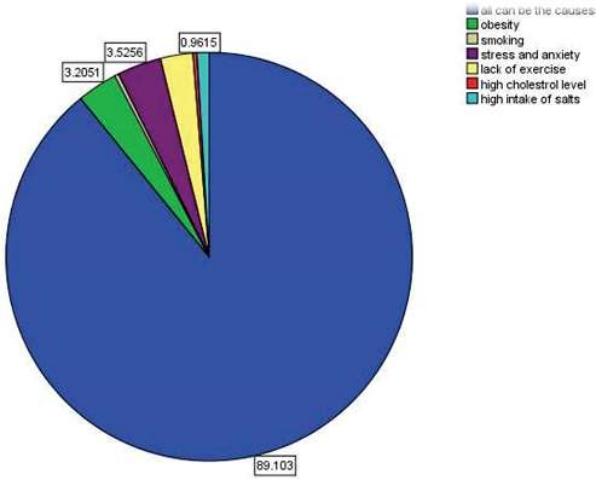

Fig 1: Causes of Hypertension According to the Participants

paramedics, and supporting staff from different wards of the tertiary care unit were the study participiants. Regarding the 'current blood pressure' of the participants, it was measured on a sphygmomanometer and stethoscope and recorded. It was found that 12.8% of the participants were hypertensive. These findings are in close agreement with the outcomes of other studies done[11,12] and other Asian countries including Nepal, Iran, China, India, Saudi Arabia, and Yemen[13-18] and also, with the results of studies done in Europe[18] and Africa[20,21]. Thus, our study provides additional evidence that supports the established understanding of hypertension prevalence among healthcare workers. It emphasizes how their occupation affects their health.

Workers may be more likely to develop hypertension as a result of the strenuous and frequently

Table 2: Risk Factors Associated with Hypertension

Risk Factor	n	%	P-value
Gender			
Male	59	27%	0.46
Female	22	23%	
Age			
Less than 35 years	23	11%	0.00
More than 35 Years	58	56.3%	
Income			
< 1 lac per month	56	21.45%	0.00
>1 lac per month	25	49%	
Family history			
+ve	53	34.4%	0.00
-ve	27	17.2%	
Job level			
Satisfied	31	31.3%	0.23
Not satisfied	50	21.64%	
Smoking s tatus			
Yes	11	22.9%	.60
No	70	36%	
Comorbidities			
Yes	55	30.9%	0.02
No	26	19%	
Sleep duration			
< 6 hours	25	28.4%	0.75
> 6 hours	56	25%	
Hospital workload			
Low workload	12	22.64%	0.83
High workload	69	26.6%	

stressful nature of healthcare work. The questionnaire had two questions to help find out the effects of occupational stress. One in regards to job satisfaction level and the second about hospital workload to be a potential reason for hypertension yet the outcomes ended up being not significant which is not the same as the result of a study done in Iran[14], where work dissatisfaction had a significant affiliation. Variations in sample characteristics, methods, temporal factors, confounding variables, sample size, and contextual factors are to blame for the various outcomes.

By asking about income status in our survey, we wanted to see if healthcare workers' income might contribute to their risk of high blood pressure. This case's significant outcome is in line with a study conducted in Africa[22]. Our study's significant correlation between income level and hypertension among healthcare workers emphasizes the significance of financial management as an essential occupational health issue.

The length of one's sleep is increasingly being recognized as a factor that can influence blood pressure. To investigate the sleep patterns of healthcare workers, we included sleep duration questions. In our review, the sleep duration ended up being not significant. This might be because the estimation of sleep duration in our review, like self-revealing or restricted information on rest quality, probably won't have caught the full intricacy of sleep duration and its effect on well-being. We also found a study that shows an association of hypertension with sleep duration[14].

Some of the limitations were healthcare workers in a particular hospital and not the whole district or province hospitals, which catches information at a solitary moment, Information gathered through self-revealing, like lifestyle choices and sleep duration, is likely to review inclination, unmeasured or unaccounted-for confounders, like dietary propensities or hereditary qualities and small sample size. Hypertension is a condition that can be fostered over years. The study's timeframe might not have caught long-haul impacts or unpretentious changes in risk factors over the long haul. Non probability convenience sampling is also one of the limitation of this study and may account for uncoverage bias but efforts were to cover each section of the hospital to minimize the bias. Since at tertiary care hospital health care providers on always on their toes so non probability technique was used.

Our review lays the foundation for future exploration attempts, for example, longitudinal examinations, deeper investigations into specific risk factors, and different techniques and policies to relieve hypertension risk among healthcare workers.

CONCLUSION

A significant number of participants were found hypertensive. Associated factors of hypertension were stress, anxiety, obesity, lack of exercise, high salt intake, smoking, and high cholesterol levels. It is evident that age, co-morbidities and the family history have role in the prevalence of hypertension among healthcare workers. The presence of co-morbidities in family history adds an additional layer of risk that should not be overlooked.

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CONFLICT OF INTEREST
Authors declare no conflict of interest.
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AUTHORS' CONTRIBUTION

The following authors have made substantial contributions to the manuscript as under:

Conception or Design:	NA, JH, FA, RI, MK, KA
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All the authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.