

Influence of Socio-demographic Variables on Prevalence of Hypertension in Lahore Division, Pakistan

Anam Javed^{a*}, Sufyan Saleem^b, Muniza Saeed^c, Hamid Raza^d, Bilal Shahid^e,
Kinza Islam^f

^aAssistant Professor, School of Zoology, Minhaj University, Lahore, Pakistan

^{b,c,d,f}BS Researcher, School of Zoology, Minhaj University, Lahore, Pakistan

^eLecturer, School of Zoology, Minhaj University, Lahore, Pakistan

^aEmail: dranam.zoology@mul.edu.pk, ^bEmail: sufyanmsaleem1@gmail.com, ^cEmail:

munizasaeed004@gmail.com, ^dEmail: hafizhamidraza377@gmail.com, ^eEmail: bilal.zoology@mul.edu.pk,

^fEmail: kinzaislam01@gmail.com

Abstract

Hypertension is a growing public health issue at global level and it is considered as a potent factor for cardiovascular ailments. But various socio-demographic factors are root causes to provoke this physiological disorder. In current study, through cross sectional survey, performa based data of 100 persons was collected from cities Lahore division, Pakistan. The results showed that males are more suffering than females and fall in age range of 20-40yrs. Most frequently reported initial symptoms are fatigue, irregular heartbeat and difficulty in breathing. Whereas district wise comparison indicated higher prevalence level in Lahore and Kasur than Shiekhupura and Nankana Sahib. Similarly, ANOVA results highlighted that economic status matters the most, parallel to the extent of awareness among masses, that's why; mediocre is suffering more than upper or lower class. Thus cost effective treatments based findings should be our future goal to control this growing disease.

Keywords: Hypertension; cardiovascular; socio-demographic; Lahore; cross section survey.

1. Introduction

Hypertension is not only a leading public health issue but also considered as stimulator of cardiovascular complications [1]. A recent report of World Health Organization indicates that 40% adults are globally suffering hypertension [3]. Only raised systolic blood pressure was found responsible to cause worldwide 10.5 million mortalities and this trend is still continued [4]. Moreover, the same factor was also reported for 54.5% and 58.3% of deaths from ischemic heart diseases and from hemorrhagic stroke, respectively [5]. Around 75% population which belongs to third world countries is sufferer of hypertension [6, 10-12].

* Corresponding author.

So far reported data indicates that variation in systolic and diastolic blood pressures from ideal ranges of 110–115 mmHg and 70–75 mmHg, respectively [7] may result in double risk of cardiovascular complications [8]. That’s why; regular monitoring of blood pressure is important for in time diagnosis and treatment [9]. Similarly, reported data of Pakistan is so far much less of hypertension prevalence surveys which indicate rapidly rising prevalence over time and need of effective prevention and management programs implementation is required [14]. That is why; we conducted a hypertension prevalence survey in Lahore to evaluate influence of socio-demographic factors and level of awareness to avoid from this risk by maintaining a balanced BP.

2. Methodology

This study was observational and cross-sectional descriptive survey [15, 17] of Lahore division, 100 persons of four districts (Lahore, Kasur, Sheikhopura and Nankana Sahab) 25 persons from each district were collected. A questionnaire on hypertension prevalence was used. The questionnaire included age range, gender, economic state and symptoms of hypertension [1] and for statistical analysis ANOVA was applied [2]. Following performa was filled by people in these cities (Table 1).

Table 1: Survey Performa for estimation of hypertension prevalence in Lahore division, Pakistan.

Name				
Age	≥20 yrs	21-30 yrs	31-40 yrs	41yrs ≤
Gender			Female	Male
District	Lahore	Kasur	Shiekhupura	Nankana Sahab
Economic status	Upper		Middle	Lower
Already on medication for other health issues			Yes	No
Symptoms			Yes	No
Severe frequent headache				
Nosebleed				
Fatigue				
Confused state of mind				
Blurred vision				
Chest pain				
Difficult breathing				
Irregular heartbeat				
Dizziness				
Nervousness				
Trouble sleeping				
Blood spots in eyes				

3. Results and Discussion

The random cluster sampling was carried out in four districts (Lahore city, Kasur, Nankana Sahab and Shiekhupora) of Lahore division and total 100 persons data was collected. The mean \pm SD (impact of economic status) of the sample (Table 2) was analyzed via ANOVA [13] and obtained significant results which highlighted, though population has considerable knowledge about hypertension but financial constraint develop a negative attitude and poor practices among masses [15].

Table 2: Impact of economic state on etiology of hypertension in Lahore Division, Pakistan.

Economic class	Mean \pm SD
Upper	2 \pm 1.633
Middle	21.75 \pm 0.9574 *
Lower	1.25 \pm 1.893

*Value was found significant on 0.1% level.

Whereas data of whole division’s population showed that 46 males out of 59 and 34 females out of 41 are affected by this disease (Figure 1) with frequently reported symptoms severe recurring headache, fatigue and irregular heartbeat (Figure 2) but due to unawareness and financial crisis people tend to delay the in time diagnosis and treatment. Moreover, people of 20-40yrs age range were mainly found as hypertension patients. Another major reason might be the social gender differences because Pakistan still has male dominant society and usually financial burdens are on men and they are more prone to risk of hypertension. They also receive poor quality readymade diet as spend more duration from homes [15, 17, 18]. When data of medicine intake was examined (Figure 3), still 71.10% don’t take medicine and same pattern was noticed in district wise comparison (Figure 4) as Shiekhupura and Nankana Sahib are comparatively more backward than Lahore and Kasur which are mainly industrial and well established cities of Pakistan and possible reasons of this overall prevalence pattern are again either lack of awareness or financial restrictions and even may result into cardiovascular complications [17, 18].

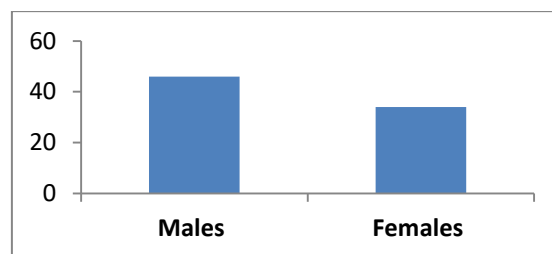


Figure 1: Gender wise prevalence of hypertension in Lahore Division, Pakistan.

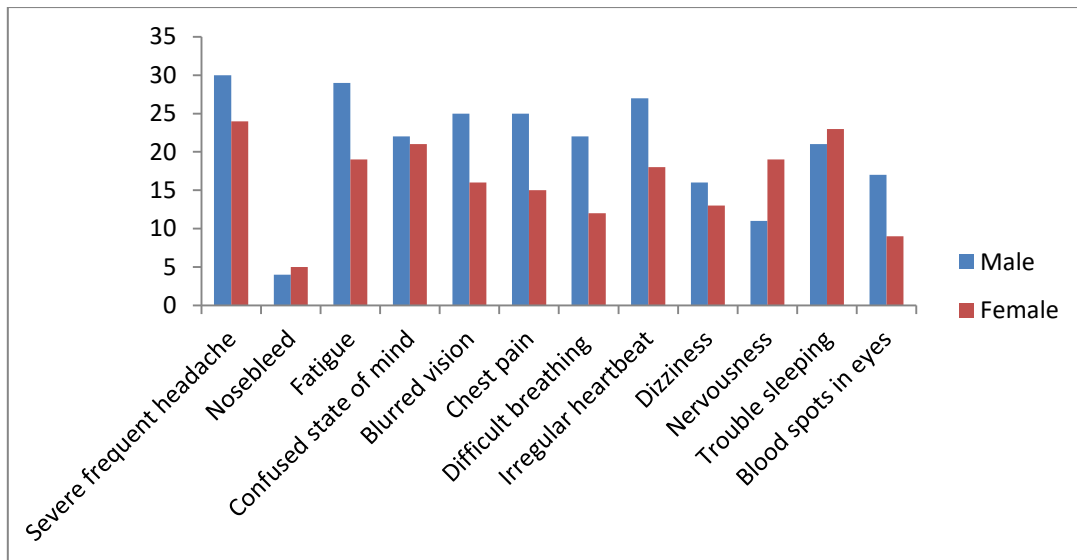


Figure 2: Commonly reported symptoms of hypertension in Lahore Division, Pakistan.

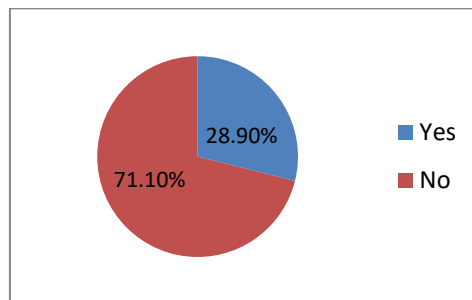


Figure 3: Medicine intake ratio of hypertension patients in Lahore division, Pakistan.

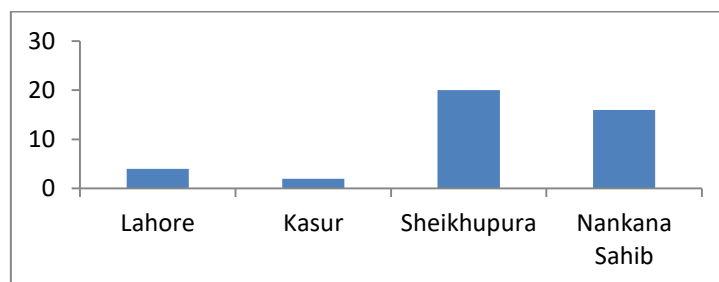


Figure 4: District wise comparison of hypertension prevalence in Lahore division, Pakistan.

4. Conclusion

Thus current survey indicates that hypertension diagnosis and cure related strategies should be in focus of future researchers and public services providing government and private institutes [1]. Because high blood pressure based general public awareness generates potent effect for its control and management to avoid possible health complication of this growing global issue [15].

Acknowledgements

This collaborative survey was only performed by Dr. Anam Javed, Sufyan Saleem, Muniza Saeed , Hamid Raza, Bilal Shahid and Kinza Islam without financial assistance from any organization.

References

- [1]. J. Wang, W. Sun, G. A. Wells, Z. Li, T. Li, J. Wu, Y. Zhang, Y. Liu, L. Li, Y. Yu and Y. Liu. "Differences in prevalence of hypertension and associated risk factors in urban and rural residents of the northeastern region of the People's Republic of China." A cross-sectional study. PLOS One, vol. 13(4), pp. 0195340. 2018.
- [2]. J. Wei, X. Yin, Q. Liu, L. Tan and C. Jia. "Association between hypertension and cognitive function: A cross-sectional study in people over 45 years old in China." The journal of clinical hypertension, vol. 20 (11), pp. 1575-1583. 2018.
- [3]. S. Mehata and R. K. Mehta. "A6178 Prevalence, awareness, treatment and control of hypertension in Nepal: data from nationally representative population-based cross-sectional study." Journal of hypertension, vol. 36, pp. 304. 2018.
- [4]. K. Alam, G. J. Hankey and GBD 2016 risk factors collaborators. "Global, regional and national comparative risk assessment of 84 behavioural, environmental and occupational, and metabolic risks or clusters of risks, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016." Lancet, vol. 390 (10100), pp. 1345-1422. 2017.
- [5]. M. H. Forouzanfar, P. Liu, G. A. Roth, M. Ng, S. Biryukov, L. Marczak, L. Alexander, K. Estep, K. H. Abate, T. F. Akinyemiju and R. Ali. "Global burden of hypertension and systolic blood pressure of at least 110 to 115 mm Hg, 1990-2015." Jama, vol. 317(2), pp. 165-182. 2017.
- [6]. K. T. Mills, J. D. Bundy, T. N. Kelly, J. E. Reed, P. M. Kearney, K. Reynolds, J. Chen and J. He. "Global disparities of hypertension prevalence and control, a systematic analysis of population-based studies from 90 countries." Circulation, vol. 134(6), pp. 441-450. 2016.
- [7]. Prospective studies collaboration. "Age-specific relevance of usual blood pressure to vascular mortality: a meta-analysis of individual data for one million adults in 61 prospective studies". The Lancet, vol. 360(9349), pp.1903-1913. 2002.
- [8]. P. K. Whelton and R.M. Carey. "The 2017 clinical practice guideline for high blood pressure". Jama, vol. 318(21), pp.2073-2074. 2017.
- [9]. P. Muntner, R. M. Carey, S. Gidding, D. W. Jones, S. J. Taler, J. T. Wright Jr, and P. K. Whelton. "Potential US population impact of the 2017 ACC/AHA high blood pressure guideline." Circulation, vol. 137(2), 109-118. 2018.
- [10]. R. M. Carey and P.K. Whelton. "Prevention, detection, evaluation, and management of high blood pressure in adults, synopsis of the 2017 American College of Cardiology/American Heart Association Hypertension Guideline." Annals of internal medicine, vol. 168(5), pp. 351-358. 2018.
- [11]. A. S. Go, D. Mozaffarian, V. L. Roger, E. J. Benjamin, J. D. Berry, M. J. Blaha, S. Dai, E. S. Ford, C. S. Fox, S. Franco and H. J. Fullerton. "Heart disease and stroke statistics 2014 update a report from the American Heart Association." Circulation, vol. 129(3), pp. e28-e292. 2014.

- [12]. K. Mirza, A. A. Khan, M. M. Ali and S. Chaudhry. "Oral health knowledge, attitude, and practices and sources of information for diabetic patients in Lahore, Pakistan." *Diabetes care*, vol. 30(12), pp. 3046-3047. 2007.
- [13]. N. Shah, Q. Shah and A. J. Shah. "The burden and high prevalence of hypertension in Pakistani adolescents: a meta-analysis of the published studies." *Archives of public health*, vol. 76(1), pp. 1-10. 2018
- [14]. S. Naseem, H. Sarwar, M. Afzal, S. A. Gilani. Knowledge attitude and practice towards hypertension among adult population in a rural area of Lahore, Pakistan. *International journal of scientific & engineering research*, vol. 9 (5), pp.1674-79. 2018.
- [15]. A. Javed, H. I. Hashmi, A. Shahid, S. Mehmood & S. Khurshid. "Survey of Hypocalcaemia Frequency in District Lahore, Pakistan". *American scientific research journal for engineering, technology, and sciences*, vol. 80(1), pp. 101-106. 2021.
- [16]. A. Javed and A. Kabeer. "Food borne health issues and their relevance to Pakistani Society". *American scientific research journal for engineering, technology, and sciences*, vol. 26 (4), pp. 235-51. 2016.
- [17]. L. Hertati, M. Widiyanti, D. Desfitriana, A. Syafarudin and O. Safkaur. "The effects of economic crisis on business finance". *International journal of economics and financial issues*, vol. 10 (3), pp. 236. 2020.