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## Incidence of Hypertension among Various Age Groups in Narowal, Pakistan

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**Abstract**

The data about the prevalence of hypertension of approximately one hundred patients was collected by interviewing them in Narowal, Pakistan. The data had been analyzed to determine the relative occurrence and incidence of hypertension by different age groups. The analysis showed the prevalence of hypertension was more in females (64%, n=64/100) as compared to males (34%, n=34/100). Hypertension was more prevalent in age group 38-47 years (32%) and less prevalent in age group 68-77 years (6%). In our sample population the prevalence of hypertension by age group 18-27 years was 13%, age group 28-37 years was 16%, age group 38-47 years was 32%, age group 48-57 years was 18%, age group 58-67 years was 15% and by age group 68-77 years was 6%. Known as “the silent killer”, the disease may prevail without symptoms for prolonged periods so there is requirement of investigations to know the exact rate and risk factor of this overwhelming disease.

**Keywords:** Hypertension, incidence, age groups, symptoms.



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## INTRODUCTION

Hypertension referred to as high blood pressure, HTN or HPN, is a medical condition in which blood pressure is chronically elevated. Hypertension substantially increases the morbidity and mortality associated with stroke, cardiovascular disease, peripheral vascular disease, retinopathy, and nephropathy (Kannel *et al.*, 2003). Worldwide prevalence of hypertension exceeds 1.3 billion (Bloch, 2016). Hypertension accounts for 9.4 million deaths out of 17 million deaths occurring due to CVDs worldwide (Lim *et al.*, 2012; WHO, 2013). Hypertension results in increase in morbidity and mortality by dramatically escalating the risk of myocardial infarction, congestive heart failure, stroke, peripheral vascular disease and renal failure. Reliable information on the prevalence of hypertension is crucial in development of health policies for prevention, control and early diagnosis of this condition (Coresh *et al.*, 2001).

Persistent hypertension is one of the risk factors for strokes, heart attacks, heart failure and arterial aneurysm and is a leading cause of chronic renal failure. At severely high pressures, defined as mean arterial pressures 50 percent or more above average, a person can expect to live no more than a few years unless appropriately treated (Guyton and Hall, 2005). Although hypertension is less common in children and adolescents, evidence suggests that the roots of adult hypertension are present in childhood. Elevated blood pressure in childhood is an excellent predictor of hypertension in adulthood. Numerous studies have demonstrated end-organ damage, including left ventricular hypertrophy and microalbuminuria, in many hypertensive children. Consequently, prevention of hypertension is the best means for avoiding long-term morbidity and mortality (Berenson *et al.*, 2003). Forty percent to seventy percent of hypertensive children do not have an identifiable etiology and are diagnosed with primary hypertension. The likelihood is greater among children diagnosed during adolescence or those with a significant family history for hypertension. Children with primary hypertension are frequently obese (50 percent) and almost universally progress to adult hypertension (Norwood, 2002). The objective of the study was to find out the prevalence of hypertension in human population visiting Sughra Shafih Medical Complex Narowal.

## MATERIALS AND METHODS

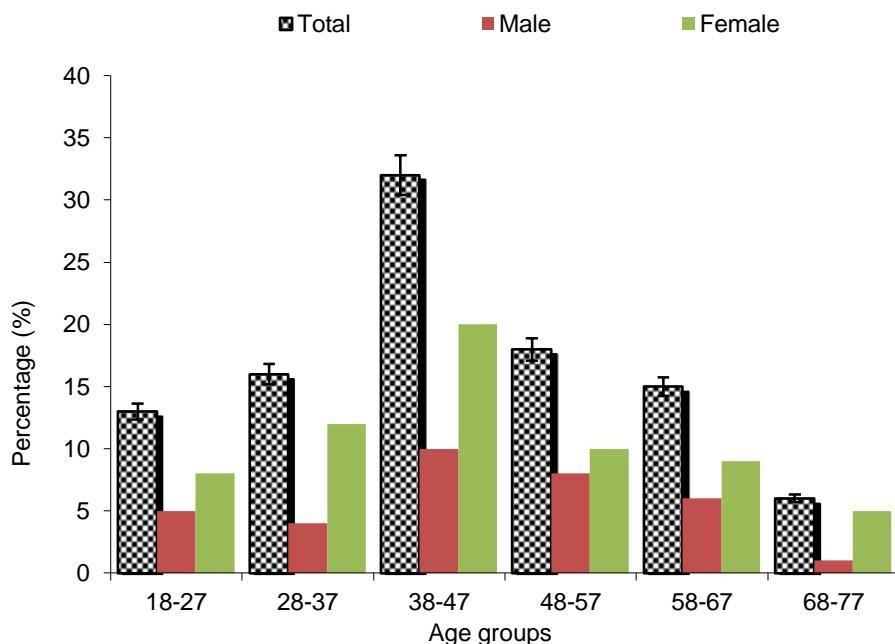
A survey was conducted to find the prevalence of hypertension among males and females population visiting Sughra Shafih Medical Complex, Narowal. Additional data relevant to various risk factors associated with the disease

was also collected from patients on prescribed questionnaire. Appropriate statistical analysis was used in order to find the prevalence of hypertension using SPSS version 16.0 statistical software (SPSS, Chicago, IL).

## RESULTS AND DISCUSSION

The data regarding incidence of hypertension in relation to age groups is presented in Figure 1. Hypertension was more prevalent in age group 38-47 years (32%) and less prevalent in age group 68-77 years (6%). The prevalence increased significantly according to the increase in age among both male and female (Nissinen *et al.*, 1988). In our sample population the prevalence of hypertension by age group 18-27 years was 13% (38.46 % males and 61.53 % females), age group 28-37 years was 16% (25.00 % males and 75.00 % females), age group 38-47 years was 32% (31.25 % males and 68.75 % females), age group 48-57 years was 18% (8 % males and 10 % females), age group 58-67 years was 15% (6 % males and 9 % females) and by age group 68-77 years was 6% (1 % males and 5 % females). In the National Health and Nutrition Examination Survey (NHANES), hypertension prevalence rises rapidly by age from 7.3% (95% CI 6.4–8.2) for subjects aged 18 to 39 years to 66.3% (95% CI 64.5%–68.1%) in subjects older than 60 years (Ong *et al.*, 2007). Raza *et al.* (2000) found 8.1 % prevalence of hypertension among age group 18-27 years, 13.50 % among age group 28-37 years, 18.7 % among age group 38-47 years, 25.7 % among age group 48-57 years, 33.4 % prevalence of hypertension among age group 58-67 years and 17.7 % among age group 68-77 years.

Hypertension is more prevalent in people aged 58 years or more. It is massive health problem affecting 17.7 % adult population of Punjab province of Pakistan. Hypertension is an “iceberg”, disease as only 18.6 % of hypertensive population of Punjab is aware of their hypertensive disease and 81.4 % were unaware (Welton, 2000). A recent study reported that regardless of blood pressure level in young adulthood, blacks have a substantially higher risk for hypertension compared with whites through 55 years of age (Thomas *et al.*, 2018). The major risk factors of hypertension are diabetes, obesity and overweight, tension, smoking. Some females were hypertensive during pregnancy. High cholesterol level also contributes to hypertension. Among hypertensive patients 42% were diabetic, 25% were obese, 10% were smokers, 16.6% were hypertensive because to tension and 7% females were hypertensive during pregnancy (Iqbal *et al.*, 2016).



**Fig. 1. Prevalence of hypertension among various age groups**

## CONCLUSION

The results showed the prevalence of hypertension was more in females as compared to males. Hypertension was more prevalent in age group 38-47 years and less prevalent in age group 68-77 years. Epidemiological studies should be planned occasionally to determine the occurrence rate of such chronic and disabling diseases.

## CONFLICT OF INTEREST

The authors declare that no competing interests exist.

## REFERENCES

Berenson, G.S., Srinivasan, S.R., Hunter, S.M., Nicklas, T.A., Freedman, D.S., Shear, C.L., Webber, L.S., 2003. Risk factors in early life as predictors of adult heart disease: the Bogalusa Heart Study. *Am. J. Med. Sci.*, 298: 141-151.

Bloch, M.J., 2016. Worldwide prevalence of hypertension exceeds 1.3 billion. *J. Am. Soc. Hypertens.*, 10(10): 753-754.

Coresh, J., Wei, G.L., McQuillan, S.R., Brancati, F.L., Levey, A.S., Jones, C., Klag, M.J., 2001. Prevalence of high blood pressure and elevated serum creatinine level in the United States: findings from the third National Health and Nutrition Examination Survey (1988-1994). *Arch. Intern. Med.*, 161: 1207-1216.

Guyton, T., Hall, H.S., 2005. Hypertension can be classified either essential (primary) or secondary. Essential hypertension indicates that no specific medical cause can be found to explain a patient's condition. *79: 161-170.*

Iqbal, M.N., Ashraf, A., Shahzad, M.I., Alam, S., Xia, S., Toor, S., 2016. The Causes of Hypertension in Human Population visiting Sughra Shafih Medical Complex. *PSM Biol. Res.*, 01(2): 78-82.

Kannel, W.B., Vasan, R.S., Levy, D., 2003. Is the relation of systolic blood pressure to risk of cardiovascular disease continuous and graded, or are there critical values? *Hypertens.*, 42: 453-456.

Lim, S.S., Vos, T., Flaxman, A.D., Danaei, G., Shibuya, K., Adair-Rohani, H., et al., 2012. A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. *The Lancet.*, 380(9859): 2224-60.

Nissinen, A., Hall, H.S., Jones, C., 1988. Hypertension in developing countries. *Arch. Intern. Med.*, 41: 141-154.

Norwood, V.F., 2002. Hypertension. *Pediatr. Rev.*, 23: 197-208.

Ong, K.L., Cheung, B.M., Man, Y.B., Lau, C.P., Lam, K.S., 2007. Prevalence, awareness, treatment, and control

of hypertension among United States adults 1999-2004. *Hypertension*. 49(1):69-75.

Raza, M., Mahboob, A., Agha, A., Sikandar, Q.M., 2000. Prevalence of hypertension in Punjab. *Pak. J. Med. Res.*, 9(3): 2-5.

Sontia, B., Mooney, J., Gaudet, L., Touyz, R.M., 2008. "Pseudohyper-aldosteronism, liquorice, and hypertension". *J. Clin. Hypertens.*, 10(2): 153-157.

Thomas, S.J., Booth John, N., Dai, C., Li, X., Allen, N., Calhoun, D., et al. 2018. Cumulative Incidence of Hypertension by 55 Years of Age in Blacks and Whites: The CARDIA Study. *J. Am. Heart Assoc.*, 7(14): e007988.

Welton, P.K., 1994. Epidemiology of hypertension. *Lancet.*, 344: 191-196.

World Health Organization, 2013. A global brief on hypertension: silent killer, global public health crisis: World Health Day 2013.