

Psychosocial Risk Factors Associated with Hypertension in Females of 18 – 49 Years in a Community of Faisalabad

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Abstract

Objective: The objective of the study was to determine the psychosocial risk factors associated with hypertension in females of 18 – 49 years in a community of Faisalabad in Punjab.

Study Design: Population based case control study.

Place and Duration of the Study: The study was conducted in population of 10,240 females aged 18 – 49 living in union council 227 Faisalabad from September 2010 to March 2011.

Methodology: The simple random sampling was done to identify the union councils and then study subjects. The cases and controls were selected among the females according to the sample size and sample selection criteria.

Results: The frequency distribution and calculation of statistics showed the mean age 33.5 years, standard deviation 6.517, standard error = 0.461. In bivariate analysis the psychosocial factor that were found more significantly associated with hypertension were poor family bondage (OR 1.96, 95% CI 1.01 – 3.8) and joint family system (OR 0.483, 95% CI 0.248 – 0.942). It was observed that after controlling for all the

factors studied the statistically significant association was exhibited by poor family bondage (OR = 8.846, 95% CI 1.865 – 41.944) and lack of physical exercise (OR 2.283, 95% CI 1.82 – 2.94).

Conclusion: The hypertension in females aged 18 – 49 years in an urban community of Faisalabad was associated with poor social bondage and lack of physical exercise. Thus awareness programs should be initiated to decrease the risk factors.

Key Words: Hypertension, psychosocial, dietary factors.

Introduction

Hypertension is a common and lethal health problem in underdeveloped countries.¹ The prevalence of hypertension is different in various regions of the world and influenced by the culture, life style, dietary habits and community awareness. The urbanization in populated cities has increased the prevalence of hypertension.²

Hypertension in females is under the influence of various factors like demography, sociocultural and economical factors. Moreover, the results may be variable in different regions of a country.³

The prevalence of hypertension in the worldwide adult population varies from 5.2 to 70.7%.⁵ In various research studies in developing countries the prevalence of hypertension was found between 29.6 and 35.5%.⁴

The importance of Hypertension in economically developing countries is underestimated as little infor-

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mation about prevalence, disease burden, risk factors and disability adjusted life years due to hypertension is available.⁵

According to USA Joint National Committee on Prevention, Detection Evaluation and Treatment of High Blood pressure report, hypertension is defined as systolic blood pressure ≥ 140 mmHg or diastolic blood pressure ≥ 90 mmHg.⁶

The harmful effects of hypertension include cardiovascular, retinal, neurological, renal, blood loss and obstetrical complication. The cardiovascular complications include heart attack, heart failure, left ventricular hypertrophy and atherosclerosis. The retinal lesions causing scotomata, blurred vision, papilledema or hemorrhages of the macular area and blindness. The neurological complications include headache, vertigo, tinnitus, dimmed vision, syncope, vascular occlusion, hemorrhage, and encephalopathy. Unfortunately the knowledge, awareness, prevention and management of hypertension and its modifiable risk factors were low in economically developing countries.^{7,8}

Materials and Methods

The case – control study was conducted to identify various psychosocial factors associated with hypertension in females aged 18 – 49 in Punjab from September 2010 to March 2011. The study was conducted in district Faisalabad in Punjab.

The study population was consisted of 10,240 females aged 18 – 49 living in union council 227 in Faisalabad. The informed consent was taken and all information was kept confidential. The sample size calculations were carried out at 95% confidence interval and 80% power of test. Considering the expected frequency is 85% among hypertensive and 55% among controls. The case to control ratio 1:1, the sample size was calculated 84 by Epi – Info 2000. Then simple random sampling was done to find out the union councils and then study subjects. The primary sampling unit was the district Faisalabad. The secondary sampling unit was union council 227.

The females of child bearing age i.e. 18 – 49 years; resident of the study area were included and checked for hypertension. If any disease or complication was found then proper referral was done for investigations and management.

The history of hypertension in parents, renal and thyroid diseases, pregnant ladies, using hormonal contraceptives and who refused to give the consent were

excluded from the study. The Korotkoff phase I (appearance) and phase V (disappearance) was recorded for the Systolic Blood Pressure and Diastolic Blood Pressure, respectively. The classification of BP from the JNC-7 was used to identify the cases of hypertension.

Data analysis was performed using SPSS version 16. Initial analysis included frequency distribution and calculation of descriptive statistics. Bivariate analysis was performed and odds ratio was calculated to look at the association between various risk factors and hypertension. Logistic regression was done to find the adjusted odds ratio to find association of the risk factors with hypertension. All the analysis was performed at $\alpha = 0.05$.

Results

The frequency distribution and calculation of statistics showed the mean age 33.5 years, standard deviation 6.517, standard error = 0.461. The 89 cases and 89 controls were selected according to ratio 1:1. The results are presented in tables.

Discussion

In this research study psychosocial risk factors of hypertension were studied in females in home based survey. Many studies had reported the finding that more adult females suffered from hypertension all over the world.⁹

Similar results were found in this study. The mean age of hypertensive females in the study was found 33.5 years, standard deviation 6.517, standard error 0.416.

The international research showed similar results that prevalence of hypertension for females was at younger ages than males.¹⁰

In the study hypertension was three times more in unemployed females. An international study had observed an association between hypertension and occupation and employment situations. The unemployment was associated with hypertension.¹¹

Higher death rates from hypertension have been reported among unemployed people in several developed countries after age, socioeconomic status, and marital status have been controlled during analysis.

The study had shown that poverty was more among the cases of hypertension (74%), however it

was not statistically significant. (OR = 0.879, 95% CI 0.168 – 4.599).

Table 1: Association of demographic factors with hypertension.

Factors		Hypertension		Bivariate Analysis			Multivariate Analysis		
Sr. No.		Case (n)	Control (n)	Crude odds ratio	95% CI		Adj. Odds Ratio	95% CI	
					Lower	Upper		Lower	Upper
1.	Muslims	81	73	2.22	0.83	6.05	2.874	0.577	14.318
	Non-Muslims	8	16						
2.	Married	24	32	0.66	0.33	1.31	0.980	0.298	3.225
	unmarried	65	57						
3.	Illiterate	18	26	0.614	0.308	1.225	2.016	0.469	8.672
	Literate	71	63						
4.	Unemployment	73	71	1.16	0.51	2.61	2.919	0.687	12.395
	Employment	16	18						
5.	Poverty (< 6000 Rs) yes	66	59	1.459	0.764	2.780	0.879	0.168	4.599
	No	23	30						

Table 2: Association of life style factors with hypertension.

Sr. No.	Factor	Case	Control	Crude Or	95% CI		Adjusted Or	95% CI	
					Upper	Lower		Upper	Lower
1.	Lack of Physical exercise	41	32	1.52	0.8	2.9	2.283	1.82	2.94
	Physical exercise	48	57						
2.	Lack of recreation	41	46	0.798	0.44	1.44	0.479	0.80	0.912
	recreation	48	43						
3.	Physical abuse	47	54	0.725	0.40	1.32	0.668	0.166	1.378
	no	42	35						
4.	Smoking	18	16	1.157	0.55	2.45	0.582	0.211	2.110
	no	71	73						
5.	Poor Family bondage	62	48	1.96	1.01	3.8	8.845	1.865	41.944
	no	27	41						
6.	Joint family	57	70	0.483	0.25	0.94	0.468	0.113	1.943
	Nuclear family	32	19						
7.	Fatigue	49	43	1.030	0.78	2.36	0.676	0.194	2.352
	no	40	46						

8.	Sedentary life style	53	51	1.097	0.60	1.99	1.020	0.279	3.727
	no	36	38						

In international literature it was documented that the poverty was associated with hypertension in the community and WHO definition of poverty was used to assess the relationship between poverty and hypertension.¹²

Recreation is a human right under the Universal Declaration of Human Rights. In this study, lack of recreation was found in 46% of the cases. The lack of recreation was found to have statistically significant association with hypertension. Recreation has many health benefits, and research studies had shown that lack of recreation increased the risk of chronic diseases like hypertension and heart disease.¹³

The research in developed countries had shown that the hypertension was caused by domestic violence on females.¹⁴

In the study tobacco use was found in 20% of female, however the tobacco smoking was not found significant in causation of hypertension. In research there was a significant correlation between non-smoking, cessation of cigarette smoking and prevalence of hypertension. The percentages of current smokers, nonsmokers and ex-smokers were documented to be higher in the hypertensive group than those in the prehypertensive group. The prevalence of hypertension was highest in the nonsmokers and former smokers and lowest in the smokers. The significant association was observed between tobacco use and the prevalence of hypertension (P, 0.0001).¹⁵

In the study it was observed that the joint family system was found in 64% of cases of hypertension.

In a research it was documented that the joint family system caused decrease in morbidity and mortality due to cardiovascular diseases and hypertension.¹⁶

In the study the sedentary life style was found more in the hypertensive cases (58.5%) than the controls, however the association was not found statistically significant. In international research it was documented that the prevalence of a sedentary lifestyle was higher in women (70%) than in men (45% – 60%). There were direct associations between a sedentary lifestyle and abdominal and pelvic circumferences, obesity, systolic blood pressure which demonstrated the greatest percentage difference between sedentary and active individuals. An important finding was that according to International Diabetes Federation criteria, sedentary lifestyle had shown the strong association of the risk factor of sedentary life style with hypertension.¹⁷

In the study it was found that the poor family or social bondage had statistically significant association with hypertension. (OR = 8.846, 95% CI 1.865 – 41.944).

Research scholars found that people with poor family or social bondage had blood pressure readings that were mean 30 points higher than in people who socialize with family. The other factors were controlled during analysis like anxiety, depression and stress.¹⁸⁻²⁰

The lack of physical exercise was found significantly associated with hypertension. The research had shown that the regular physical exercise should be advised to prevent and control hypertension.²¹

Conclusions

Hypertension is a public health problem and associated with many psychosocial risk factors. Awareness and health education among the females about psychosocial risk factors of hypertension should be delivered through home based prevention programs.

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