

FREQUENCIES OF NON-COMMUNICABLE DISEASES IN RURAL AND URBAN POPULATIONS IN TWO DISTRICTS OF PUNJAB, PAKISTAN

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ABSTRACT

Objective: The objective of this study was to have an idea about the comparative frequency of non-communicable diseases in both rural and urban populations of Central Punjab, Pakistan.

Methods: Data were collected from a representative sample of 1000 patients reporting in public and private clinics/hospitals of Faisalabad and Sargodha. The following parameters were studied: ischemic heart disease, hypertension (B.P. > 140/90), diabetes (plasma glucose of 126mg/dL or higher after overnight fast or plasma glucose of 200mg/dL or more, two hours after meals). These parameters were compared and analyzed regarding gender, age and social background.

Result: The results showed a lot of variation. Out of 1000 cases, 420 patients were from the rural areas of different ages and gender, while the rest were from the urban community. Out of the total, 632 were males and 368 were females. Significantly higher frequencies of all 4 diseases were observed in rural population (especially middle-aged males) as compared to urban population.

Conclusion: Frequency of Ischemic heart disease, Diabetes mellitus, Hypertension, Tobacco smoking and lack of physical activity is higher in rural areas mostly age between 41-50 years. This study directed the future researches to be conducted in this context so as to establish guidelines on preventive strategies against NCDs for the developing countries.

Key Words: Body Mass Index, Non-Communicable Disease, Ischemic heart disease, Hypertension, Diabetes Mellitus.

This article may be cited as: Anwer I, Ijaz N, Awan KA, Usman M, Khan RR, Kashif M. Frequencies of non-communicable diseases in rural and urban populations in two districts of Puniab. Pakistan. Ann Allied Health Sci.2019; 5(2):16-19

INTRODUCTION

Non-communicable diseases (NCDs) are non-infectious and chronic diseases. NCDs, including cardiovascular diseases, cancer, respiratory diseases, diabetes and mental illness diseases and injuries have become the leading causes of morbidity and mortality in Pakistan.¹ ²NCDs are a common cause of mortality and morbidity (about 54.9% of total mortality) in Pakistan and other developing countries, and effected socio-economic life of societies.³ The rising of these NCDs in whole population of the world is opening new research areas of study to cope with new health issues. Awfully, the current policies and strategies of WHO for the controlling of NCDs is not accomplishing the contemporary requirements. ⁴WHO policies are an obsolete based on theoretical and predicted modernity, non-specific disease categories and simplicity in models.^{4,5} However, it is generally believed

that developing countries can control these NCDs. Unfortunately due to lack of healthcare facilities, these countries lie at the mercy of health challenges.⁴ Moreover, NCDs sector has been ignored by authorities though it is posing a big challenge for the indigenous and global healthcare takers. These improper healthcare facilities allies with poverty and imposes a double burden of disease, disability and premature people death of millions in developing countries.^{3,4}

The NCDs diversity in rural and urban populations can be explained largely by social and economic changes that are expected to result in a rise in the prevalence of risk factors for such diseases.⁵ Raised cholesterol, physical inactivity, high blood pressure, tobacco consumption, obesity, lack of awareness and inadequate medical facilities associated with a rise in the prevalence of major risk factors of chronic diseases ^{3,5,7}

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A survey reported death share of NCDs i.e. 4.9, 2.6, 4.4 and 7.1 million people dead as a result of tobacco use, overweight/obese, cholesterol level and raised blood pressure.⁵ The threat is growing each year and is projected to increase by 17% in the next 10 years ^{3,8,9}

The dilemma of Pakistani (population of 197 million) is a limited health care and is more vulnerable to it.¹⁰ Modern lifestyle and scarce health knowledge also increased the chances of it. It is also observed that rural population is more affected than the urban. It believes that by the year 2025, the number of persons with diabetes will rise to 14.5 million, representing a 3.37-fold increase in caseload. ¹¹The expected economic impact of this situation is that Pakistan will spend about 31 billion dollars on the NCDs remedy and it can be saved by providing health knowledge.¹²

The present study was conducted; using personal funds and resources, to provide community based profile of NCDs incidence and reflect the comparative prevalence in rural and urban populations, using a common protocol and methodology. The results of this study are applicable to the population and areas studied and are expected to help the policy makers to understand the need for prevention of NCDs.

METHODS

Data were collected from a representative sample of 1000 patients, aged between 10 to >55 years, reported in some private clinics and Government hospitals in two cities (Faisalabad and Sargodha). The data of this study are presented after receiving written consent of people that could be utilized to analysis and publication. The patients were assured that no names or identification will be revealed to anyone. Data were collected on such parameters as hypertension, ischemic heart disease, diabetes, obesity, tobacco consumption, and physical activity. The data were statistically analyzed by using SPSS 9.0 software to compare the prevalence of NCDs in rural and urban populations to illustrate the growing burden of the diseases.

RESULTS

Examined people were varied in age, 9.2% were aged below 25 years, 35.3% were aged between 41 to 55 years and rest age was varied from 26 to 40 years (35%). There were just 20.5% cases above the age of 55 years. Out of the total

patients reported, 63.2% were male and 36.8% female. There were 422 (42.2%) from the rural areas, while the rest 57(57.8%) were from the urban.

The result of this study showed that there were 509 cases of hypertension; among these patients 311 (61.1%) were from rural areas, while the rest 198(38.9%) from the urban. The gender ratio of hypertension was 320:189 (male: female; 62.9%: 37.1%), it showed that a higher ratio was found in the male as compared to female of the hypertensive, majority were between the age of 41 to 55 years (42.6%).

There were 291 cases reported for ischemic heart disease (IHD). Among these 190 (65.3%) were drawn from rural areas, while the rest 101(34.7%) from the urban (P≤0.002). The percentage of IHD among male was 60.8% (177) and female 39.2% (114). More rural subjects suffered from IHD, among whom male was predominant. Of the IHD, majority were between the age of 41 to 55 years (44.3%).

There were 384 cases reported for diabetes mellitus of the total examined. Among these 234 (60.9%) were from rural areas, while the rest (150, 39.1%)

from the urban. Diabetic males were 238 (62.0%), whereas 146 (38.0%) were females (p≤0.05). The incidence of diabetes mellitus was higher among the age group between 41 to 55years (181,47.2%).

There were 485 cases reported for tobacco consumption. Among these 304 (62.7%) were drawn from rural areas, while the rest (181, 37.3%) from the urban (P<0.01). Tobacco consumer males were 440 (90.7%) whereas 45 (9.3%) were females (P≤0.001). The incidence of tobacco consumption was high among the rural males. Of the tobacco consumers, majority were between the age of 41 to 55 years (207, 42.7%).

Of the total patients examined, there were 371 cases reported on subjects engaged in physical activity. Among these 207 (55.8%) were from rural areas, while the rest (164, 44.2%) from the urban. The physically active male was 257 (69.3%), whereas 144 (30.7%) were female (p≤0.001). The more physical activity was found within the age group 26 to 40 years (164, 44.2%).

Table 1: Distribution of different non-communicable diseases according to location, sex and age

Disease/No. of patients	Location		Sex		Age (years)			
	Rural	Urban	Male	Female	10-25	26-40	41-55	>55
Hypertension 509	311 61.1%	198 38.9%	320 62.9%	189 37.1%	09 1.8%	151 29.7%	217 42.6%	132 25.9%
IHD 291	190 65.3%	101 34.7%	177 60.8%	114 39.2%	06 2.1%	79 27.1%	129 44.3%	77 26.5%
D mellitus 384	234 60.9%	150 39.1%	238 62.0%	146 38.0%	02 0.5%	101 26.3%	181 47.2%	100 26.0%
Tobacco 485	304 62.7%	181 37.3%	440 90.7%	45 9.3%	26 5.3%	146 30.1%	207 42.7%	106 21.9%
Physical Activity 371	207 55.8%	164 44.2%	257 69.3%	114 30.7%	57 15.4%	164 44.2%	115 31.0%	35 9.4%

DISCUSSION

The data reveals that the incidences of NCDs are not less prevalent in the rural than urban community. A brief look at the column "Location rural" (Table 1) reveals that more rural people suffer from these diseases than the urban. As far as sex is considered, males are at high risk to NCDs and younger people are least affected irrespective of gender. However, review of literature shows that NCDs are prevalent in developing countries.

Regrettably, proper healthcare has not been provided to these NCDs since its outbreak and rough data was found in the disease pattern, trend and its consequences along with the epidemiological transition. Pakistan is mainly a rurally populated country with a distribution of 67.3% rural and 32.7% urban population.¹³ The rural people in Pakistan have misconceptions about NCDs due primarily to illiteracy. For example, they consider that hypertension

should be treated only when symptomatic and eating saturated fat plus sugars (common name in Urdu; ghee and shaker) is a symbol of wealth and prosperity. This attitude is among main causes, which inclined to consumption of energy dense foods without any physical activity.¹⁴ The most common and problematic non-communicable conditions in a good number of developing countries are heart diseases, hypertension, diabetes and obesity. There is significantly higher

prevalence of NCDs risk factors in Pakistani adults in rural areas.^{14,15}

The incidence of NCDs in males is quite high due to risk factors and vulnerability, while their impact in the age above 40 years is devastating. IHD, hypertension and diabetes have severe socioeconomic consequences that result from premature deaths, long-term disability and cost for the patients. Male deaths during middle age could create a significant cohort of widows, which increases the likelihood that women will live the final years in poverty.¹⁴ Additionally; all these diseases have also a substantial burden in terms of costs on country's health system. In rural areas, income sources human, behavior, along with tobacco consumption and a more sedentary lifestyle appear to have produced marked increases in chronic diseases.¹⁶

Pakistan general perception about obese is considering a good health and slimness as sickness. Similarly, NCDs are considered to be diseases of the elderly. The shifted life style from active to sedentary contributed to more incidences of NCDs. The rural people have resorted to mechanization, hence spend less energy in their daily chores, whereas their dietary habits have not changed much. They are still fond of consuming more fat (butter, ghee) and carbohydrates. The obesity touches rural men in the age group above 40 years who are more resourceful and receive help from others in their tasks.¹⁷

The National Health Survey of Pakistan defined obesity in Pakistan; 34.2% males and 60% females in the urban areas and 35.7% males and 55.5% females in the rural areas were reported to have central obesity. This is a grave trend since central obesity is a more important risk factor for IHD than total body adiposity.¹⁸ This trend has shown a considerable change in the present study. Obesity was found more in rural population as compared to the urban. There is a gender change as well probably because women still do not have very many energy-saving devices and still do the household jobs with their own hands.

Though smoking is a risk factor in NCDs, rural people are of the notion that it serves as an expectorant and bowel regulator. More males in this study were found tobacco consumers (90.7%), which also confirm our previous work.¹⁹

Smoking habit showed significant difference between male and female patients - more males indulge in this habit than females. Present trend of expensive advertisements by multinational companies further adds to the misconceptions of rural population. Multinational companies are competing fiercely to expand their sales of tobacco products in developing countries.²⁰ Further damage is being done by the modern lifestyle which is invading middle income and illiterate rural population. Children in developing countries are often malnourished. Those from the rural areas have multiple nutritional deficiencies in childhood leading to metabolic abnormalities and NCDs.²⁰ Health education is important for all people to attain better health outcomes. This can be enhanced through community-based health workers and media. This should be incorporated in curricula at all levels to maximize the knowledge on risk factors against non-communicable diseases. The public health approach should target lifestyle intervention, screening people for high-risk for diabetes, IHD and hypertension. Preventive health promotion against NCDs should be part of the national media strategy.^{4,20}

CONCLUSION

This study directed the future researches to be conducted in this context so as to establish guidelines on preventive strategies against NCDs for the developing countries. Only then can precise recommendations be given on improvement of this health. The health systems in low-and middle-income countries will not be able to support the burden of NCDs, if not addressed intime. Prominent causes for heart disease, diabetes, and tobacco use, obesity and urbanization can be prevented by urgent preventive actions. Formal exercise needs to be encouraged, and sedentary lifestyle discouraged. NCDs prevention should be combined with primary health care and other health promotion initiatives.

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