Original Research Article

A Comparative Study on the Prevalence of Risk Factors of Non Communicable Diseases in Rural and Urban Areas of District Etawah

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Abstract

Context: Non-communicable diseases (NCDs) are also known as chronic diseases, because they tend to be of long duration. Detection, screening, treatment and palliative care, are the key components of the response to NCDs. *Aim:* To know the prevalence of risk factors of non-communicable diseases in rural and urban districts of Etawah. *Setting and design:* It is a community based cross sectional study among person aged between 25-64 years residing in the rural and urban areas of district Etawah. *Methods and material:* WHO STEPS approach was used. *Statistical analysis:* The collected data was analysed using SPSS Inc. version 23.0, Chicago. *Results:* In the study almost half of the subjects were males. Prevalence of current tobacco users, alcohol users, insufficient use of fruits and vegetables and physical inactivity were found 42.4%, 22.0%, 92.8%, 51.1% in rural areas and 25.4%, 19.8%, 84.8% and 54.9% in urban areas respectively. Prevalence of included overweight, obesity, increased waist circumference, raised systolic and diastolic blood pressure were found 32.2%, 11%, 26.1%, 14.8% and 19.7% in rural areas and 42%, 21.2%, 49.2%, 14.4%, 18.9% in urban areas respectively. Prevalence of self-reported diabetes and hypertension in rural areas were 2.27%, 9.47% and in urban areas 4.92% and 10.98% respectively. *Conclusion:* Healthy lifestyle changes should be encouraged in order to reduce modifiable risk factors.
Keywords: Non-communicable diseases (NCDs), Rural and Urban Areas of District Etawah, fruits and vegetables and physical inactivity were Healthy lifestyle.

INTRODUCTION

Recently, the world's major killers are the NCDs (Non-communicable diseases) such as cardiovascular diseases (CVD), diabetes, chronic obstructive pulmonary disease (COPD), hypertension (HTN) and cancers, but the world is not doing enough for their prevention and control. Non-communicable diseases (NCDs) have become an emerging pandemic globally with developing countries having disproportionately higher rates [1].

Non-communicable diseases (NCDs) cause 41 million deaths each year, which is equivalent to 71 percent of all deaths globally. Annually, 15 million deaths occur from NCD among the persons between the ages of 30 and 69 years; around 85 percent of these "premature" deaths occur in low- and middle-income countries. Annually, most of the NCD deaths are caused by cardiovascular diseases (around 17.9 million people), followed by cancers (9.0 million people),

chronic respiratory diseases (3.9 million people), and diabetes (1.6 million people). These four non-communicable diseases account for over 80 percent of all premature NCD deaths [2].

There is paucity of community-based studies on prevalence of risk factors of non-communicable diseases especially in this region of the country. Hence this community-based study on risk factors of non-communicable diseases was taken up.

METHODS

It was a community based cross sectional study. Taking the prevalence of daily smokeless tobacco consumption 12%[3] with an absolute error of 4% using the formula:

n=4pq/L2.Where n= sample size, p= prevalence of daily smokeless tobacco consumption=12%, q= 1-p and L= allowable error= 4%.

$$n = (4 \times 12 \times 88) / (4 \times 4) = 264.$$

Therefore, 264 individuals were taken from both urban and rural areas of district Etawah. The study was based on the WHO STEPS approach [3].

There are total 8 blocks in district Etawah. Of these, two blocks that were randomly selected. From each selected block, two villages were randomly selected. In the village, from a particular landmark like school first household has been selected than in left direction next household was selected. Similarly, 66 families were selected from each village. Similarly, for urban areas there are 36 municipal wards in district Etawah. Of these two wards were randomly selected.

Predesigned and structured questionnaire were filled and anthropometric measurements were taken. Biochemical measurements were done on every 5th individual i.e. on 53 people each in urban and rural areas.

Statistical Analysis

The collected data was entered in MS-Excel and then it was analysed andstatistically evaluated using SPSS-23 version (SPSS Inc. version 23.0, Chicago). Qualitative data were expressed by the percentages and tested by chi square test, 95% confidence interval was calculated for quantifying the risk factors.

RESULTS

Table-1: Comparison of behavioural risk factors among study subjects residing in rural and urban areas (n=264)

S.No	Risk Factors	Rural	Urban	Total
		Number (%)	Number (%)	Number (%)
1.	Current tobacco users	112 (42.4%)	67 (25.4%)	179 (33.9%)
2.	Use of alcohol	58 (22.0%)	26 (19.8%)	84 (15.9%)
3.	Insufficient use of fruits and vegetables	245 (92.8%)	224 (84.8%)	469 (88.8%)
4.	Physical inactivity	135 (51.1%)	145 (54.9%)	280 (53.0%)
1.	Overweight	85 (32.2%)	111 (42.0%)	196 (37.1%)
2.	Obesity	29 (11.0%)	56 (21.2%)	85 (16.1%)
3.	Increased WC	69 (26.1%)	130 (49.2%)	199 (37.1%)
4.	Raised systolic BP	39 (14.8%)	38 (14.4%)	77 (14.6%)
5.	Raised diastolic BP	52 (19.7%)	50 (18.9%)	102 (19.3%)

Table-1 show that the prevalence of current tobacco users was 42.4% and 25.4% among rural and urban population respectively and it was statistically significant. Prevalence of alcohol intake was 22.0% among rural and 19.8% among urban population and the difference was statistically significant. It was found that prevalence of insufficient use of fruits and vegetables was 92.8% in rural population and 84.8% among urban population and the difference was statistically significant. Prevalence of overweight was found more among urban population than in rural population (42.0% and 32.2% respectively) and the difference was statistically. Similarly, prevalence of obesity was also found more among urban population than rural population (21.2% and 11.0% respectively) and the difference was statistically. Prevalence of increased waist circumference was also found more in urban areas 49.2% as compared to 26.1% in rural areas and the difference was statistically significant.

Table-2: Comparison of chronic NCD (Diabetes and Hypertension) among study subjects residing in rural and urban areas (n=264)

	Rural	Urban	Total	p value
	No. (%)	No. (%)	No. (%)	
Diabetes				
Diagnosed raised blood sugar	8 (3.0%)	22 (8.3%)	30 (5.7%)	**0.0085**
Self reported diabetes	6 (2.3%)	13 (4.9%)	19 (3.6%)	0.1205
Hypertension				
Known Hypertensive	25 (9.5%)	29 (10.9%)	54 (10.2%)	0.57
Diagnosed hypertensive	65(24.6%)	61(23.1%)	126(23.9%)	0.68

Table-2 shows that the prevalence of self-reported diabetes was 2.3% and 4.9% among rural and urban areas respectively and the difference was statistically insignificant. Prevalence of subjects with raised blood sugar was 3.03% in rural areas and 8.3% in urban areas and the difference was statistically significant.
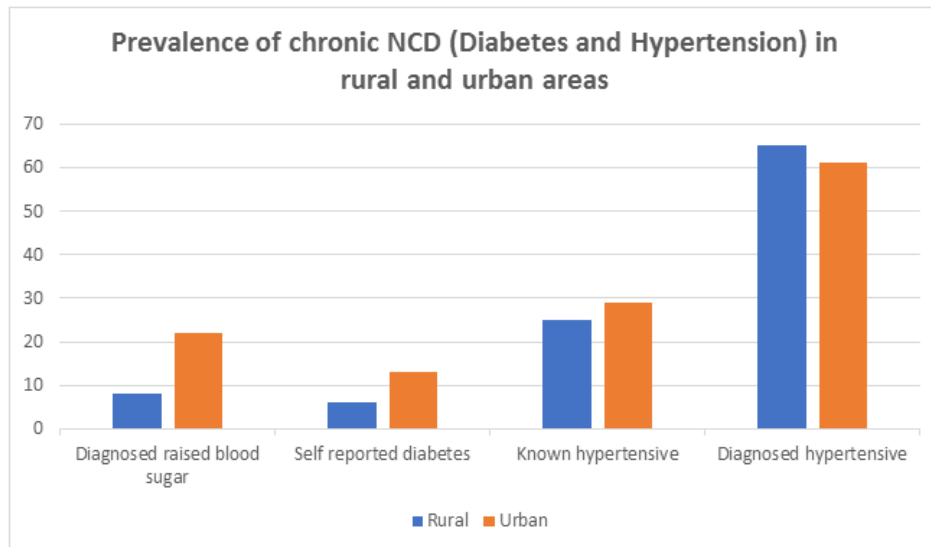
Prevalence of chronic NCD (Diabetes and Hypertension) in rural and urban areas

Table-3: Comparison of prevalence of lipid disorder among study subjects residing in rural and urban areas

Lipid levels-	Rural (n=53)	Urban (n=53)	Total (n=106)	p value
Low HDL	10(18.9%)	4(7.5%)	14(13.2%)	0.226
Normal HDL	42(79.2%)	48(90.6%)	90(84.9%)	
High HDL	1(1.9%)	1(1.9%)	2(1.9%)	
Low triglyceride level	1(1.9%)	10(18.9%)	11(10.4%)	
Normal triglyceride level	42(79.2%)	23(43.4%)	65(61.3%)	**<0.001**
High triglyceride level	10(18.9%)	20(37.7%)	30(28.3%)	
Low cholesterol level	19(35.8%)	10(18.9%)	29(27.4%)	
Normal cholesterol level	33(62.3%)	38(71.7%)	71(67.0%)	0.55
High cholesterol level	1(1.9%)	5(9.4%)	6(5.7%)	

Table-3 shows that the overall prevalence of low HDL was 13.2%, it was 7.5% and 18.9% in urban and rural areas respectively. Overall prevalence of hypertriglyceridemia 30.0% which was 37.7% and 18.9% in urban and rural areas respectively. It was found statistically significant.

DISCUSSION

In the present study among hypertensives, 10.2% were known hypertensives and 23.9% were diagnosed hypertensives. Known hypertensives were 9.5% in rural area while they were 10.9% in urban areas of district Etawah. Bhagyalaxmi conducted a study in urban and rural areas of Gandhinagar, Gujaratamong which 29.1% of urban residents and 15.4% of rural residents were hypertensive [4]. Similarly, a study done by Oomen in Tamil Nadu among 6196 adults found that prevalence of hypertension was more common in urban group than in rural group (with 29% and 17% respectively) [5]. The present study shows that self-reported diabetics was 4.9% in urban areas, while they were 2.3% in rural areas. The prevalence of self-reported diabetes by Oomen in Tamil Nadu in 2010 in urban areas was 24% while in rural areas 11% [5]. This

can be attributed to urbanisation and changing lifestyle patterns.

The prevalence of insufficient use of fruits and vegetables in the present study was observed 88.8%. It was 92.8% in rural areas and 84.8% in urban areas. In the study done by Bhagyalaxmi in Gandhi Nagar, Gujarat found prevalence of low fruit and vegetable intake was 96.4% in rural areas and 92.7% in urban areas [4]. This can be attributed to different lifestyle habits that are followed.

The prevalence of physical inactivity in the present study was 53.0%. In present study it was 51.1% in rural areas and 54.9% in urban areas. In a study conducted by Oomen in rural and urban areas of Tamil Nadu observed that the prevalence of physical activity was 63% in urban and 43% in rural areas while study conducted by Bhagyalaxmi in Gujarat physical inactivity showed prevalence of 38.9% in urban areas and 14.2% in rural areas [4, 5]. This can be attributed to different lifestyle habits in both rural and urban areas.

The prevalence of overweight in the present study was 37.1%. It was 32.2% in rural areas and

42.0% in urban areas. In a study conducted by Oomen observed that prevalence of overweight in urban areas was 54% while in rural areas was 31% were overweight [5]. This can be attributed to increasing urbanisation and changes in the lifestyle habits.

The prevalence of obesity in the present study was16.1%. Logaraj conducted a study in rural and urban Tamil Nadu which showed prevalence of obesity was 56.70% [6]. This could be due to different geographical areas, different age group composition or more awareness regarding obesity and its complications.

RECOMMENDATIONS
There is immediate requirement of increased awareness of risk factors for chronic NCDs in general population, which can be done mainly through intensive IEC campaigns through multifaceted strategies is needed to educate with main focus on younger generation like- children, adolescents and adults so as to deter early initiation of smoking and alcohol.

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