

Prevalence Of Risk Factors Of Non Communicable Diseases In District Ambala, Haryana.

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Abstract

Background: In low-income countries of the world the pattern of disease is changing at an alarming rate. In the last few years, there has been a changing pattern of disease profile from acute infectious communicable disease to chronic non-communicable diseases. A non-communicable disease (NCD) is a medical condition that is non-infectious and non-communicable among people. World Health Organization defines non communicable diseases as “diseases of long duration and are a result of a combination of genetic, physiological, environmental and behavioural factors”. The 4 main types of non-communicable diseases are cardiovascular diseases, cancers, chronic respiratory diseases and diabetes.

Aims and Objectives: To evaluate the prevalence of risk factors of non-communicable diseases in district Ambala, Haryana.

Material and Methods: This is a population based cross sectional descriptive study carried out at Mullana. This study was conducted in the field practice area of the Rural and Urban Health and Training Centre attached to MMIMSR, located at Mullana in Ambala District of Haryana. Study population identified were those belonging to the age group of 20–80 years residing in the study area permanently at the time of the study. A maximum 407 subjects aged 21 years and above were enrolled in the study. This study was carried out from July 2022 to September 2022.

Results: Among 407 subjects enrolled for the study, the minimum age was 21 years with the maximum of 80 years. The study found that majority of males and females belonging to age group of 51-60 (77.6%) years and 71-80 years (60.0%) respectively were suffering from non-communicable diseases. This association was found to be statistically significant ($p=0.0006$). The male subjects who studied up to middle school were among majority of sufferers (79.4%) however among females, the illiterate ones (57.1%) had higher incidence of non-communicable diseases. This association was found to be statistically significant ($p=0.0006$). The study found that majority of male farmers (78.7%) were suffering from non-communicable diseases and among females, majority of unemployed ones (56%) had higher incidence of the same. This association was found to be statistically significant ($p<0.0001$).

Conclusion: The findings of study emphasize the need of community-based IEC (Information Education Communication) intervention along with the provision of comprehensive package health services so as to reduce the risk of NCDs. The population at risk of NCDs must be involved at all level of prevention through full community participation.

Keywords: Community-based IEC, risk factors, non-communicable diseases (NCD), non-infectious, behavioural factors, pattern of diseases, public health, low-income population.

INTRODUCTION

In low-income countries of the world the pattern of disease is changing at an alarming rate.¹ In the last few years, there has been a changing pattern of disease profile from acute infectious communicable disease to chronic NCD.

A non-communicable disease (NCD) is a medical condition that is non-infectious and non-communicable among people. WHO defines non communicable diseases as “diseases of long duration and are a result of a combination of genetic, physiological, environmental and behavioural factors”.² The 4 main types of non-communicable diseases are cardiovascular diseases, cancers, chronic respiratory diseases and diabetes.²

Non-communicable diseases (NCDs) have been recognized as known threats to socio-economic development worldwide.^{3,4,5} Non-communicable diseases (NCDs) are one of the major emerging health problems affecting both males and females worldwide, and trending as major challenge for all health-care systems NCDs, especially Cardiovascular disease, Diabetes mellitus, Hypertension, Obesity and Stroke, have emerged as a major public health problem in India.⁶

Targeting the risk factors for non-communicable diseases is recognized as an essential primordial and primary prevention strategy. High blood pressure, tobacco use, alcohol use, unhealthy diet, physical inactivity and obesity are the leading risk factors of NCDs globally.⁷ If these risk factors are managed properly, more than half of premature deaths due to NCDs in India could be prevented.

Therefore, the present work was conducted to study the prevalence of various NCDs risk factors in the field practice area of MMIMSR, Mullana, Ambala.

MATERIAL AND METHODS

Study design: This is a population based cross sectional descriptive study carried out at Mullana.

Study area: This study was conducted in the field practice area of the Rural and Urban Health and Training Centre attached to MMIMSR, located at Mullana in Ambala District of Haryana.

Study population: Study population identified were those belonging to the age group of 20–80 years residing in the study area permanently at the time of the study. A maximum 407 subjects aged 21 years and above were enrolled in the study.

Study period: This study was carried out from July 2022 to September 2022.

Study tool

A standardised pretested structured questionnaire consisting of the socio demographic particulars, details regarding risk factors for non-communicable disease and measurements (height, weight, waist circumference and BP).

RESULTS

Among 407 subjects enrolled for the study, the minimum age was 21 years with the maximum of 80 years. The study found that majority of males and females belonging to age group of 51-60 (77.6%) years and 71-80 years (60.0%) respectively were suffering from non-communicable diseases. This association was found to be statistically significant ($p=0.0006$). The male subjects who studied up to middle school were among majority of sufferers (79.4%) however among females, the illiterate ones (57.1%) had higher incidence of non-communicable diseases. This association was found to be statistically significant ($p=0.0006$). The study found that majority of male farmers (78.7%) were suffering from non-communicable diseases and among females, majority of unemployed ones (56%) had higher incidence of the same. This association was found to be statistically significant ($p<=0.0001$) (Table 1).

Table 1. Sociodemographic profile of study participants				
Age category	Male (n=260)	Female (n=147)	Total	p = 0.0006
21-30	28(46.7%)	32(53.3%)	60	
31-40	57(64.0%)	32(36.0%)	89	
41-50	59(67.8%)	28(32.2%)	87	
51-60	76(77.6%)	22(22.4%)	98	
61-70	32(60.4%)	21(39.6%)	53	
71-80	8(40.0%)	12(60.0%)	20	
Residence				
Urban	145(60.7%)	94(39.3%)	239	p = 0.11
Rural	115(68.5%)	53(31.5%)	168	
Educational status				
Illiterate	12(42.9%)	16(57.1%)	28	p = 0.0006
Up to primary school	20(55.6%)	16(44.4%)	36	
Up to middle school	85(79.4%)	22(20.6%)	107	
Up to high school	82(61.2%)	52(38.8%)	134	
Higher secondary/ diploma	21(72.4%)	8(27.6%)	29	
Graduate and above	40(54.8%)	33(45.2%)	73	
Occupation of head of family				
Unemployed	28(43.8%)	36(56.3%)	64	p <= 0.0001
Agriculture/farmer	74(78.7%)	20(21.3%)	94	
Employee/on job	82(55.8%)	65(44.2%)	147	
Businessman/ shopkeeper	76(74.5%)	26(25.5%)	102	
Total monthly income in Indian Rs.				
<=10,001	58(64.4%)	32(35.6%)	90	p = 0.33
10,002-29,972	96(63.2%)	56(36.8%)	152	
29,973-49,961	58(59.8%)	39(40.2%)	97	
49,962-74,755	20(83.3%)	4(16.7%)	24	
74,755-99,930	8(66.7%)	4(33.3%)	12	
99,931-199,861	8(50.0%)	8(50.0%)	16	
>= 199,862	12(75.0%)	4(25.0%)	16	

Significant difference was observed in mean weight and BMI (Body Mass Index) among males and females respectively (Mean BMI: 25.13±3.009±SD kg/m² and 24.67±3.508kg/m², respectively for males and females). The mean systolic & diastolic blood pressure (mm of Hg) was found to be 125.21±12.311 and 81.31±7.263 among males while 124.88±12.401 and 81.28±7.542 among females respectively. The mean fasting blood glucose (mg%) was found to be 101.29±20.745. (Table 2)

Variables	Male (n=260)	Female (n=147)	Total (n=407)
Height (cm)	169.18±6.935	161.07±8.534	166.25±8.489
Weight (kilogram)	71.94±9.339	63.93±9.616	69.04±10.185
Waist circumference (cm)	90.57±23.913	90.21±23.765	
Hip circumference(cm)	91.97±13.789	92.96±16.356	
BMI(Kg/m2)	25.13±3.009	24.67±3.508	24.97±3.202
Systolic blood pressure (mm of hg)	125.21±12.311	124.30±12.580	124.88±12.401
Diastolic blood pressure (mm of hg)	81.31±7.263	81.22±8.046	81.28±7.542
Fasting blood glucose(mg%)	104.51±23.353	95.69±13.552	101.29±20.745

The analysis of baseline data is represented in Tables 3-5. Table 3 revealed that majority of respondents (53.1%) suffering from non-communicable diseases are doing low physical activity, out of which, males (55.8%) are found to be more physically inactive as compared to females (48.3%). The study also found that majority of respondents suffering from non-communicable diseases were having fewer sleeping hours (61.7%). Males (65.4%) were found to be sleeping less as compared to females (55.1%). Overweight is also found to be a prevalent risk factor among 52.6% of the respondents suffering from non-communicable diseases among which males (53.8%) are found to be more overweight as compared to females (50.3%).

Risk factor	Female (n=147)			Male (n=260)			Total		
	Frequency	Percent	CI	Frequency	Percent	CI	Frequency	Percent	CI
1. Low physical Activity	71	48.3	40.8-56.5	145	55.8	49.6-62.3	216	53.1	48.4-58.2
2. Consume Alcohol	12	8.2	4.1-12.9	96	36.9	31.2-43.1	108	26.5	22.1-31.4
3. Daily smoking	20	13.6	8.8-20.4	74	28.5	23.5-33.8	94	23.1	18.9-27.3
4. Junk food	41	27.9	20.4-35.4	62	23.8	18.8-29.6	103	25.3	20.9-29.7
5. Less sleeping hours	81	55.1	46.9-62.6	170	65.4	59.6-71.5	251	61.7	56.8-66.6
6. Overweight	74	50.3	42.2-58.5	140	53.8	48.1-60.6	214	52.6	47.9-57.2
7. Raised BP	32	21.8	15.6-29.3	56	21.5	16.9-26.5	88	21.6	17.7-25.8
8. Diabetes	25/143	17.5	11.7-24.3	77/248	31.1	25.2-36.8	102/381	26.7	22.3-31.1

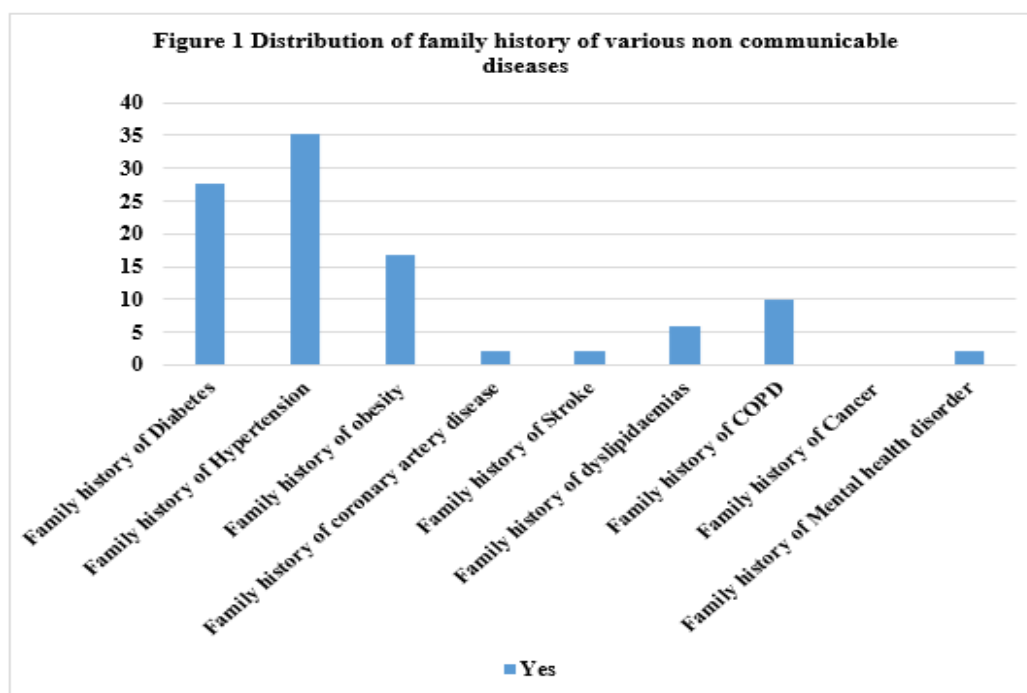
In total, 168 and 239 subjects were studied in rural and urban area respectively. Low physical activity was found to be present in majority of males (55.9%) in urban areas. Majority of males (62.8%) and females (59.6%) were found to be consuming junk food. Other risk factors found in urban areas include alcoholism, smoking, less sleeping hours, overweight, hypertension and diabetes.

Risk factor	Female			Male			Total		
	Frequency	Percent	CI	Frequency	Percent	CI	Frequency	Percent	CI
1. Low physical Activity	42	44.7	35.1-54.3	81	55.9	48.3-64.8	123	51.5	45.2-57.7
2. Consume Alcohol	12	12.8	6.4-20.2	33	22.8	15.9-29.7	45	18.8	14.2-23.8
3. Daily smoking	16	17.0	10.6-24.5	20	13.8	8.3-20.0	36	15.1	10.5-19.7
4. Junk food	56	59.6	50-69.1	91	62.8	54.5-71.0	147	61.5	55.2-67.8
5. Less sleeping hours	12	12.8	6.4-20.2	29	20.0	13.8-26.9	41	17.2	12.6-21.8
6. Overweight	42	44.6	32-59.6	75	51.7	38.6-64.8	117	49.0	39.7-57.7
7. Raised BP	16	17.0	9.6-24.5	28	19.3	13.1-25.5	44	18.4	13.4-23.8
8. Diabetes	12	12.8	6.4-20.2	45/141	31.4	24.3-39.1	57/235	24.2	18.5-29.4

In rural area, it was found that majority of males (55.7%) and females (54.7%) were having low physical activity. Majority of females were found to be consuming junk food (54.7%) and were overweight (60.3%). Majority of males were found to be having fewer sleeping hours (68.7%). Males in rural areas consume alcohol on majority basis (54.8%) as found in the study.

Risk factor	Female			Male			Total		
	Frequency	Percent	CI	Frequency	Percent	CI	Frequency	Percent	CI
1. Low physical Activity	29	54.7	41.5-67.9	64	55.7	46.1-65.2	93	55.4	47.6-63.1
2. Consume Alcohol	0	0	0	63	54.8	45.2-63.5	63	37.5	30.4-44.6
3. Daily smoking	4	7.5	1.9-15.1	54	47.0	38.3-55.7	58	34.5	27.4-41.7
4. Junk food	29	54.7	41.5-67.9	33	28.7	20.9-37.4	62	36.9	29.2-44.6
5. Less sleeping hours	25	47.2	34.0-60.4	79	68.7	60.0-76.5	104	61.9	54.8-69.6
6. Overweight	32	60.3	41.5-71.3	60	52.2	40.0-65.3	92	54.8	44.7-65.4
7. Raised BP	16	30.2	18.9-43.4	28	24.3	16.5-32.2	44	26.2	19.6-33.3
8. Diabetes	13/49	26.5	14.14-38.8	32/107	30.0	21.3-38.7	45/156	28.9	21.8-36.1

Figure 1 represents distribution of family history of various non communicable diseases. It was found that majority of the respondents were having family history of hypertension (57.7%), obesity (71.4%), coronary artery disease (84.2%), stroke (83.2%), dyslipidaemias (80.3%), COPD (75.4%), Cancer (85.2%) and Mental Health Disorders (81.3%).



DISCUSSION

The aim of the present study was to assess the various risk factors of NCD's in a rural and urban population of Ambala. The study found that majority of males and females belonging to age group of 51-60 (77.6%) years and 71-80 years (60.0%) respectively were suffering from non-communicable diseases. The male subjects who studied up to middle school were among majority of sufferers (79.4%) however among females, the illiterate ones (57.1%) had higher incidence of non-communicable diseases.

Significant difference was observed in mean weight and BMI (Body Mass Index) among males and females respectively. Similar results were found in a study conducted by Agrawal et al¹⁵. Majority of males (55.8%) were more physically inactive as compared to females. Study by Jain et al in Mangalore with a similar setting noted that adequate vigorous activity was done only by 25.6% subjects and adequate moderate activity was done by 66.3% subjects.⁸ The study found that males (53.8%) were more obese as compared to females, which is in line with the results obtained by Ankur Garg, et al (77.5%)⁹ and Shailendra Kumar et al (94.4%)¹⁰. In this study, among males there were more sufferers of hypertension as compared to females and similarly majority of males (63.6%) were known diabetic as compared to females. The findings of the present study corroborated with the findings of A Bhagyalaxmi et al (29%)¹¹. This may be attributed to the fact that majority of the participants in the present study were overweight and obese which are the risk factors for hypertension. Majority of males were consuming alcohol (36.9%) and smoking (28.5%) as compared to females. In a similar study, Ahmed S et al found that 20.3% of all the respondents were current smokers¹². Daily smoking was significantly higher among males as compared to females in our study. Smith DR et al had observed similar findings in their study¹³. Global Status report on alcohol and health 2014, released by the World Health Organization states that around 30% of the total population of India consumes alcohol. Alcohol consumption was significantly higher among the males as compared to females. Similar trend was observed by Ganesh K.S. et al¹⁴. In the study higher number of females

(27.9%) skip meals and consume junk food. Majority of males (65.4%) took daily sleep of less than 8 hours as compared to females.

CONCLUSION

The findings of study emphasize the need of community-based IEC (Information Education Communication) intervention along with the provision of comprehensive package health services so as to reduce the risk of NCDs. The population at risk of NCDs must be involved at all level of prevention through full community participation.

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