

Study of behavioural risk factors for non-communicable diseases among adults in north Indian city population: Retrospective study

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Abstract

Background: Non communicable disease (NCD) include Hypertension, Type-II Diabetes Mellitus, Cardiac diseases, Obesity and Alcoholism have common risk factors in India and globally as well. **Methodology:** 84 patients aged between 35 and 65 having NCD were studied. Each patient was subjected to Routine blood examination, Haemoglobin estimation, CBC, RBS, HbA_{1c}, Lipid profile and Blood pressure was recorded with sphygmomanometer. **Results:** 21 (25%) had obesity, 23 (27.3%) had Type-2 DM, 17 (20.2%) had Hypertension, 11 (13.0%) were tobacco chewers and 12 (14.2%) were alcoholic. In total cholesterol study (mg/dl) 23 (27.3%) had 207.2 to 208.2, 29 (34.5%) had 209.3 to 209.9 and 32 (38.0%) had 210.3 to 212.2 levels. In HDL cholesterol study (mg/dl) 29 (34.5%) had 39.8 to 41.2, 23 (27.3%) had 42.9 to 44.8, 32(38%) had 45.8 to 49.2 levels. In triglyceride (mg/dl) study 11 (13%) had 95.2 to 99.2, 32 (38%) had 114.9 to 120.2, 41 (48.8%) had 136.5 to 148. **Conclusion:** This pragmatic study will help to create awareness among general public and NCD patients about Obesity, HTN, DM and increased cholesterol levels and their risk factors so that risk of mortality and morbidity is reduced which is a quite common phenomenon in urban population.

Key Words: HTN = Hypertension, DM = Diabetes mellitus, NCD = Non communicable diseases, alcoholism, tobacco, sedentary life.

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Received Date: 05/12/2019 Revised Date: 12/01/2020 Accepted Date: 03/02/2020

DOI: <https://doi.org/10.26611/10111431>

Access this article online

Quick Response Code:	Website: www.medpulse.in
	Accessed Date: 02 June 2020

INTRODUCTION

Non Communicable diseases include Obesity, Cardiac diseases, Type-2 Diabetes Mellitus, Hypertension and Alcoholism etc. Death due to non-communicable diseases were 58 millions (60.5%) globally in 2005¹. In India death due to non-communicable diseases was 54% and 44% people could not lead normal healthy life due to being

frequently admitted to hospital and also dependent on medicines². As these non communicable disease (NCD) have high risk of mortality and morbidity³ WHO has recommended certain protocols to keep such patients healthy⁴. The steps include collection of information on 1- socio-demographic variables, behavioural risk factors like alcohol use, tobacco use, physical inactivity, diet and related factors; 2-obtaining measurements such as weight, height, waist circumference, blood pressure; 3-lipid profile, HDL cholesterol, blood glucose and triglycerides. By evaluating all three protocols of WHO we have studied the various Non-communicable Diseases (NCD) at different age and sex to evaluate the reason of NCD to create awareness, treatment and adequacy of control of type-II DM and HTN.

MATERIAL AND METHODS

84 patients aged between 35 and 65 years visiting a tertiary care hospital in North India were studied.

How to cite this article: Sumit Lathwal. Study of behavioural risk factors for non-communicable diseases among adults in north Indian city population: Retrospective study. *MedPulse International Journal of Community Medicine*. June 2020; 14(3): 39-42.

<https://www.medpulse.in/>

Inclusive criteria: Alcoholism, tobacco chewing, Hypertension (HTN), Obesity Type-2 Diabetes Mellitus (DM-2) were selected for study.

Exclusion Criteria: Patients with Pulmonary Tuberculosis, Skin diseases like Scabies etc, HIV, Viral Fever, Hepatitis A/B were excluded from the study.

Method: Every patient's history was recorded. Blood examination – Routine CBC, Hb%, RBS, HbA_{1c}, Lipid profile in obese, Blood pressure was recorded. Their physical activity, habits were also noted. The duration of study was Mar 2016 to Feb 2017.

Statistical analysis: The various non-communicable diseases were classified with percentages. The statistical analysis was done with SPSS 2007 software. The ratio of male and female was 2:1.

Ethical clearance taken from relevant Ethical Committee.

OBSERVATION AND RESULTS

Table-1 Clinical manifestations of non-communicable diseases- 21 (25%) were obese, 23 (27.3%) had type-2 DM, 17 (20.2%) had HTN, 11 (13%) were tobacco or Gutka chewers and 12 (14.2%) were alcoholic

Table-2 Study of blood pressure in Hypertensive (HTN) patients- 6 (35.2%) had systolic BP 130.2 and Diastolic BP 79.5, 9 (52.9%) had systolic 131.1 and Diastolic 80.5, 2 (11.7%) had systolic 129.2 and Diastolic 81.5 levels.

Table-3 Study of blood glucose in type-2 DM patients -5 (21.7%) had 85.9 to 91.2, 11 (47.8%) had 92.8 to 97.1, 7 (30.4%) had 98.2 to 111.2

Table-4 Study of lipid profile in non-communicable diseases- In the study of total cholesterol 23 (27.3%) had 207.2 to 208.2, 29 (34.5%) had 209.3 to 209.9, 32 (38%) had 210.3 to 212.2 levels. In HDL cholesterol – 29 (34.5%) had 39.8 to 41.2, 23 (27.3%) had 42.9 to 44.8, 32 (38%) had 45.8 to 49.2

In Triglyceride study – 11 (13%) had 95.2 to 99.2, 32 (38%) had 114.9 to 120.2, 41 (48.8%) had 136.5 to 148 levels.

Table 1: Clinical manifestation of Non-communicable diseases. (Total No. of Patients-84)

SI No	Clinical manifestation	No of patients(84)	No of patients(84) percentage
1	Obesity	21	25
2	Type-2 DM	23	27.3
3	HTN	17	20.2
4	Tobacco chewer	11	13.0
5	Alcoholic	12	14.2

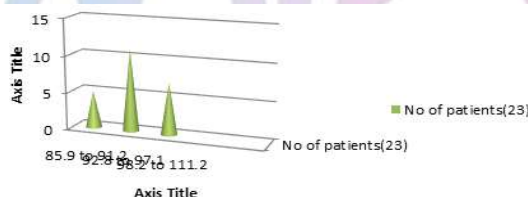


Figure 1: Clinical manifestation of Non-communicable diseases

Table 2: Study of blood pressure in HTN patients (Total No. of Patients-17)

SI No	HTN(Blood pressure)		No of patients(17)	No of patients(17) percentage
	Systolic (mmHg)	Diastolic (mmHg)		
1	130.2	79.5	6	35.2
2	131.1	80.5	9	52.9
3	129.2	81.5	2	11.7

Table 3: Study of blood glucose in type-2 DM patients, No of patients (Total No. of Patients-23)

SI No	Particulars	No of patients(23)	No of patients(23) percentage
1	85.9 to 91.2	5	21.7
2	92.8 to 97.1	11	47.8
3	98.2 to 111.2	7	30.4

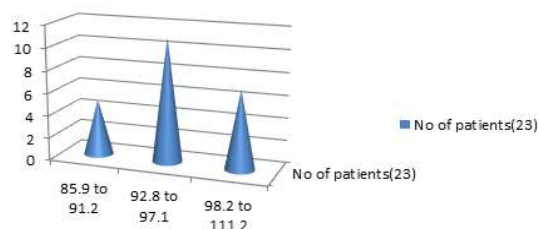


Figure 3: Study of blood glucose in type-2 DM patients

Table 4: Study of lipid profile

1	Total cholesterol (mg/dl)	No of patients(84)	No of patients(84) percentage
a	207.2 to 208.2	23	27.3
b	209.3 to 209.9	29	34.5
c	210.3 to 212.2	32	38.0
2	HDL cholesterol (mg/dl)	No of patients(84)	No of patients(84) percentage
a	39.8 to 41.2	29	34.5
b	42.9 to 44.8	23	27.3
c	45.8 to 49.2	32	38.0
3	Triglyceride	No of patients(84)	No of patients(84) percentage
a	95.2 to 99.2	11	13.0
b	114.9 to 120.2	32	38.0
c	136.5 to 148	41	48.8

DISCUSSION

In the present study Non-communicable diseases among adult population of North Indian city was studied. 21 (25%) were obese, 23 (27.3%) had type-2 DM, 17 (20.2%) had HTN, 11 (13%) were tobacco chewers and 12 (14.2%) were alcoholics (Table.1). The study of Blood pressure was among 17 (20.2%)- 6 (35.2%) had 130.2 mmHg systolic and 79.5(mmHg) diastolic, 9 (52.9%) had 131.1(mmHg) systolic and 80.5 diastolic (mmHg), 2 (11.7%) had 129.2 (mmHg) systolic and 81.5 diastolic (mmHg) (Table 2). In the study of blood glucose in type-2 DM 23 patients (27.3%)- 5(21.7%) had 85.9 to 91.2, 11(47.8%) had 92.8 to 97.1, 7 (30.4%) had 98.2 to 111.2 (Table-3). In the study of lipid profile – In total cholesterol study of (84 patients)- 23 (27.3%) had 207.2 to 208.2 (mg/dl), 29 (34.5%) had 209.3 to 209.9 (mg/dl), 32 (38%) had 210.3 to 212.2 (mg/dl). In HDL cholesterol (mg/dl) 29 (34.5%) had 39.8 to 41.2 (mg/dl), 23 (27.3%) had 42.9 to 44.8 (mg/dl) 32 (38%) had 45.8 to 49.2 (mg/dl). In triglyceride (mg/dl) 11 (13%) had 95.2 to 99.2 (mg/dl), 32 (38%) had 114.9 to 120.2, 41 (48.8%) had 136.5 to 148 (mg/dl) (table.4). These findings are more or less in agreement with previous studies^{5,6,7}. It was reported that, due to risk factors of NCD about 4.83 million premature deaths occurs globally. Long term abuse of alcohol may directly cause cirrhosis of liver, cancer of mouth, pharynx, GIT and increased risk of suicide and accident^{8,9}. Tobacco chewing leads to fibrosis of oral cavity, malignancy of upper part of GIT and Peptic ulcers too. Inactivity or sedentary life leads to obesity which leads to hyper lipidemia/dyslipidemia to Ischemic heart diseases (IHD),

Myocardial infarction (MI) and Chronic Heart Diseases (CHD)¹⁰. If obese population adapts to alcohol or tobacco chewing their inactivity or sedentary life will be enhanced and majority of sedentary patients are prone to Type-2 DM which affects micro vasculature and mainly affects cardio vascular system (CVS).¹¹ In Type-2 DM due to hyper glycaemia, viscosity of blood is increased and rate of flow of blood is retarded (decreased) which causes peripheral vasculitis or cardiac vessel vasculitis which may cause sudden death also. In many patients poor blood flow causes ischemia, gangrene, optic neuritis due to blockage of central artery of retina which may cause permanent blindness, lack of sleep, Dementia, paraesthesia are also major symptoms of DM. DM may lead to social withdrawal and loneliness, anxiety and depression also. Hence, NCD includes HTN, hypercholesteremia, stress, obesity, Type-2 DM, Cardiac Diseases, which ultimately leads to high mortality and morbidity. It is required to create awareness about the negative health effects of sedentary life, alcohol intake and tobacco chewing/smoking. If such individuals adopt healthy lifestyle including changing to healthy diet and exercising regularly it will lead to normal healthy life and Mortality and morbidity can be prevented/reduced.

SUMMARY AND CONCLUSION

The present study is on NCD's i.e. Obesity, Type-2 DM, HTN, Cardiac diseases and Alcoholism. A large scale awareness programme is required to educate the general public and also people suffering from Non-communicable diseases about these diseases and their risk factors.

Moreover central and state governments must ensure strict legislation to stop completely or minimize alcohol and tobacco use.

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Source of Support: None Declared
Conflict of Interest: None Declared

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