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Research Article

A CROSS SECTIONAL STUDY TO ASSESS PREVALENCE AND RISK FACTORS ASSOCIATE WITH NON-COMMUNICABLE DISEASE AFTER COVID 19 AMONG ADULTS OF NORTH INDIA

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ABSTRACT

Introduction: Over two-thirds (67%) of disease burden in India, measured by disability-adjusted life years (DALYs), is attributable to noncommunicable diseases (NCDs) and injuries.¹ The Indian state-level disease burden estimates suggest significant differences among states in the composition of disease burden. Globally, there was a significant correlation between healthy life expectancy (HALE), non-communicable disease DALYs and mortality, with COVID-19 caseload and deaths. **Aims:** the present study aim to assess Prevalence and risk factors associate with non-communicable disease after covid 19 among adults of North India. **Method:** A cross sectional study conducted in rural community area of Ambala district. **Results:** the results showed that 15% adults was diagnosed with NCD after the Covid 19 pandemic, due to dietary pattern, in activities and high stress level. **Conclusion:** Necessary preventive measure are important to reduce the NCD Prevalence

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INTRODUCTION

Over two-thirds (67%) of disease burden in India, measured by disability-adjusted life years (DALYs), is attributable to noncommunicable diseases (NCDs) and injuries.¹ The Indian state-level disease burden estimates suggest significant differences among states in the composition of disease burden. Globally, there was a significant correlation between healthy life expectancy (HALE), non-communicable disease DALYs and mortality, with COVID-19 caseload and deaths. Coronavirus disease 2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), is a major global crisis.

On March 11, 2020, the World Health Organization (WHO) declared COVID-19 a pandemic and it has become one of the deadliest pandemics in the last century. The burden of COVID-19 extends far beyond that of a contagious disease. COVID-19 affects the entire health system through its direct effect as a communicable disease, as well as its ability to alter the overall mortality and burden of disease through impact on non-communicable diseases.

Globally, non-communicable diseases, including cardiovascular disease, accounted for greater than 70% of all deaths in 2017. There is mounting evidence that COVID-19 and non-communicable diseases may be associated on multiple levels, resulting in potentially unexpected effects on health

outcomes. On one hand, COVID-19 is associated with cardiovascular diseases, such as acute cardiac injury (e.g. myocarditis), stroke, and exacerbation of subclinical vascular pathology. On the other hand, due to worldwide population ageing, many individuals may have multiple chronic medical conditions which can negatively impact the outcome of COVID-19 infection. A combination of frailty, ageing, and vascular comorbidities, together with COVID-19, represents a scenario that can exponentially increase hospitalization, intensive care unit admission, and hospital readmissions. This may explain the increased death rates in some countries, particularly among vulnerable patients with non-communicable diseases.

Govt of India report reported More than 9.5 million COVID-19 cases and 135,000 deaths have been reported in India towards end of November 2020. There is significant positive correlation of state-level COVID-19 cases and deaths per million, respectively, with NCD risk factors- obesity (0.64, 0.52), hypertension (0.28, 0.16), diabetes (0.66, 0.46), NCD epidemiological transition index (0.58, 0.54) and ischemic heart disease mortality (0.22, 0.33). analyses shows strong correlation of COVID-19 burden and deaths with NCD risk factors ($r^2 = 0.51, 0.43$), NCDs ($r^2 = 0.32, 0.16$) and healthcare ($r^2 = 0.52, 0.38$). the current study aim to assess Prevalence and risk factors associate with non-communicable disease after covid 19 among adults of North India.

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METHOD AND MATERIAL

Study design: A descriptive cross- sectional design

Study population: Population is the entire aggregate of cases that meet a designed set of criteria. The population in the study comprised of adults who are leaving in rural areas of adhoya, Mullana ,Ambala District.

Sample: adult male and female residing in rural population

Sample : 500

Inclusion Criteria

1. Adult age more than 30 years. 2. Willing to participate, present at the time of data collection

Data collection Data collection tools are the procedures or instruments used by the researcher to observe or measure the key variables in the research problem. The demographic data were collected using a structured baseline proforma prepared by the investigator. Prevalence identifies by family folder data and health Centre data. The risk assessment done by CBAC tool.

Statistical Analysis Data analysis is the systematic organization and synthesis of the research data and the testing of research hypothesis using the data. The data obtained would be analyzed using both descriptive and inferential statistics based on the objectives and hypotheses of the study.

RESULT

Frequency and percentage distribution of demographic characteristics

N=500

| S.no. | Demographic variable | Frequency | Percentage |
|-------|---------------------------|-----------|------------|
| 1. | Age(in years) | | |
| 1.1 | 31-40 | 235 | 47.% |
| 1.2 | 41-50 | 145 | 29% |
| 1.3 | 51-60 | 120 | 24.4% |
| 2. | Gender | 200 | 40.0% |
| 2.1 | Male | 300 | 60% |
| 2.2 | Female | | |
| 3. | Type Of Family | | |
| 3.1 | Joint family | 221 | 73.6% |
| 3.2 | Nuclear family | 79 | 26.4% |
| 4. | Religion | | |
| 4.1 | Hindu | 455 | 89% |
| 4.2 | Sikh | 40 | 8% |
| 4.3 | Muslim | 10 | 2% |
| 4.4 | Christian | 5 | 1% |
| 5. | Educational status | | |
| 5.1 | Primary | 155 | 31.3% |
| 5.2 | Secondary | 175 | 34.7% |
| 5.3 | Graduate | 80 | 15.7% |
| 5.4 | Illiterate | 90 | 18.3% |
| 6 | Occupation | | |
| 6.1 | Government job | 40 | 8% |
| 6.2 | Private job | 90 | 18% |
| 6.3 | Unemployed | 100 | 20% |
| 6.4 | House holder | 270 | 54% |
| 7 | Income | | |
| 7.1 | <1129 | 12 | 2.3% |
| 7.2 | 1130-2259 | 281 | 56.3% |
| 7.3 | 2260-4765 | 188 | 37.7% |
| 7.4 | More than 4766 | 19 | 3.7% |
| 8 | Place | | |
| 8.1 | Semi Urban | 15 | 3.3% |
| 8.2 | Rural | 480 | 96.7% |
| 9 | Dietary pattern | | |

| S.no. | Demographic variable | Frequency | Percentage |
|-------|------------------------------------|-----------|------------|
| 9.1 | Vegetarian | 396 | 79.3% |
| 9.2 | Non-vegetarian | 104 | 20.7% |
| 10 | Family History of NCD | | |
| 10.1 | Yes | 195 | 39% |
| 10.2 | No | 305 | 61% |
| 11 | History of NCD disease | | |
| 11.1 | Yes | 325 | 65% |
| 11.2 | No | 175 | 35% |
| 12 | Any surgery done | | |
| 12.1 | Yes | 60 | 12% |
| 12.2 | No | 440 | 88% |
| 13 | Any medication taking | | |
| 13.1 | Yes | 278 | 55.6% |
| 13.2 | No | 222 | 44.3% |
| 14. | Knowledge regarding NCD | | |
| 14.1 | Yes | 350 | 70.7% |
| 14.2 | No | 150 | 29.3% |
| 15. | Had history of covid 19 | | |
| 15.1 | Yes | 94 | 18.7% |
| 15.2 | No | 406 | 81.3% |
| 16. | Have you take covid vaccine | | |
| 16.1 | Yes | 480 | 96% |
| 16.2 | No | 20 | 4% |
| 17. | NCD identify after pandemic | 74 | 15% |

Frequency and percentage distribution of NCD risk score

N=500

| Sr.no | Level of risk | Range of score | frequency | Percentage |
|-------|---------------|----------------|-----------|------------|
| 1 | Low risk | 0-4 | 90 | 18 |
| 2 | Moderate risk | 5-7 | 65 | 13 |
| 3 | High risk | 8-10 | 345 | 69 |

Minimum score = 0 maximum score = 10

| Risk assessment question | Range | Cbac score | Frequency | Per centage | |
|--|-----------------------------|------------|-----------|-------------|-----|
| age | 30-39 | 0 | 143 | 47.7% | |
| | 40-49 | 1 | 87 | 29% | |
| | more than 50 | 2 | 70 | 23.3% | |
| do you smoke | never | 0 | 215 | 72 | |
| | used to consume in the past | 1 | 10 | 3 | |
| | daily | 2 | 75 | 25 | |
| do you consume alcohol | no | 0 | 221 | 74 | |
| | yes | 1 | 79 | 26 | |
| measurement of abdominal girth | Female <80 CM | male <90 | 179 | 121 | |
| | 80-90 CM | 90-100 CM | 89 | 58 | 147 |
| | | | 65 | 29 | 94 |
| | > 90 CM | <100 | 25 | 34 | 59 |
| physical activities for minimum of 150 min in a week | Yes | 0 | 67 | 23 | |
| | No | 1 | 233 | 77 | |
| family history of NCD | Yes | 2 | 137 | 45.6 | |
| | No | 0 | 163 | 54.4 | |

There is significant associate with alcohol consumption and abdominal girth measurement with selected demographic variables.

DISCUSSION

The current study has major public health implications with novel findings regarding the associations between COVID-19 and populations at risk, including the elderly and those with non-communicable diseases. These relationships are more evident in low-income countries, where we found the highest rate of COVID-19 cases and deaths per million when compared to other countries. Although non-communicable/cardiovascular disease DALYs were not independently associated with COVID-19 cases and deaths, the higher prevalence of non-communicable diseases among the elderly may play a major role in the burden of COVID-19.

In this study, showed that the risk factors like increasing waist circumference, any substance use in life, inability to contact with family while working at sea, poor dietary practice, advancing age, and lower socioeconomic status were significantly associated with NCDs.

CONCLUSION

prevalence of NCD is high day by day in situation both in urban and rural community. With the preventive measure and best policy halt the premature death and further complication. Early assessment and adherence of treatment is very necessary and change in life style and dietary pattern to prevent the NCD.

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