

## Original Research Article

# Perceptions and experiences of people living with non-communicable diseases during covid pandemic-a cross sectional study

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**Received:** 09 August 2022

**Revised:** 22 August 2022

**Accepted:** 24 August 2022

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## ABSTRACT

**Background:** COVID pandemic has been more challenging to people living with non-communicable diseases, (NCD) regarding availability of medicines, physician consultation etc. In the absence of effective public interventions, socioeconomically vulnerable groups are likely to develop complications. Diseases like cardiovascular diseases, chronic respiratory disease, cancers and diabetes, contribute to about 82% of all NCD deaths in India. Present study was conducted with aim to identify the challenges faced and perceptions in the management of NCDs during COVID pandemic.

**Methods:** A cross-sectional study was conducted between March to June 2022 by the department of community medicine, SVS medical college, Mahabubnagar. A pre-tested questionnaire was used on was used to collect data, which included demographic details of individuals and the information regarding their experiences and perceptions in the management of NCDs during the pandemic. The calculations were performed with SPSS program, version 23.

**Results:** In the present study it was found that about 37.5% had decrease in the physical activity, 43.8% changed their dietary habits, 45.2% population has gained weight and 41.4% had increase in stress, anxiety and sleeping disorder during the pandemic.

**Conclusions:** In the present study it was found that majority had change in the lifestyle behaviors, Challenges faced included non-availability of bed in the hospital and non-availability of medication. Half of the participants received guidance from the healthcare professionals.

**Keywords:** COVID-19 pandemic, NCD, Challenges, Perception

## INTRODUCTION

The coronavirus disease 2019 (COVID-19), caused by SARS-CoV-2, has been a public emergency around the globe that has created a chaos among the general public. It has claimed 121,641 lives and infected over 8 million people in India as on 1 November 2020.<sup>1</sup> Most people of consideration during pandemic were high-risk groups, among which, people suffering from NCDs were on the list. NCDs are health conditions that cannot be transmitted from one patient to another, and usually manifest a prolonged, persistent, and slow pathology.<sup>2</sup>

NCDs kill around 41 million people per year which equalizes to around 71% of fall deaths globally. In India around 5.87million people die per year with NCDs that account 60% of total deaths.<sup>3</sup> NCDs contribute to around 38 million (68%) of all the deaths globally and to about 5.87 million (60%) of all deaths in India. Four NCDs mainly responsible for the total NCD mortality and morbidity are cardiovascular diseases, chronic respiratory disease, cancers and diabetes, contributing to about 82% of all NCD deaths (World health organization-WHO, 2014).<sup>4</sup> During the COVID-19 pandemic, it has become more challenging for them and other people living with

NCDs around the globe to manage their health due to restrictions in movement, disruption to health services, as well as fear of seeking treatment due to the risk of contracting COVID-19.<sup>5</sup>

The challenges they faced due to restricted mobility included difficulties in carrying out regular medical checkups, fetching an appointment with consultants, lack of access to medication, daycare procedures etc. An aggressive exploration is required to find out the experiences of people living with NCDs during the COVID time in the management of NCDs. In the absence of effective public interventions, socioeconomically vulnerable group are likely to become non-adherent to treatment and develop complications. This descriptive cross-sectional study is an attempt to explore the individual's perceptions and experiences in the management of NCDs during the hardship of COVID pandemic and come up with effective interventions to ease up the challenges faced by general public.

### **Objectives**

Objectives were to explore sociodemographic of population living with NCD, to identify the challenges faced in the management of NCDs among the general public during covid pandemic and to explore the perceptions and experiences of general public regarding the management of NCD during COVID pandemic.

### **METHOD**

Present descriptive cross-sectional study was conducted between March to June 2022 (4 months duration) by the department of community medicine, SVS medical college, Mahabubnagar, Telangana, India. Institutional ethics committee clearance was obtained prior to start of the study. Study was conducted in urban filed practice area of Mahabubnagar town. Informed consent was obtained from participants prior to study.

A pre designed, pretested, semi structured questionnaire used to collect data. Questionnaire included demographic details of individuals and information regarding their experiences and perceptions in the management of NCDs during the COVID pandemic. The questionnaire had 15 multiple-choice questions/ structured questions and 5 questions based on 5-point Likert scale.

According to current available literature, the prevalence of NCDs is around 30%. Sample size is calculated with the precision/absolute error of 5% and at type 1 error of 5%. As per  $N = z^2 p * q / E^2$  formula sample size was 336.

The study population was selected by cluster random sampling followed by systematic random sampling method. There was total 41 wards in town which were divided into 4 clusters with 10 wards each. Using systematic random sampling method every 3<sup>rd</sup> house was

selected to achieve a sample of 85 from each cluster, to finally attain a sample of 336 from all the 4 clusters.

Staff and volunteer students from final year part one was trained for survey. All participants were given health education regarding the various ways to overcome the challenges faced by them during the pandemic. The participants were given information regarding the various emergency helpline numbers like the contact details of various nearest available health service centres. The participants were advised to keep note of their regular physician contact details.

Collected data was entered systematically in MS excel software. Test of significance was considered at  $p < 0.05$  Man Whitney test was used to test the significance and data was analysed using IBM SPSS 23 software.

### **Inclusion criteria**

People suffering with any one of the NCDs diseases like diabetes mellitus, hypertension, cardiovascular diseases, congestive heart failure, obesity and people who were willing to participate in study were included in the study.

### **Exclusion criteria**

People with NCDs like rheumatic heart disease, cancer, oral diseases, accidents and injuries, stroke and people who were not willing to participate and who were not available during the study were excluded from the study.

### **RESULTS**

A total 1287 population interviewed, 336 people were suffering from NCDs. Among them majority belong to the age group of 41 years to 50 years (45.5%), majority were females (66.4%) and majority of them were literates (91.8%). Most of them were private employees (54.8%) and residing in urban areas (99.1%). Most of them belong to nuclear families (58%), around half of the population (44.3%) belong to upper class. Addiction to alcohol is seen in 23.8% of the population, while smoking is among 7.7% of the study population. Other addictions like tobacco chewing are seen among 1.4% of the study population (Table 1).

Among NCD majority of the population (47.3%) were obese, followed by hypertension and diabetes mellitus seen in 40.2% and 19.3% of the population respectively. Only 6% population were suffering from cardiovascular diseases (Table 2).

Regarding impact of COVID pandemic on lifestyle, about 37.5% had decrease in the physical activity, 43.8% changed their dietary habits and 45.2% population has gained weight. Almost 41.4% claimed that they have experienced increase in stress, anxiety and sleeping disorder during the pandemic (Table 3).

Nearly 32.4% of the study population were infected with COVID of which 12.2% of people required hospitalization. Most of population (96.5%) vaccinated for COVID of which 79.3% of people were completely vaccinated with 2 doses of vaccine. 29.2% of the study population unemployed during pandemic. Only 35.4% of the population suffering from NCD could get access to regular health check-up. Around 17.9% experienced delay in health care and 5.1% faced non availability of bed in the hospital. About 25.9% of the faced non availability of medication of which 15.5% discontinued treatment and 10.4% change in treatment. A considerable proportion of population 51.5% of study population received guidance from their consultants and 27.7% able to perform self-check-up of RBS/ BP/ saturation. The 12.2% of population faced emergency situation during pandemic, 80.5% of population stated that their health status improved. On whole about 47.9% of population managed to overcome challenges (Table 4 and 5).

**Table 1: Descriptive statistics of the socio-demographic parameters.**

Variables	Frequency, (n=336)	Percentage (%)
<b>Age (Years)</b>		
21-30	20	6
31-40	52	15.5
41-50	111	33
51 and above	153	45.5
<b>Gender</b>		
Male	113	33.6
Female	223	66.4
<b>Occupation</b>		
Unemployed	30	9
Employed	279	83
Student	27	8
<b>Type of family</b>		
Nuclear	195	58
Joint	53	15.8
3 generation	88	26.2
<b>Socioeconomic status</b>		
Upper	149	44.3
Middle	130	38.7
Lower	57	17
<b>Addictions*</b>		
Alcohol	219	65.2
Smoking	210	62.5

\*Few had multiple addictions

**Table 2: Prevalence of NCD.**

NCD*	Frequency, (n= 336*)	Percentage (%)
<b>Diabetes</b>	65	19.3
<b>Hypertension</b>	135	40.2
<b>CVD</b>	20	6
<b>Obesity</b>	159	47.3

\*People are suffering from more than one NCD.

**Table 3: Impact of COVID pandemic on lifestyle.**

Lifestyle*	Frequency	Percentage (%)
<b>Decrease in physical activity</b>	126	37.5
<b>Changed their dietary habits</b>	147	43.8
<b>Gained weight</b>	152	45.2
<b>Increase in stress/ anxiety/ sleeping disorder.</b>	139	41.4

\* Impact on multiple aspects.

**Table 4: Experiences and challenges of people living with NCD during COVID pandemic.**

Variables	Frequency	Percentage (%)
<b>Experiences*</b>		
Infected with COVID	126	37.5
Required hospitalization	41	12.2
Vaccinated for COVID	324	96.4
Completely vaccinated for 2 doses	266	79.2
Unemployed during pandemic	98	29.2
<b>Challenges faced*</b>		
Access to regular health check-up	119	35.4
Difficulty/ Delay in reaching to hospitals	60	17.9
Non availability of bed in hospital	17	5.1
Non availability of medicines for NCDs	87	25.9
Discontinued treatment	52	15.5
Had change in treatment	35	10.4
Received guidance from consultants	173	51.5
Faced emergency situation during the pandemic	41	12.2
<b>Strategies used</b>		
Used teleconsultation facility	114	34
Self-monitoring of B.P., PR, SpO <sub>2</sub> , RBS**	93	27.7
Usage of health apps	20	6

\*Multiple challenges and experiences were faced by the people, \*\*B.P.-Blood pressure, P. R.-Pulse rate, RBS-Random blood sugar, SpO<sub>2</sub>-Saturated oxygen

## DISCUSSION

COVID-19 pandemic has significantly affected the health care opportunities for every individual specifically those with chronic health conditions. Physical and social distancing, restrictions in transportations, non-availability of medicines etc, also contributed for inferior

management of NCD risk factors. In study total 1287 population interviewed, 336 people were suffering from one or other NCD. Among them majority belong to the age group of 41 years to 50 years (45.5%), majority were females (66.8%). Similar findings were observed in a study conducted by Gummidi where females were in majority. Similar findings were observed in a study conducted by Ratna et al where two-thirds (66.4%) were females. This could be due to availability of females, mostly home makers at homes, during survey.<sup>1,9</sup>

Among the study population majority of them (47.3%) were obese, followed by hypertension and diabetes mellitus seen in 40.2% and 19.3% of the population respectively. Only 6% population were suffering from cardiovascular diseases. Slightly different findings were seen in a study conducted by Sahoo where the major NCD conditions observed were CVD 58%, diabetes 51%, chronic renal disease and cancers with 10% each.<sup>7</sup> Different findings were observed in a study done by Varanasi, where hypertension alone seen in (27.5%) and diabetes with hypertension seen in (33%) were the major NCDs.<sup>8</sup> These differences may be due to different study area, population and settings.

Regarding impact of COVID pandemic on lifestyle, about 37.5% had decrease in the physical activity, 43.8% changed their dietary habits and 45.2% population has gained weight. Similar findings were seen in a study conducted Ratna et al where almost half of respondents (47.1%) reported that exercise and physical activity had decreased, while half (49.8%) stated that there had been no change in consumption of healthy food.<sup>9</sup>

Increased dependence on processed foods due to lack of availability and constraints to physical activities could be the reason for change in dietary pattern and weight gain. Almost 41.4% claimed that they have experienced increase in stress, anxiety and sleeping disorder during the pandemic. Similar findings were seen in a study conducted by Ratna et al majority (61.5% and 50.1%) reported increase in stress and isolation respectively.<sup>9</sup>

Lack of social contact, and fear of contracting disease, economic crisis may be the reason for increase in anxiety and depression. Majority population reported that there was no change in habits of smoking and tobacco chewing but there is decrease in alcohol consumption. Same findings were seen in a study conducted by Ratna et al where no change in behaviours like smoking, alcohol was seen.<sup>9</sup> Decrease in alcohol consumption may be due to non-availability due many restrictions.

Nearly 32.4% of the study population were infected with COVID of which 12.2% of the people required hospitalization. Different findings were seen in a study conducted by Ratna et al where 5% respondents were infected with COVID, half of them noted worsening of chronic condition since being infected with COVID-19, 43.8% reported no change, and 6.3% said their condition

was better.<sup>9</sup> Most of the population (96.5%) were vaccinated for COVID of which 79.2% of people were vaccinated with 2 doses of vaccine. About 29.2% of the study population were unemployed during pandemic. Similar findings were seen in a study conducted by Narayan et al where socioeconomically deprived individuals who were dependent on daily wages have lost their jobs.<sup>10</sup> Loss of source of earning is the main cause for loss of follow up in persons suffering from NCDs.

Study shows that only 35.4% of the study population suffering from NCDs could get access to regular health check-up. Around 17.9% experienced delay in health care and 5.1% faced non availability of bed in the hospital. Similar findings were seen in a study conducted by Sahoo et al where nearly two-thirds of study population encountered difficulties in routine investigations and reaching hospitals and day-care procedures like dialysis.<sup>7</sup> About half of participants had constraints in getting doctor appointments, emergency treatment and delay in health care. About 25.9% of the faced non availability of medication of which 15.5% discontinued treatment and 10.4% had change in treatment. Similar findings were seen in a study conducted by Gummidi et al where 13.4% faced challenges in procuring medicines.<sup>1</sup>

A considerable proportion of population 51.5% of the study population received guidance from their consultants. Similar findings were seen in a study conducted by Sahoo et al where most respondents (63%) reported that they had visited a health care professional either in person or through tele health.<sup>7</sup> Similar findings were seen in a study conducted by Thakur, where challenges faced by majority during pandemic were procuring medicines, getting lab investigations done.<sup>2</sup>

Strategies to combat challenges like utilising teleconsultation, self-monitoring of RBS/BP/saturation usage of certain health apps, was seen in 34%, 27.7% and 6% participants respectively. About 12.2% of the population had faced emergency situation during pandemic. On the whole about 47.9% of the population managed to overcome the challenges. Similar findings were seen in a study conducted by Sahoo et al, fewer than 10% had been hospitalized (visited an emergency department or admitted to a hospital) to manage their NCD, during the COVID-19 pandemic.<sup>7</sup>

Study has few limitations like time duration of the study was limited. The study was conducted in only one area of one district, in that only few age groups and particularly females were available at the time of survey, that is why these findings may not be generalized to general population.

## CONCLUSION

The Study revealed that pandemic had great impact on the lifestyle factors like decrease in physical activity, change in dietary patterns, weight gain, there was

increase in anxiety, stress and sleep disturbance and loss of source of earning during pandemic. The challenges faced included difficulty in accessing regular health check-ups, delay in health care and non-availability of bed in the hospital, non-availability of medication, which led to discontinuation of treatment and change in treatment. On the whole only half of the participants managed to overcome the challenges. Similar study can be done in similar or different areas. Health education through mass media and social media regarding adopting healthy lifestyle behaviours. Utilising telemedicine/teleconsultation facility and certain apps for tracking and maintaining the vital measurements.

## ACKNOWLEDGEMENTS

Authors would like to thanks to SVS MC management, all the supporting staff of field practice area, student volunteers, medical social workers, all the participants and their family members for their co-operation.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: The study was approved by the Institutional Ethics Committee*

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**Cite this article as:** Joshi KP, Bindu MH, Jamadar D, Reddy MN, Reddy SC. Perceptions and experiences of people living with non-communicable diseases during covid pandemic-a cross sectional study. *Int J Community Med Public Health* 2022;9:3445-9.