

# Psychiatric morbidity among the patients with non-communicable diseases

Sharanabasappa Algoodkar<sup>1</sup>, Sharath Vishwaraj<sup>2\*</sup>

<sup>1</sup>Associate Professor, Department of Psychiatry, Sapthagiri Institute of Medical Sciences and Research Centre, Chikkabanavara, Bengaluru, Karnataka, INDIA.

<sup>2</sup>Assistant Professor, Department of Psychiatry, Rajarajeswari Medical College and Hospital, Bangalore, Karnataka, INDIA.

Email: [sharathvishwaraj@gmail.com](mailto:sharathvishwaraj@gmail.com)

## Abstract

**Background:** Noncommunicable diseases (NCDs), also known as chronic diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behavioral factors. Every year, about 15 million people die from a NCDs between the ages of 30 and 69 years; over 85 p.c of these "premature" deaths occur in low- and middle-income countries. According to World Health Organization (WHO) projections, the total annual number of deaths from NCDs will increase to 55 million by 2030, if timely interventions are not done for prevention and control of NCDs. In India, nearly 5.8 million people (WHO report, 2015) die from NCDs (heart and lung diseases, stroke, cancer and diabetes) every year or in other words 1 in 4 Indians has a risk of dying from an NCD before they reach the age of 70 years. Psychiatric morbidities are more prevalent among people with NCDs. **Aim and Objectives:** To study the prevalence of psychiatric morbidity among in-patients with non-communicable disease and their association. Also, to study the association between sociodemographic factors and psychiatric morbidity. **Material and Methods:** A hospital based, analytical cross-sectional study was conducted at a tertiary care center in Bengaluru, Karnataka for a period of 3 months from 1<sup>st</sup> August 2019 to 31<sup>st</sup> October 2019. The study subjects included patients who gave written consent to participate in the study and aged  $\geq 18$  years to  $\leq 60$  years of age with NCD admitted for more than or equal to three days in the department of general medicine during the study period. Prior to the initiation of the study, ethical clearance and written consent were obtained. The study subjects included patients with NCD aged equal to or above 18 years to 60 years admitted for  $\geq 3$  days in the department of general medicine during the study period. Patients were assessed for psychiatric co-morbidities using Structured Clinical Interview for DSM-IV Axis-1 diagnosis (SCID-1). **Results:** In the present study, out of 200 patients with NCDs, 50 (25%) reported poor QOL and 6 (3%) reported very poor QOL, among them 37(18.5%) had DM, 29(14.5%) had HTN and 21(10.5%) had both DM and HTN. **Conclusion:** Psychiatric morbidity was highest in the old age group. Psychiatric morbidity were common among people with NCDs.

**Keywords:** Non-Communicable Diseases (NCDs), Psychiatric morbidity.

## \*Address for Correspondence:

Dr Sharath Vishwaraj, Assistant Professor, Department of Psychiatry, Rajarajeswari Medical College and Hospital, Bangalore, Karnataka, INDIA.

Email: [sharathvishwaraj@gmail.com](mailto:sharathvishwaraj@gmail.com)

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## INTRODUCTION

Noncommunicable diseases (NCDs), also known as chronic diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behavioral factors. The main types of NCDs include cardiovascular diseases (like heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma) and diabetes.<sup>1</sup> Every year, about 15 million people die from a NCDs between the ages of 30 and 69 years; over 85 p.c of these "premature" deaths occur in low- and middle-income countries.<sup>1</sup> According to World Health Organization (WHO) projections, the total annual number of deaths from

NCDs will increase to 55 million by 2030, if timely interventions are not done for prevention and control of NCDs.<sup>2</sup> In India, nearly 5.8 million people (WHO report, 2015) die from NCDs (heart and lung diseases, stroke, cancer and diabetes) every year or in other words 1 in 4 Indians has a risk of dying from an NCD before they reach the age of 70 years.<sup>2</sup> In a report “India: Health of the Nation’s States” by Ministry of Health and Family Welfare (MOHFW), Government of India (GOI), it was reported that there is increase in the contribution of NCDs from 30 p.c of ‘disability-adjusted life years’ (DALYs) in 1990 to 55 p.c in 2016 and also an increase in deaths due to NCDs (among all deaths) from 37 p.c in 1990 to 61 p.c in 2016, which shows a rapid epidemiological transition.<sup>2</sup> The leading NCD risk factor globally is increased blood pressure (to which 13% of global deaths are attributed), followed by tobacco usage (9%), increased blood glucose (6%), physical inactivity (6%) and overweight and obesity (5%).<sup>3</sup> In India during 2017, NCDs comprised 46.6 p.c of DALYs overall, which increased to 55 p.c in urban areas.<sup>4</sup> In India on mental and behavioral disorders report varying prevalence rates, ranging from 9.5 to 370 per 1000 population.<sup>5</sup> A couple of studies were conducted in institutional and hospital settings where prevalence of psychiatric morbidity in older adults was found to be 49.28 p.c and 8.6 p.c in the geriatric population.<sup>6,7,8</sup>

#### AIM AND OBJECTIVES

1. To study the prevalence of psychiatric morbidity among in-patients with non-communicable disease.
2. To study the association between NCDs and psychiatric morbidity.
3. To study the association between sociodemographic factors and psychiatric morbidity.

#### MATERIAL AND METHODS

A hospital based, analytical cross-sectional study was conducted at a tertiary care center in Bengaluru, Karnataka for a period of 3 months from 1st August 2019 to 31st October 2019. Prior to the study initiation, an ethical clearance was obtained from the Institutional Ethics Committee. The study subjects included patients who gave written consent to participate in the study and aged  $\geq 18$  years to  $\leq 60$  years of age with NCD admitted for more than or equal to three days in the department of general medicine during the study period. Patients who had co-

morbid infectious disease condition and who were with severe medical illness requiring an intensive care admission were excluded from the study. A study sample of two hundred patients were included in the study. The socio-demographic data of these patients was collected by a semi-structured questionnaire. Patients were assessed for psychiatric co-morbidities using Structured Clinical Interview for DSM-IV Axis-1 diagnosis (SCID-1). The collected data was entered in Microsoft excel-2013 and analyzed using SPSS version-22 (trial). Data was presented in percentages, tables and figures. Appropriate statistical tests were used where necessary.

#### RESULTS

In the present study a total number of 200 patients with NCDs were admitted in the Department of General Medicine ward. About 59.5% (119) were males and 40.5% (81) were females. Majority 52% (104) were residing in rural area followed by 48% (96) residing in urban areas. In figure-1 the distribution of patients based on NCDs reports that majority 31.5% (63) of the patients had Diabetes Mellitus (DM) followed by 26.5% (53) of the patients had cardiovascular diseases like hypertension (HTN) and stroke, 27% (54) had both DM and HTN, 8.5% (17) had Chronic Obstructive Pulmonary Disease (COPD) and 6.5% (13) had other NCD’s like thyroid disorders, chronic kidney disease, rheumatoid arthritis and other endocrine disorders. In figure-2 the distribution of patients based on psychiatric morbidity, majority 26.5% (53) of patients had no psychiatric disorder followed by 24.5% (49) of patients had nicotine abuse and nicotine dependence syndrome (NDS), 12.5% (25) of patients had dysthymia and major depressive disorder (MDD), 10% (20) of patients had depressive due to general medical condition, 9.5% (19) of patients had alcohol abuse and alcohol dependence syndrome (ADS), 8% (16) of patients had NDS and ADS, 5% (10) of patients had anxiety due to general medical condition, 2.5% (5) of patients had anxiety disorders (panic and GAD), 1% (2) of patients had depression and SDS and 0.5% (1) of patients had persistent delusional disorder. Table-1 reports the association between NCDs and psychiatric morbidity, there exists a statistically significant association between NCDs and psychiatric morbidity. Table-2 reports the association between sociodemographic factors of patients and psychiatric morbidity, age and gender, family income of the patients had a statistically significant association with psychiatric morbidities.

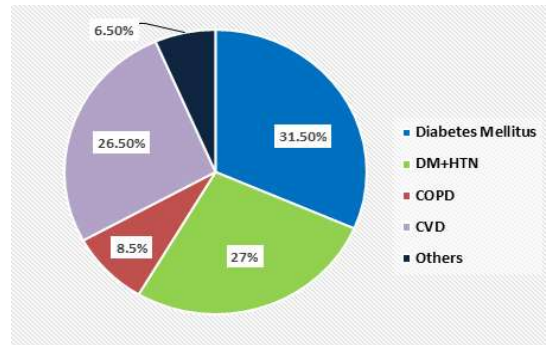


FIGURE 1: DISTRIBUTION OF PATIENTS ACCORDING TO NCDs

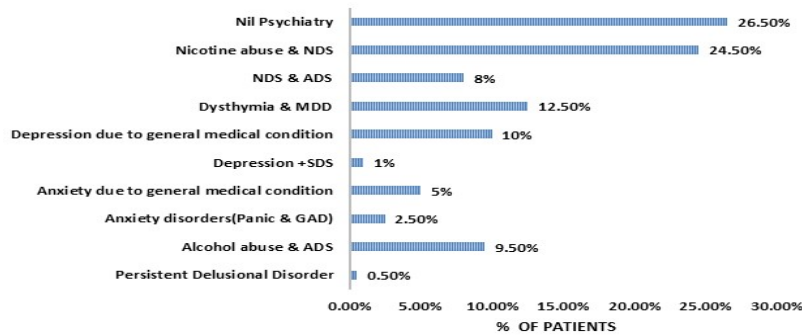


FIGURE 2: DISTRIBUTION OF PATIENTS BASED ON TO PSYCHIATRIC MORBIDITY

TABLE 1: ASSOCIATION BETWEEN NCDs and PSYCHIATRIC MORBIDITY

Psychiatric morbidity	CVD	COPD	DM	DM+HTN	Others	Total	χ <sup>2</sup>	p-value
Persistent delusion disorder	0	0	1	0	0	1	76.474	0.001
Alcohol abuse and ADS	5	1	7	5	1	19		
Anxiety disorders	0	2	2	1	0	5		
Anxiety due to general medical condition	5	1	2	2	0	10		
Depression due to substance abuse	0	1	1	0	0	2		
Depression due to general medical condition	2	0	7	6	5	20		
Dysthymia and MDD	3	1	5	14	2	25		
NDS and ADS	6	2	4	4	0	16		
Nicotine abuse and NDS	18	7	5	18	1	49		
Nil Psychiatry	14	1	28	6	4	53		

TABLE-2: ASSOCIATION BETWEEN SOCIO-DEMOGRAPHIC FACTORS and PSYCHIATRIC MORBIDITY

SOCIODEMOGRAPHIC FACTORS		Col-1	Col-2	Col-3	Col-4	Col-5	Col-6	Col-7	Col-8	Col-9	Col-10	TOTAL	χ <sup>2</sup>	p-value
Age	18-30	0	0	1	1	0	2	0	1	1	8	14	40.202	0.049
	31-40	0	3	0	0	0	6	4	5	5	7	30		
	41-50	1	3	1	3	0	7	5	4	8	12	44		
	51-60	0	13	3	6	2	5	16	6	35	26	112		
Gender	Male	0	17	3	4	2	7	13	15	34	23	118	36.859	0.001
	Female	1	2	2	6	0	13	12	1	15	30	82		
Years of Education	0	0	6	3	2	0	2	8	3	18	7	49	129.85	0.196
	1	0	0	0	0	0	0	0	1	1	0	2		
	2	0	1	0	1	0	0	1	1	4	4	12		
	3	0	0	0	3	0	2	1	3	9	5	23		
	4	0	2	0	1	0	0	2	1	6	3	15		

	5	0	0	0	0	0	0	0	0	3	4	7		
	6	0	2	1	1	0	1	1	0	2	5	13		
	7	0	2	0	0	2	3	2	5	2	2	18		
	8	0	3	1	1	0	4	2	0	2	8	21		
	9	0	0	0	0	0	0	1	0	0	2	3		
	10	1	3	0	1	0	5	4	2	1	3	20		
	11	0	0	0	0	0	0	0	0	0	1	1		
	12	0	0	0	0	0	2	3	0	1	6	12		
	15	0	0	0	0	0	1	0	0	0	3	4		
	Business	0	1	0	0	0	1	0	0	6	8	16		
	Clerical	0	0	0	0	0	1	2	0	1	2	6		
	Farmer	0	5	1	2	0	5	6	5	12	10	46		
	Housewife	1	0	0	1	0	4	4	0	8	15	33		
Occupation	Professional	0	0	0	0	0	0	0	0	0	1	1		
	Semiskilled	0	3	2	1	0	5	2	2	1	7	23	87.54	0.29
	Skilled	0	3	0	0	1	0	2	4	6	1	17		
	Student	0	0	0	0	0	0	0	0	0	1	1		
	Unemployed	0	2	0	2	0	1	4	0	10	3	22		
	Unskilled	0	5	2	4	1	3	5	5	5	5	35		
	≤ 5000	0	6	0	4	0	2	7	8	14	7	48		
Family Income	5001-10000	0	9	4	6	2	10	13	7	34	22	107	64.098	0.001
	10001-20000	1	4	1	0	0	8	5	1	1	19	40		
	>20000	0	0	0	0	0	0	0	0	0	5	5		

\*Col-1: Persistent Delusional Disorder; Col-2: Alcohol abuse and ADS; Col-3: Anxiety disorders (Panic and GAD); Col-4: Anxiety due to general medical condition; Col-5: Depression +SDS; Col-6: Depression due to general medical condition; Col-7: Dysthymia and MDD; Col-8: NDS and ADS; Col-9: Nicotine abuse and NDS; Col-10: Nil Psychiatry

## DISCUSSION

Globally NCDs are the leading causes of death, killing more people each year than all other causes combined. In the present study out of 200 patients with NCDs, 59.5 p.c (119) were males and 40.5 p.c (81) females. This is comparable to the study done by Kulkarni *et al.*<sup>9</sup> who reported 56% males and 44% females. The current study was done with a view to study the psychiatric morbidity using Structured Clinical Interview for DSM-IV Axis-I diagnosis (SCID-1) in NCD patients admitted in tertiary care hospital. In the present study about 147 patients i.e., 73.5 p.c suffered from one diagnosable psychiatric illness which was comparable to the findings of Kulkarni *et al.*<sup>9</sup> who reported a prevalence of 83.3 p.c, but more than the prevalence rate of 53.3% reported by Abhay *et al.*<sup>10</sup> In 118 patients with DM, 37.2 p.c (44) patients reported substance use disorders, 5.9 p.c (7) patients reported anxiety spectrum disorder and 27.9 p.c (33) patients reported depressive disorders which was comparable to the findings of Asghar *et al.*<sup>11</sup> study, who concluded that 29 p.c of male and 30.5 p.c of female patients were with diabetes had depressive symptoms. A significant association was found between Age, Gender and Family income with psychiatric morbidity in the present study which was comparable to studies of Kulkarni *et a.*<sup>9</sup>

## CONCLUSION

Among the patients with NCDs, Substance use disorders were highly prevalent of which nicotine abuse and dependence was the most common. Depressive disorders were the second most common followed by anxiety disorders, among these, dysthymia and depression/anxiety due to general medical condition. Psychiatric morbidity was highest in the old age group (51-60 years).

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