Original Research Article

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Screening for various non-communicable diseases: a community based multi-diagnostic mega camp approach study from Raichur, Karnataka

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ABSTRACT

Background: The 77% of all non-communicable illnesses (NCDs) deaths are in low-and middle-income countries. Cardiovascular diseases account for most NCD deaths, or 17.9 million people annually, followed by cancers (9.3 million), respiratory diseases (4.1 million), and diabetes (1.5 million). These 4 groups of diseases account for over 80% of all premature NCD deaths. Objective was to study prevalence of NCDs and its trends with respect to age and gender. Methods: The present community based descriptive observational study was conducted at Navodaya medical college hospital and research centre, Raichur that caters Urban and rural area of Raichur. The 4063 apparently healthy population from urban and rural part of Raichur were screened during the multi diagnostic mega camp at urban and rural areas around Raichur during the period of January to September 2021.

Results: Prevalence of diabetes in our study was 46.3%, hypertension 45.3%, cataract 46.3% and COPD as 20.7%. Prevalence of diabetes was more in 41-60 years i.e., 41.6%. Prevalence of hypertension was more in 41-50 years i.e., 25.3%. Prevalence of diabetes was more in males i.e., 54.1%. Prevalence of hypertension was more in males i.e., 50.8%. Conclusions: Prevalence of all NCDs was more in above 40 years and more in males except COPD.

Keywords: Non communicable diseases, Prevalence, Multi diagnostic mega camp, Screening

INTRODUCTION

Noncommunicable diseases (NSDs) are our modern epidemics. They are the major contributor of mortality all over the world. Heart disease, stroke, cancer, diabetes and chronic lung disease are some important NCDs responsible for almost 70% of all deaths worldwide. Majority of the deaths occur in in low- and middle-income countries. It is characterised by long latent period, indefinite onset and slow progress of the disease. The epidemic of NCDs has been identified by four major risk factors: tobacco use, physical inactivity, the harmful use of alcohol and unhealthy diets.1

The epidemic of NCDs has severe effects on individuals, families and communities. It has taken the world by storm and affected the health systems and health economics. The socioeconomic costs associated with NCDs make the prevention and control of these diseases a major development imperative for the 21st century.1

NCDs records to mortality of 41 million individuals every year, comparable to 71% of all mortalities worldwide. Early diagnosis with effective screening and appropriate treatment of NCDs, as well as palliative care, are key components of the response to non-communicable diseases.1

Government of India has introduced the screening programme for non-communicable diseases and launched the national programme for cardiovascular diseases, stroke and diabetes. This action is taken as a part of response to

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WHO global NCD action plan 2013-2020.² The program implementation is carried out through the existing primary health care system throughout India. Screening of males and females (age 30 years and above) for hypertension, diabetes and oral cancer at the accessible community clinics (health sub-centers) and screening of females for breast and cervical cancer at the next levels of health service delivery [primary health centers (PHC) and district hospitals].3

The activities under national programme for prevention and control of cardiovascular diseases, diabetes and stroke are: Health promotion through behavior change with involvement of community, civil society, communitybased organizations, media etc. Outreach camps are envisaged for opportunistic screening at all levels in the health care delivery system from sub-centre and above for early detection of diabetes, hypertension and common cancers. Management of chronic NCDs, especially cancer, diabetes, CVDs and stroke through early diagnosis, treatment and follow up through setting up of NCD clinics. Build capacity at various levels of health care for prevention, early diagnosis, treatment, IEC/BCC, operational research and rehabilitation.^{4,5}

Provide support for diagnosis and cost-effective treatment at primary, secondary and tertiary levels of health care. Provide support for development of database of NCDs through a robust surveillance system and to monitor noncommunicable diseases morbidity, mortality and risk factors.

Objective

The objective of the study was to study the prevalence of non-communicable diseases and its trends with respect to age and gender.

METHODS

Study setting

The study conducted at Navodaya medical college hospital and research centre. Raichur that caters urban and rural area of Raichur.

Study population

All apparently healthy population from urban and rural part of Raichur were included in the sutdy.

Study duration

The study carried out from January to September 2021.

Study design

The study design was of community based descriptive observational study.

Sample size

We screened all the eligible participants during the mega camp from January to September 2021 and accordingly we analysed 4063 study subjects.

Inclusion criteria

All apparently healthy population from urban and rural part of Raichur that are above 18 years age and willing to participate in our study with prior consent were included in the study.

Exclusion criteria

Age below 18, all those with known NCD and those not willing to participate were excluded from the study.

Statistical analysis

Data was collected by using a structure proforma. Data entered in MS excel sheet and analysed by using SPSS 24.0 version IBM USA. Qualitative data was expressed in terms of proportions. Quantitative data was expressed in terms of Mean and Standard deviation. Association between two qualitative variables was seen by using Chi square test. Descriptive statistics of each variable was presented in terms of mean, SD, standard error of mean. A p<0.05 was considered as statistically significant whereas p<0.001 was considered as highly significant.

RESULTS

We screened total 4063 people during the multi diagnostic mega camp at NMCH Raichur. Majority of the patients were from less than 30 years i.e., 1012 (24.9%). This is followed by 783 subjects i.e., 19.3% from 41-50 and 51-60 years, 774 (19%) from 31-40 years and 710 people from above 60 years i.e., 17.5%.

Table 1: Distribution according to age group.

Age (Years)	Frequency	Percentage (%)
<30	1012	24.9
31-40	774	19.0
41-50	783	19.3
51-60	784	19.3
>60	710	17.5
Total	4063	100

Table 2: Distribution according to gender.

Gender	Frequency	Percentage (%)
Female	2005	49.3
Male	2058	50.7
Total	4063	100.0

Majority of the subjects were males i.e., 2058 (50.7%) and remaining were females i.e., 2005 (49.3%).

Table 3: Distribution according to locality.

Locality	Frequency	Percentage (%)
Rural	2047	50.4
Urban	2016	49.6
Total	4063	100

The 50.4% of the subjects were from rural area and 49.6% from urban area.

Table 4: Prevalence of various NCDs.

NCDs	Frequency	Percentage (%)
DM	1881	46.3
HTN	1841	45.3
CKD	507	12.5
Anaemia	1585	39.0
Renal stones	1267	31.2
Stroke	8	0.2
Cataract	1160	28.6
COPD	840	20.7

Prevalence of diabetes in our study was 46.3%. Prevalence of hypertension in our study was 45.3%. Prevalence of anemia in our study was 39%. Prevalence of renal stones in our study was 46.3%. Prevalence of cataract in our study was 46.3%. Prevalence of COPD in our study was 20.7%. Prevalence of chronic kidney disease in our study was 12.5%. Prevalence of stroke in our study was 0.2%.

Prevalence of diabetes was more in 41-60 years i.e., 41.6%. Prevalence of hypertension was more in 41-50 years i.e., 25.3%. Prevalence of anemia was more in 41-50 and 51-60 years each i.e., 24.7%. Prevalence of renal stones was more in 51-60 years i.e., 24.4%. Prevalence of cataract was more in 41-50 and 51-60 years i.e., 33.8% and 33.7% respectively. Prevalence of COPD was more in 41-50 years i.e., 43.6%. Prevalence of chronic kidney disease was more in 51-60 years i.e., 51.3%. Prevalence of stroke was more in 41-50 years i.e., 37.5%.

Prevalence of diabetes was more in males i.e., 54.1%. Prevalence of hypertension was more in males i.e., 50.8%. Prevalence of anemia was more in males i.e., 51.4%. Prevalence of renal stones was more in i.e., 50.2%. Prevalence of cataract was more in males i.e., 50.9%. Prevalence of COPD was more in females i.e., 51.2%. Prevalence of chronic kidney disease was more in males i.e., 51.3%. Prevalence of stroke was more in males i.e., 62.5%.

Table 5: Age wise prevalence of NCDs.

	Age (Years)											
Variables	<30		31-40		41-50		51-60		>60		Total	P
	No	%	No	%	No	%	No	%	No	%		
DM	405	21.5	348	18.5	391	20.8	392	20.8	345	18.3	1881	0.0001
HTN	344	18.7	360	19.6	465	25.3	352	19.1	320	17.4	1841	0.0001
CKD	0	0.0	95	18.7	260	51.3	152	30.0	0	0.0	507	0.0001
Anaemia	307	19.4	152	9.6	391	24.7	391	24.7	344	21.7	1585	0.0001
Renal stones	193	15.2	236	18.6	309	24.4	310	24.5	219	17.3	1267	0.0001
Stroke	2	25.0	2	25.0	3	37.5	1	12.5	0	0.0	8	0.5300
Cataract	0	0.0	33	2.8	392	33.8	391	33.7	344	29.7	1160	0.0001
COPD	39	4.6	224	26.7	366	43.6	211	25.1	0	0.0	840	0.0001

Table 6: Gender wise prevalence of NCDs.

Variables	Female		Male		Total	P
	No	%	No	%	Total	
DM	864	45.9	1017	54.1	1881	0.0001
HTN	906	49.2	935	50.8	1841	0.875
CKD	241	47.5	266	52.5	507	0.38
Anaemia	771	48.6	814	51.4	1585	0.47
Renal stones	631	49.8	636	50.2	1267	0.55
Stroke	3	37.5	5	62.5	8	0.50
Cataract	570	49.1	590	50.9	1160	0.86
COPD	430	51.2	410	48.8	840	0.0001

DISCUSSION

Prevalence of diabetes in our study was 46.3%.

Anjana et al reported that the overall prevalence of diabetes in all 15 states of India was 7.3% (95% CI 7-7.5).

The prevalence of diabetes varied from 4.3% in Bihar (95% CI 3.7-5) to 10% (8.7-11.2) in Punjab and was higher in urban areas (11.2%, 10.6-11.8) than in rural areas (5.2%, 4.9-5.4; p<0.0001) and higher in the mainland states (8.3%, 7.9-8.7) than in the Northeast (5.9%, 5.5-6.2; p<0.0001). Overall, 1862 (47.3%) of 3938 individuals

identified as having diabetes had not been diagnosed previously.⁶

Anjana et al conducted the study and their preliminary results from a large community study conducted by the Indian council of medical research (ICMR) revealed that a lower proportion of the population is affected in states of Northern India (Chandigarh 0.12 million, Jharkhand 0.96 million) as compared to Maharashtra (9.2 million) and Tamil Nadu (4.8 million).⁷

Zargar et al conducted the study across the metropolitan cities of India reported similar trend: 11.7% in Kolkata (Eastern India), 6.1% in Kashmir Valley (Northern India), 11.6% in New Delhi (Northern India), and 9.3% in West India (Mumbai) compared with (13.5% in Chennai (South India), 16.6% in Hyderabad (south India), and 12.4% Bangalore (South India) as reported by Ramachandran et al.^{8,9}

Prevalence of hypertension in our study was 45.3%.

Anchala et al reported that overall prevalence for hypertension in India was 29.8%. The pooled prevalence of HTN for the rural and urban north Indian population was 14.5% (13.3-15.7) and 28.8% (26.9-30.8). They also reported that prevalence of HTN for the rural and urban east Indian population was 31.7% (30.2-33.3) and 34.5% (32.6-36.5). The pooled prevalence of HTN for the rural and urban west Indian population was 18.1% (16.9-19.2) and 35.8% (35.2-36.5), respectively. The pooled prevalence of HTN for the rural and urban south Indian population was 21.1% (20.1-22.0) and 31.8% (30.4-33.1), respectively. Our prevalence is higher as compared to other above-mentioned studies.

Prevalence of cataract in our study was 46.3%.

The WHO/NPCB (National programme for control of blindness) survey has reported that majority of the blindness in India is due to cataract which accounts to 80% of preventable blindness.¹¹

Vashist et al reported that the prevalence of unoperated cataract in people aged \geq 60 was 58% in north India and 53%) in south India (p<0.05). 12

Many studies worldwide have reported a higher prevalence of cataract among women. 13-15

Prevalence of COPD in our study was 20.7%.

The COPD prevalence varied from 3% to 8% amongst Indian males and approximately 2.5% to 4.5% among Indian females.¹⁶

CONCLUSION

Prevalence of diabetes in our study was 46.3%. Prevalence of hypertension in our study was 45.3%. Prevalence of

anemia in our study was 39%. Prevalence of renal stones in our study was 46.3%. Prevalence of cataract in our study was 46.3%. Prevalence of COPD in our study was 20.7%. Prevalence of chronic kidney disease in our study was 12.5%. Prevalence of stroke in our study was 0.2%. Prevalence of all NCDs was more in above 40 years and more in males except COPD.

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Institutional Ethics Committee

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