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Original Research Article

Profile of the patients suffering from non-communicable diseases attending outpatient department of an urban health training center- a cross sectional study

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ABSTRACT

Background: Non-communicable diseases continue to be an important public health problem in India. These diseases are responsible for a major proportion of morbidity and mortality. In view of this, study was conducted among patients suffering from non-communicable diseases attending outpatient department of an urban health training center of a medical college to know their profile.
Methods: A cross-sectional study was conducted in the month of September, 2023 at an urban health training center. All the patients suffering from non-communicable diseases attending outpatient department during above month were included in the study using purposive sampling method. Predesigned and pretested proforma was used to collect the data. Data was analyzed using Microsoft Excel and appropriate statistical methods. The statistical level of significance was fixed at $p<0.05$.
Results: 4670 new patients attended outpatient department, of which 269 (05.76%) were suffering from non-communicable diseases. 136 (52.92%) were suffering from hypertension, 105 (40.86%) were of diabetes, 07 (02.72%) were of stroke and 09 (03.50%) were of other non-communicable diseases. 12 (04.46%) patients were suffering from both hypertension and diabetes. 131 (50.97%) were above 60 years of age. 139 (54.09%) were males and 118 (45.91%) were females. 50 (19.46%) patients were illiterate while 207 (80.54%) were literate ($p<0.05$). 42 (16.34%) patients were having family history of non-communicable diseases. 40 (15.56%) and 62 (24.12%) patients were doing yoga and exercise respectively. 77 (29.96%) patients were smokers or consuming tobacco or alcohol.
Conclusions: The growing problem of non-communicable diseases can be effectively controlled by empowerment of community through effective health education, utilizing services of trained health care workers, advanced health care services and social insurance.

Keywords: Non-communicable disease, Socio-demography, Urban health

INTRODUCTION

In India, non-communicable diseases are a major public health problem. The burden of non-communicable diseases is increasing day by day due to rapid industrialization, urbanization, changing age structure, and changing life styles. The non-communicable diseases include cardio-vascular diseases including hypertension, diabetes mellitus, chronic pulmonary diseases, stroke, cancer, blindness, accidents and injuries. All these diseases are projected to continue to increase in prevalence in the near future.[1] The growing burden of these diseases is a challenge to the health care services. These diseases are responsible for a major proportion of morbidity and mortality in the community. Lack of trained health care workers, primary health care providers armed with inadequate knowledge about skills along with ill-defined roles of various health sectors in providing

care have played key hurdles in combating the growing burden of non-communicable diseases.[1] Rapid industrialization and urbanization drives the rising burden of non-communicable diseases worldwide that are characterized by uptake of unhealthy lifestyles such as tobacco and alcohol use, physical inactivity and unhealthy diet.[2]

Non-communicable diseases are one of the major health and development challenges of the twenty-first century. These diseases currently cause more deaths than all other causes combined. The deaths due to non-communicable diseases are projected to increase to 52 million by 2030 in the world. People living in urban areas are increasing worldwide and these people are at risk of suffering from non-communicable diseases. It is leading to serious health challenges. Urbanisation is directly related to unhealthy behavioural adoption. It increases the risk of non-communicable diseases.[3] Primary and secondary health care facilities play a very important role in providing health care in common medical, surgical, paediatric and obstetric ailments including non-communicable diseases.[4]

Non-communicable diseases are a rising health problem worldwide and is a cause of public health concern in India too. This is a major threat to public health and calls for an international action on surveillance, prevention and control.[5] The non-communicable diseases are a huge group of illnesses that comprise chronic respiratory illnesses, malignant growth, diabetes, and cardiovascular ailments. The mortality rate of non-communicable diseases is considerably higher in low-income and middle-income countries, which makes non-communicable diseases a tremendous barrier to reducing developing and developed nations' health disparities.[6] The non-communicable diseases have emerged as leading threat to mankind. It approximates to around 70% mortality burden worldwide. Most of the premature deaths from non-communicable diseases are attributed to modifiable risk factors. Even in rural area prevalence of non-communicable diseases is at raising trend.[7]

The non-communicable diseases are becoming a greater burden in India. The onset of non-communicable diseases occurs ten years earlier in India than it does in many developed nations.[8] The non-communicable diseases account for 53% of deaths in India. Burden of non-communicable diseases and resultant mortality is expected to increase unless massive efforts are made to prevent and control non-communicable diseases and their risk factors.[9] Hypertension is highly prevalent in patients with type II diabetes mellitus. India has some of the highest rates of diabetes and hypertension worldwide, but there is lack of local data on the coexistence of these two risk factors.[10] With this background, study was conducted to know the socio-demographic profile of the patients suffering from non-communicable diseases attending outpatient department of an urban health training center of a medical college.

METHODS

A cross-sectional study was conducted using purposive sampling method among all the patients aged ≥18 years and suffering from non-communicable diseases who attended outpatient department of an urban health training center of a medical college in Thane in the month of September 2023, to know their socio-demographic profile and type of morbidity. Some patients are known cases of non-communicable diseases while some are newly diagnosed. Many patients suffering from non-communicable diseases and residing in the catchment area of urban health center utilize the health care services provided by urban health training center outpatient department. Non-communicable diseases mainly include cardiovascular diseases including hypertension, stroke, diabetes mellitus, cancer, chronic lung diseases, accidents, blindness and injuries.

Necessary approvals and permissions were obtained before conducting the study. Verbal informed consent from the patients was obtained. Inclusion and exclusion criteria were developed. Patients aged 18 years and above were included in the study while patients below 18 years of age were excluded. Complete enumeration technique was used here. Predesigned and pretested proforma was used to collect the data. Data was analyzed using Microsoft Excel spread sheet. Descriptive and inferential statistical methods were applied to find out the results according to the objectives of the study. The results are represented in the form of tables. The standard error of difference between two proportions test of significance was applied to interpret the results. The statistical level of significance was fixed at $p<0.0$.

RESULTS

4670 patients attended outpatient department of an urban health training centre of a medical college located in Mumbai metropolitan region in the month of September, 2023 of which 269 (05.76%) were suffering from non-communicable diseases. 205 (76.21%) patients were known cases attending outpatient department for follow-up while 64 (23.79%) patients were newly diagnosed. 257 (95.54%) patients were suffering from hypertension or diabetes mellitus or stroke or other non-communicable diseases. 12 (04.46%) were suffering from both hypertension and diabetes mellitus. 136 (52.92%) patients were suffering from hypertension, 105 (40.86%) were suffering from diabetes mellitus, 07 (02.72%) were suffering from stroke and 09 (03.50%) were suffering from other non-communicable diseases like cardiac ailments, chronic pulmonary disease, cancer, blindness, accident and injuries. Thus, the majority of the patients were of hypertension and diabetes.

139 (54.09%) patients were males while 118 (45.91%) were females. 126 (49.03%) patients were in the age group of 18-60 years while 131 (50.97%) were above 60 years of age. The mean age of the patients was 57.63

years. The mean age of the males and females was 58.26 and 57.00 years respectively. The range of the age of the subjects was 20-88 years. For males and females, it was 26-88 and 20-81 years respectively. 50 (19.46%) patients were illiterate while 207 (80.54%) were literate ($p<0.05$). Thus, the majority of the patients of non-communicable diseases attending outpatient department were literate. 92 (35.80%) subjects were working and 93 (36.19%) were home makers. 164 (63.81%) subjects were having monthly family income more than Rs.20000 and 93 (36.19%) were having monthly income equal or less than Rs.20000. 133 (51.75%) were from unitary while 124 (48.25%) were belonged to joint family. 144 (56.03%) patients were from small families while 113 (43.97%) were from large families (Table 1).

Table 1: Profile of the patients suffering from non-communicable diseases (n=257).

Variables		Total N (%)	Hypertension N (%)	Diabetes N (%)	Stroke N (%)	Other N (%)
		257 (100.0)	136 (52.92)	105 (40.86)	07 (02.72)	09 (03.50)
Age in years	18-60	126 (49.03)	66 (48.53)	46 (43.81)	02 (28.57)	03 (33.33)
	>60	131 (50.97)	70 (51.47)	59 (56.19)	05 (71.43)	06 (66.67)
P value		0.76	0.73	0.21	0.33	0.37
Gender	Male	139 (54.09)	71 (52.21)	51 (48.57)	06 (85.71)	07 (77.78)
	Female	118 (45.91)	65 (47.79)	54 (51.43)	01 (14.29)	02 (22.22)
P value		0.19	0.61	0.77	0.15	0.17
Education	Illiterate	50 (19.46)	21 (15.44)	14 (13.33)	02 (28.57)	04 (44.44)
	Literate	207 (80.54)	115 (84.56)	91 (86.67)	05 (71.43)	05 (55.56)
P value		0.0001	0.0001	0.0001	0.33	0.75
Occupation	Employed	92 (35.80)	53 (38.97)	34 (32.38)	02 (28.57)	03 (33.33)
	Unemployed	23 (08.95)	09 (06.62)	09 (08.57)	02 (28.57)	03 (33.33)
	Retired	49 (19.07)	27 (19.85)	19 (18.10)	02 (28.57)	01 (11.11)
	Home maker	93 (36.19)	47 (34.56)	43 (40.95)	01 (14.29)	02 (22.23)
Family income	≤20,000	93 (36.19)	61 (44.85)	31 (29.52)	02 (28.57)	03 (33.33)
	>20,000	164 (63.81)	75 (55.15)	74 (70.48)	05 (71.43)	06 (66.67)
P value		0.0001	0.23	0.0001	0.33	0.37
Type of family	Unitary	133 (51.75)	72 (52.94)	73 (69.52)	01 (14.29)	07 (77.78)
	Joint	124 (48.25)	64 (47.06)	32 (30.48)	06 (85.71)	02 (22.22)
P value		0.57	0.49	0.0002	0.15	0.17
Family size	≤4	144 (56.03)	67 (49.26)	60 (57.14)	04 (57.14)	06 (66.67)
	>4	113 (43.97)	69 (50.74)	45 (42.86)	03 (42.86)	03 (33.33)
P value		0.05	0.86	0.15	0.73	0.37
Marital status	Married	226 (87.94)	113 (83.09)	98 (93.33)	07 (100.0)	08 (88.89)
	Widow	23 (08.95)	17 (12.50)	05 (04.76)	00 (00.00)	01 (11.11)
	Widower	08 (03.11)	06 (04.41)	02 (01.90)	00 (00.00)	00 (00.00)

70 (51.47%) patients of hypertension, 59 (56.19%) of diabetes mellitus, 05 (71.43%) of stroke and 06 (66.67%) patients from other category were aged more than 60 years. Stroke patients aged more than 60 years were more (i.e., 71.43%) compared to the patients less than or equal to 60 years of age. Of the 07 (02.72%) patients of stroke, 06 (85.71%) were males. 73 (69.52%) patients of diabetes mellitus were from unitary families. 06 (85.71%) patients of stroke were from joint families. Many patients of hypertension and diabetes were literate ($p<0.05$). 12 (04.67%) patients were suffering from hypertension and diabetes both, of which 05 (03.60%) were males and 07 (05.93%) were females (Table 1).

60 (57.14%) patients of diabetes were from small size families while 45 (42.86%) were from large size families. 53 (38.97%) hypertensives were employed, 27 (19.85%) were retired, 47 (34.56%) were home makers and rest were unemployed. 34 (32.38%) diabetics were employed, 43 (40.95%) were homemakers, 19 (18.10%) were retired and rest were unemployed. 75 (55.15%) hypertensives, 74 (70.48%) diabetics and 05 (71.43%) suffering from stroke were having monthly income more than Rs.20,000. 74 (70.48%) diabetic patient's income was more than Rs.20,000 per month while 31 (29.52%) were having less than Rs.20,000 per month ($p<0.05$) (Table 1).

Table 2: Distribution of subjects according to family history of non-communicable diseases (n=42).

Family history	Frequency	Percentage
Hypertension	25	09.73
Diabetes mellitus	16	06.23
Stroke	01	00.39

Of the 257 subjects, 42 (16.34%) have given family history of non-communicable diseases. 25 (09.73%) subjects have given family history of hypertension, 16 (06.23%) diabetes mellitus and 01 (00.39%) subject has given family history of stroke. Family history of hypertension was common among the subjects (Table 2).

Table 3: Distribution of the yoga and exercise practices among the subjects (n=102).

Variables	Frequency	%	Hypertension	Diabetes	Stroke	Other
Yoga	40	15.56	17 (42.50%)	19 (47.50%)	02 (05.00%)	02 (05.00%)
Exercise	62	24.12	25 (40.32%)	32 (51.61%)	03 (04.84%)	02 (03.23%)

Table 4: Distribution of the addictions among the subjects (n=77).

Variables	Frequency	%	Hypertension	Diabetes	Stroke	Other
Smoking	22	08.56	13 (59.09%)	05 (22.73%)	03 (13.64%)	01 (04.55%)
Alcohol	37	14.40	20 (54.05%)	13 (35.14%)	02 (05.41%)	02 (05.41%)
Tobacco	18	07.00	07 (38.89%)	04 (22.22%)	04 (22.22%)	03 (16.67%)

Table 5: Distribution of the subjects according to symptomatic status (n=257).

Symptoms(n=257)	Frequency	%	Hypertension	Diabetes	Stroke	Other
Asymptomatic	189	73.54	102 (75.00)	78 (74.29)	03 (42.86)	06 (66.67)
Symptomatic	68	26.46	34 (25.00)	27 (25.71)	04 (57.14)	03 (33.33)

Table 6: Distribution of subjects suffering from hypertension and diabetes mellitus both (n=12).

Characteristics (n=12)		Frequency	Percentage
Age in years	18-60	04	33.33
	>60	08	66.67
Gender	Male	05	41.67
	Female	07	58.33
Marital Status	Married	10	83.33
	Widow	02	16.67
Education	Illiterate	03	25.00
	Literate	09	75.00
Occupation	Employed	03	25.00
	Retired	05	41.67
	Home Maker	04	33.33
Monthly Income	≤20,000	02	16.67
	>20000	10	83.33
Type of family	Unitary	07	58.33
	Joint	05	41.67
Family Size	≤4	09	75.00
	>4	03	25.00
Family H/O NCDs	Yes	03	25.00
	No	09	75.00
Yoga	Yes	02	16.67
	No	10	83.33
Exercise	Yes	07	58.33
	No	05	41.67
Symptoms	Yes	06	50.00
	No	06	50.00
Addictions	Smoking	01	08.33
	Alcohol	03	25.00
	Tobacco	02	16.67
	No addictions	06	50.00

Of the 257 subjects, 102 (39.69%) were practicing yoga and doing exercise. 40 (15.56%) were practicing yoga and 62 (24.12%) were doing exercise. Of the 40 subjects practicing yoga, 17 (42.50%) were hypertensives and 19 (47.50%) were diabetics. Of the 62 subjects doing exercise, 25 (40.32%) were hypertensives and 32 (51.61%) were diabetics. Exercise was common among the subjects compared to yoga (Table 3).

Of the 257 subjects, 77 (29.96%) were alcoholic, smokers and consuming tobacco. 22 (08.56%) were smokers. Of the 22 smokers, 13 (59.09%) were hypertensives, 05 (22.73%) were diabetics, 03 (13.64%) were suffering from stroke. 37 (14.40%) subjects were alcoholics. Of these 37 alcoholics, 20 (54.05%) were hypertensives, 13 (35.14%) were diabetics, 02 (05.41%) were of stroke. 18 (07.00%) subjects were consuming tobacco. Of these 18 subjects, 07 (38.89%) were hypertensives, 04 (22.22%) were diabetics, 04 (22.22%) were of stroke. Smoking and tobacco consumption together was more prevalent among the subjects compared to alcohol consumption (Table 4).

Of the 257 subjects, 189 (73.54%) were asymptomatic and just came for the follow-up while 68 (26.46%) were symptomatic and came to health care facility for treatment. 34 (25.00%) hypertensives and 27 (25.71%) diabetics were symptomatic (Table 5).

12 patients were suffering from both hypertension and diabetes of which 05 (41.67%) were males and 07 (58.33%) were females. 04 (33.33%) were in the age group of 18-60 years while 08 (66.67%) were >60 years of age. 10 (83.33%) subjects were married. 09 (75.00%) were literate. 05 (41.67%) were retired. 10 (83.33%) subjects were having monthly income more than Rs. 20000. 07 (58.33%) subjects were belonged to unitary family. 09 (75.00%) subjects were from families with ≤4 family members. 03 (25.00%) members were having family history of non-communicable diseases. 02 (16.67%) and 07 (58.33%) subjects were practicing yoga and doing exercise respectively. 06 (50.00%) were symptomatic and visited health care facility for treatment. 06 (50.00%) patients were smokers or alcoholic or consuming tobacco (Table 6).

DISCUSSION

The present study has revealed, out-patient department services of urban health training centre are equally utilised by patients suffering from non-communicable diseases like hypertension, diabetes mellitus, stroke etc. Most of the patients of non-communicable diseases attending outpatient department were literate and having their monthly family income more than Rs.20,000, which indicate high confidence level in the health care services provided by the primary health care facility in urban area. India is currently experiencing an epidemic of non-communicable diseases and has largest number of diabetic patients at present. It is often referred to as the diabetic capital of the world.[1]

Sivanantham et al, observed in their study related to risk factors of non-communicable diseases in Puducherry, that among men alcohol use (40.40%) was almost twice higher compared to tobacco use (24.40%).[2] Nearly half i.e., 45.8% population was physically inactive and 46.10% was obese. Hypertension and diabetes mellites were present among one-third (33.60%) and one-fourth (26.70%) of the population respectively which were significantly higher among men. In the present study it is observed that, of the 257 subjects, 22 (08.56%) were smokers, 37 (14.40%) were alcoholics and 18 (07.00%) were consuming tobacco. Alcohol consumption was more prevalent among the patients suffering from non-communicable diseases compared to smoking and tobacco consumption.

Chobe et al observed prevalence of hypertension was 40.40% among elderly of six Indian states.[3] They also observed 07.80% elderly were suffering from heart diseases. In the present study it is observed that, 126 (49.03%) patients attending outpatient department of urban health training centre were in the age group of 18-60 years while 131 (50.97%) were above 60 years of age. David et al observed, pneumonia and other respiratory illnesses was the most common diagnosis followed by infectious diseases, circulatory diseases like hypertension, ischemic heart disease and non-insulin dependent diabetes mellitus in their retrospective study of inpatient admission records of an urban secondary health care centre in Tamil Nadu.[4]

Globally, as per the World Health Organisation Global Action Plan 2013-2020, more than 36 million die due to non-communicable diseases of which 14 million dies before the age of 70 years. India in the last decade has been witnessing an increase in non-communicable diseases. Menon et al observed about 50-70% patients suffering from non-communicable diseases took treatment in private facilities in India.[5] But in the present study it is observed that many patients suffering from non-communicable diseases are availing health care services offered by public sector.

Ramesh et al observed that in 2019, around 17.9 million individuals died from cardiovascular diseases, which is accounting for 32% of all deaths.[6] Stroke is the fifth-significant cause of disability and the fourth-leading cause of fatality, which is accounting for 3.5% of all disabilities. Gupta et al in their study in Uttar Pradesh observed that blindness and cardiovascular diseases was leading cause of admission and was increasing year after year.[7] Road traffic accidents, stroke and cardiovascular diseases were the leading causes of mortality in last 3 years among the patients admitted in tertiary care hospital in Uttar Pradesh.

Jagadeesh observed 16.30% and 21.30% prevalence of diabetes and hypertension respectively in rural areas of Jharkhand.[8] High prevalence of non-communicable diseases such as diabetes and hypertension increase the

burden on existing health care system. Sharma mentioned in the review article, based on available evidence cardiovascular diseases (24%), chronic respiratory diseases (11%), cancer (6%), and diabetes (2%) are the leading causes of mortality in India.[9] Metri et al observed in their study that the prevalence of hypertension in Indian patients with type II diabetes patients was very high.[10]

This study is of short duration and with small sample size. To get better idea of socio-demographic profile and type of morbidity among the patients suffering from non-communicable diseases, study with long duration and with large sample size is needed.

CONCLUSION

It is observed that out-patient department services of urban health training centre of a medical college are equally utilised by patients suffering from non-communicable diseases like hypertension, diabetes mellitus, stroke and other non-communicable diseases. Most of the patients suffering from non-communicable diseases were literate and having their monthly family income more than rupees twenty thousand, which indicate high confidence level in the health care services provided by the primary health care facility in urban area. Adequate resources should be allocated to such health care facilities to enable them to provide comprehensive health care to the patients suffering from non-communicable diseases. Primary prevention using health education, lifestyle modification and secondary prevention using early diagnosis by screening in the community and referral to nearest health care facility for treatment prevents the complications of non-communicable diseases.

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