RESEARCH ARTICLE

A COMPARATIVE STUDY OF PREVALENCE OF NON-COMMUNICABLE DISEASES IN FAMILIES BELONGING TO THREE SOCIO-ECONOMIC GROUPS IN MUMBAI

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ABSTRACT

Non-communicable diseases (NCDs), also known as chronic diseases, are not passed from one person to another. The NCDs include cardiovascular diseases (like heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructed pulmonary disease and asthma), diabetes etc. The objective of the present study was to compare the prevalence of NCDs focusing mainly on Diabetes Mellitus (DM) and Cardio-Vascular Diseases (CVD)/Hypertension (HTN) in High Socio-Economic Groups (HSEG), Middle Socio-Economic Groups (MSEG) and Low Socio-Economic Groups (LSEG) staying in Mumbai. A total of 14 municipal wards in Mumbai Metropolitan Region were selected by simple random sampling method. A questionnaire was used to collect information on the general background of the families, and incidence of non-communicable diseases in the families. 100 families from each SEG were selected by snowball sampling from 14 Mumbai Metropolitan wards. The results showed that the prevalence of DM was 14% in HSEG as compared to 11% in MSEG and 9% in LSEG. CVD/HTN prevalence was 10% in MSEG and comparatively lower in LSEG and HSEG. It was concluded that the prevalence of NCDs were slightly lower in LSEG compared to other two SEG.

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INTRODUCTION

The present study aimed to compare the prevalence of Non-Communicable Diseases mainly Diabetes Mellitus and Cardio-Vascular Disease/Hypertension in families belonging to High Socio-Economic group Meddle Socio-Economic group and Low Socio-Economic group in different wards in the Mumbai Metropolitan Region. According to (WHO, 2015) report, NCDs kill 38 million people each year. Cardiovascular diseases account for most NCDs deaths, or 17.5 million people annually, followed by cancers (8.2 million), respiratory diseases (4 million), and diabetes (1.5 million). At present, India is in a position where it is facing a growing burden of non-communicable diseases (NCDs) because of industrialization, socio-economic development, urbanization, changing age structure and changing lifestyles. It is an important public health problem in India, which is responsible for a major proportion of mortality and morbidity. (Upadhyay, 2012). According to WHO in India every 1 out of 10 individual aged 18 years and above has raised blood sugar

level (WHO, 2014). In a region wise analysis of India, population with average blood glucose (>140mg) was found to be higher in northern region followed by southern and north eastern region, whereas % high sugar(>160mg) was more in southern area then north and north eastern (Mote, 2016). A study revealed that prevalence of coronary heart disease (CHD) has increased almost to 6 times in urban and 4 times in rural areas over the last 40 years. Currently there are 30 million CHD patients with 14 million in rural and 16 million in urban areas (Kumar, 2012). According to WHO every 4th individual aged 18 years and above has high blood pressure. It is predicted that by 2025 the number of hypertensive in India will nearly double from 118 million in 2000 to 213 million. A meta analysis reported 25 % prevalence in urban and 10% among rural adults. (Kumar, 2012). There is a need to study the prevalence of Non-Communicable diseases especially in metro city like Mumbai where people from different socio-economic groups live. Therefore the present study was planned to study the prevalence of NCDs in these families belonging to different socio-economic groups as such kind of study has not been conducted in the past.

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Aim/Objective

To know the prevalence of Non-Communicable Diseases in different Socio-Economic Groups staying in Mumbai.

METHODOLOGY

Study Design: A cross-sectional study

Study Period- 6 Months

Sampling

A total of 14 municipal wards in Mumbai Metropolitan Region were selected by simple random sampling method. From each wards areas were identified for each income group and families were then selected by snowball sampling. Thus a total of 300 families 100 from each income groups were selected for the present study.

Inclusion Criteria

Families living in Mumbai Metropolitan Region under the selected wards were included in the study. Families with or without NCDs were included.

Exclusion Criteria

Families outside the Mumbai Metropolitan Region and not residing in the selected wards were not considered and houses with only single member was not included.

Data Collection

Data was collected from families who gave their consent to participate in the study. A questionnaire was used to collect information on the general background of the families, and incidence of non-communicable diseases in the families.

Data analysis

The data collected was classified and coded and was analysed with the help of a statistician.

RESULTS AND DISCUSSION

Table I. Age wise composition of the families (n=300) belonging to 3 socio-economic groups

Composition of 300 families (Age wise)	HSEG	MSEG	LSEG	Total	%
Total adults 20-59 yrs.	313	269	258	840	68%
Total elderly ≥60yrs	31	40	27	98	8%
Total children < 3 yrs.	7	10	8	25	2%
Total children 3-5.99 yrs	15	14	16	45	4%
Total children 6-9.99 yrs	13	14	19	46	4%
Total adolescents 10-19 yrs	47	56	73	176	14%

From the age wise family composition it is seen that maximum numbers (n=313) of adults from the selected families were from HSEG. Maximum number (n=35) of children (3-9.99 years) and adolescents (n=73) were from LSEG and maximum number (n=10) of children below 3 years and elderly (n=40) were from MSEG. When the total of 3 socio-economic groups was compared the maximum percentage (68%) of composition

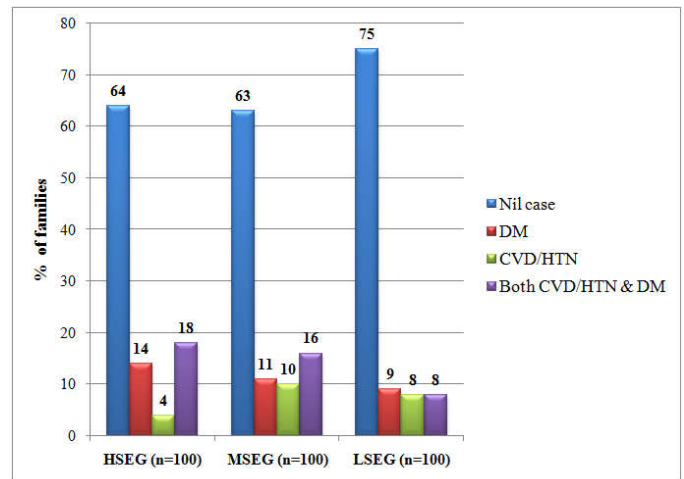was of adults and minimum percentage (2%) of composition was of children below 3 years.

Figure 1. Prevalence of NCDs in families belonging to 3 SEG

It was observed that there were maximum families without NCDs in all SEG, especially in LSEG 75 % of families had no cases of NCDs. 18 % of families with both (CVD/HTN and DM) cases was there in HSEG compared to other groups where % of prevalence was low. The percentage of families with only DM without any case of CVD/HTN was also found to be 14% in HSEG compared to 9% in LSEG. The families with only CVD/HTN without any case of DM were 10% in middle SEG compared to 4% in high SEG. Therefore, it was observed in the present study that compared to families of other socio-economic groups the prevalence of NCDs in families belonging to LSEG was lower. In a study, it was found that prevalence of self-reported diabetes was high especially in those with high household wealth followed by those with high education level. It was found that high socio-economic groups in India appeared to be at high risk of type 2 diabetes mellitus (Daniel J Corsi, 2012). In a study to compare the prevalence of and risk factors for coronary heart disease in rural, semi-urban and urban communities in north India in adults above 35 years of age. High prevalence was seen in males and females in cities followed by towns low prevalence was observed in villages. Hypertension, diabetes, obesity and physical inactivity were significantly more common in the urban areas, while the rate of tobacco smoking was significantly higher in the rural areas. (Kumar R, 2006).
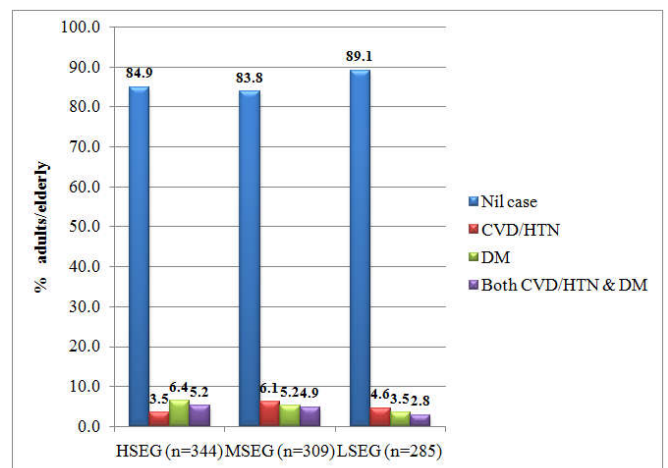

Figure 2. Prevalence of NCDs in adults/elderly from 3 SEG

It was observed that there were no cases of Diabetes Mellitus (DM) or Cardio-Vascular Diseases (CVD)/Hypertension (HTN) in children/adolescents in any of the 3 SEG. Thus, prevalence of NCDs was seen only in the adults and the elderly. The percentage of adults/elderly without any case of NCDs was higher in all SEG ranging from 83.8% in MSEG to 89.1% in low SEG. Adults/elderly with both (CVD/HTN and DM) was higher in high SEG 5.2% compared to other SEG. The percentage of adult/elderly with only diabetes was more in high SEG (6.4%) compared to the other two groups. Middle SEG had 6.1% CVD prevalence which was higher compared to other groups. Therefore, it was observed that when compared to other SEG the prevalence of NCDs in adults/elderly was less in LSEG. A study suggested that hypertension, obesity, diabetes, and low physical activity show an increasing gradient across the wealth quartiles (Mohammad Mostafa Zaman, 2016).

Conclusion

In the present study the prevalence of NCDs like Cardio-Vascular Disease/Hypertension and Diabetes Mellitus was not found in children or adolescents in Mumbai. The prevalence was found only in adults/elderly living in Mumbai and the prevalence was found to be lower in low socio-economic groups compared to high or middle socioeconomic groups. Therefore, the prevalence of NCDs was lower in families belonging to low socio-economic groups compared to other two groups.

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