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PREVALENCE OF BEHAVIORAL RISK FACTORS OF CHRONIC NON COMMUNICABLE DISEASES IN AN URBAN AREA OF DELHI

Medicine

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ABSTRACT

Introduction: Most of chronic non- communicable diseases have common behavioral risk factors which are modifiable. So, this study was done to find the prevalence of these risk factors.

Materials and Methods: A community based cross sectional study was conducted in an urban area of Delhi from January 2015 to December 2015. Total 480 subjects were interviewed based on WHO STEPS questionnaire.

Results: Overall prevalence of behavioural risk factors for chronic NCD which includes current smokers, current alcohol users, inadequate use of fruits and vegetables and physical inactivity were 13.50%, 26.00%, 91.30% and 44.60% respectively. Current smokers and current alcoholic for gender and socio-economic status ($p<0.001$), inadequate use of fruits and vegetables for age ($p<0.004$) and education ($p<0.001$) and physical inactivity for socio-economic status ($p<0.001$) were found to be statistically significant.

KEYWORDS:

Prevalence, Risk Factors, Non-communicable disease, Delhi

INTRODUCTION

In recent years, chronic non-communicable diseases (NCDs), such cardiovascular diseases (CVD), diabetes, chronic obstructive pulmonary diseases (COPD), hypertension (HTN) and cancers have become an emerging pandemic globally with disproportionately higher rates in developing countries. [1] In India, NCDs were responsible for 53 per cent of deaths and 44 per cent of disability adjusted life years lost.[2] Most NCDs have common behavioural factors like tobacco use, alcohol use, unhealthy diet and physical inactivity which are modifiable and measureable. So, surveillance of these risk factors is now the fundamental importance but current health system in India has many limitations. Therefore, a proper surveillance systems for non-communicable diseases and their risk factors is essential.

MATERIALS AND METHODS:

It was a community based cross sectional study conducted in an urban resettlement area, Gokulpuri, catered by the Department of Community Medicine, Maulana Azad Medical College, Delhi, from January 2015 to December 2015. It included person aged between 25 to 65 years residing for minimum of six months.

At 95% confidence level and taking the prevalence of smoking to be 17% [3] with a relative error of 20 % using the formula, $n = Z\alpha 2\ p\ q\ /\ L2$, sample size 470 came out but we included 480 subjects.

A systematic random sampling was used to select household. A pre-designed and pre-tested, semi-structured questionnaire was used. Questionnaire and definitions were based on the WHO steps survey manual. [4]

The collected data was entered in MS-Excel and then was analysed and statistically evaluated using SPSS-17 version.

This study was approved by the institutional ethics committee and informed consent were taken.

RESULTS:

Out of 480 participants almost half of them 243 (50.6%) were males and rest females. Majority, 124 (51.00%) males and 119 (50.60%) females were in the age group of 25-35 years. Around 101 (21.00%) participants were illiterate and only 33 (6.91%) were post graduates. It was found that 77 (32.50%) females and 65 (26.70%) males were unskilled. Majority of subjects 279 (58.10%) belonged to upper lower socio economic status. [Table 1]

Table 1: Socio- demographic profile of the study group

Characteristics	Males n= 243 (50.60%)	Females n= 237 (49.40%)	Total n= 480
Age groups			
25-35	124 (51.00)	119 (50.60)	243 (50.60)
36-45	68 (28.00)	59 (24.90)	127 (26.50)
46-55	31 (12.80)	42 (17.70)	73 (15.20)
56-65	20 (8.20)	17 (7.20)	37 (7.70)
Education**			
Illiterate	45 (18.50)	56 (23.60)	101 (21.00)
Primary/ Just literate	36 (14.80)	33 (13.90)	69 (14.40)
Middle school	47 (19.30)	43 (18.10)	90 (18.80)
High school	30 (12.30)	36 (15.20)	66 (13.80)
Diploma/ Intermediate	27 (11.10)	16 (6.80)	43 (9.00)
Graduate	39 (16.00)	39 (16.50)	78 (16.30)
Post graduate / Professional	19 (7.80)	14 (5.90)	33 (6.90)
Occupation**			
Unemployed	63 (25.90)	57 (24.10)	120 (25.00)
Unskilled	65 (26.70)	77 (32.50)	142 (29.60)
Semi- skilled	27 (11.10)	27 (11.40)	54 (11.30)
Skilled worker	22 (9.10)	20 (8.40)	42 (8.80)
Clerical/ shop owner/ farmer	26 (10.70)	28 (11.80)	54 (11.30)
Semi-professional	14 (5.80)	9 (3.80)	23 (4.80)
Professional	26 (10.70)	19 (8.00)	45 (9.40)
Socio-economic status**			
Upper	22 (9.10)	0	22 (4.60)

Upper middle	29 (11.90)	18 (7.60)	47 (9.80)
Lower middle	103 (42.40)	10 (4.20)	113 (23.50)
Upper lower	83 (34.20)	196 (82.70)	279 (58.10)
Lower	6 (2.50)	13 (5.50)	19 (4.00)

***According to Modified Kuppuswamy classification*

Overall prevalence of behavioural risk factors for chronic non communicable diseases which includes current smokers, current alcoholic, inadequate use of fruits and vegetables and physical inactivity were 13.50%, 26.00%, 91.30% and 44.60% respectively. The prevalence of current smokers was more in males as compared with females ($p < 0.001$). More males were consuming alcohol as compared to the females ($p < 0.001$). **[Table 2]**

Table 2: Prevalence of behavioural risk factors of chronic NCD in the study population according to gender

Behavioural risk factors	Males n= 243 N (%)	Female n= 237 N (%)	Total n= 480 N (%)	χ2 value, df, p value
Current smokers	65 (26.70)	0	65 (13.50)	73.32, 1, 0.001*
Current alcoholics	107 (44.00)	18 (7.60)	125 (26.00)	82.71, 1, 0.001*
Inadequate use of fruits / vegetables	226 (93.00)	212 (89.50)	438 (91.30)	1.897, 1, 0.168
Physical inactivity	106 (43.60)	108 (45.60)	214 (44.60)	0.184, 1, 0.668

*p value <0.05

After 56 years of age more people were found to be alcoholics and physical inactive. More current smokers belong to age between 36-55 years but it was not found statistically significant. Whereas inadequate use of fruits and vegetables was more among young adults age between 25-35 years ($p < 0.004$). **[Table 3]**

Table 3: Prevalence of behavioural risk factors of chronic NCD in the study population according to age

Behavioural Risk factors	25-35 years n=243 N (%)	36-45 years n=127 N (%)	46-55 years n=73 N (%)	56-65 years n=37 N (%)	χ2 value, df, p value
Current smokers	28 (11.50)	21 (16.50)	12 (16.40)	4 (10.80)	2.577, 3, 0.462
Current alcoholics	65 (26.60)	32 (25.20)	17 (23.30)	11 (29.70)	0.659, 3, 0.883
Inadequate use of fruits / vegetables	233(95.90)	110 (86.60)	63 (86.30)	32 (86.50)	13.247, 3, 0.004*
Physical inactivity	111 (45.70)	51 (40.20)	32 (43.80)	2 (54.10)	2.485, 3, 0.478

*p value <0.05

However, risk factors like inadequate use of fruits and vegetables ($p < 0.001$) and physical inactivity was more prevalent among higher education. But such trends were not seen with other behavioural risk factors. **[Table 4]**

Table 4: Prevalence of behavioural risk factors of chronic NCD in the study population according to education

Behavioural Risk Factors	Il-literate n=101 N (%)	Primary n=69 N (%)	Middle school n=90 N (%)	High school n=66 N (%)	Inter-Mediate n=43 N (%)	Graduate n=78 N (%)	Post-graduate n=33 N (%)	χ2 value, df, p value
Current smokers	9 (8.90)	8 (11.60)	16 (17.80)	5 (7.60)	11 (25.60)	14 (17.90)	2 (6.10)	13.654, 6, 0.34
Current alcoholics	23 (22.80)	22 (31.90)	21 (23.30)	15 (22.70)	15 (34.90)	20 (25.60)	9 (27.30)	4.281, 6, 0.639
Inadequate use of fruits /vegetables	95 (94.1)	54 (78.00)	75 (83.30)	60 (90.90)	43 (100.00)	78 (100.00)	33 (100.00)	37.42, 6, 0.001*
Physical inactivity	42 (41.60)	25 (36.20)	39 (43.00)	33 (50.00)	20 (46.50)	39 (100.00)	16 (100.00)	4.351, 6, 0.629

*p value <0.05

Higher socio- economic status showed higher consumption of alcohol ($p < 0.001$) and higher level of physical inactivity ($p < 0.001$) but current smokers were more prevalent among upper middle class ($p < 0.001$). However, inadequate use of fruits and vegetables was common among all socio economic classes. **[Table 5]**

Table 5: Prevalence of behavioural risk factors of chronic NCD in the study population according to socio economic status

Behavioural risk factors	Upper n=22 N (%)	Upper middle n=47 N (%)	Lower middle n=113 N (%)	Upper lower n=279 N (%)	Lower n=19 N (%)	χ2 value, df, p value
Current smokers	0	12 (25.50)	26 (23.00)	27 (9.70)	0	24.40, 4, 0.001*
Current alcoholics	17 (77.30)	18 (38.30)	38 (33.60)	52 (18.60)	0	51.653, 4, 0.001*
Inadequate use of fruits / vegetables	21 (95.50)	43 (91.50)	104 (92.00)	252 (90.30)	18 (94.70)	1.168, 4, 0.883
Physical inactivity	16 (72.70)	17 (36.20)	61 (54.00)	120 (43.00)	0	28.005, 4, 0.001*

*p value <0.05

DISCUSSION:

Current smoking:

In our study, 26.70% of males but no females were found to be current smoker. Many previous studies [3, 5, 6, 7] have shown lower prevalence in females than males which could be attributed to better influence of social norms about females and tobacco use. Current smoking was found higher among age group 25-35 years (28%) and similar results was seen in study by Watson et al.[8] But in various studies [5, 7, 9, 10] high prevalence were found among adults. The increasing prevalence of current smoking in younger group in this study could be attributed to more peer seeking behaviour and easy availability of products. However, the prevalence of current smoking in present study was observed higher among upper middle (25.50%) than study by Garg et al [3] which could be due to more affordability and lifestyle changes.

Current alcohol use:

The prevalence of alcohol use in the present study among females (7.60%) was found to be higher than studies [3, 5, 11, 12] which might be due to influence of western culture or as a method of stress relaxation. Alcohol use in the present study was higher among age 56-65 years (29.70%) which was different from previous studies. [3, 5, 13] However, alcohol use was observed to be more among upper socio economic status (77.10%) and decreasing as status is decreasing and similar trends was seen. [3] This could be attributed to easy availability and affordability of products.

Inadequate use of fruits and vegetables:

In present study prevalence of inadequate use of fruits and vegetables were more among males (93.00%) than females (89.50%) which could be attributed to lack of awareness, lack of availability and high cost factors. However, inadequate use of fruits and vegetables in the present study was highest among upper socio-economic status (95.50%) was similar to previous studies. [3, 6] The increasing prevalence in upper socio-economic class could be attributed to lack of time and unhealthy eating habits.

Physical inactivity:

In this study physical inactivity was observed more in females (45.60%) than males (43.60%) which was also seen in study by Koppad et al [11] but not in other studies. [11, 12] This can be due to lack of awareness and its importance. Physical inactivity among 56-65 years (54.10%) was more prevalent in this study but in other studies [9, 10, 13] was more common in young. This could be attributed to more dependent nature, aging and lack of awareness. However, physical inactivity was found to be more in upper class (72.70%) and higher education like post graduates (100%) which might be due to unhealthy lifestyle habits and lack of availability of proper spaces for physical activity.

CONCLUSION:

This study showed high burden of behavioural risk factors of chronic non communicable. Chronic NCDs causes high out of pocket expenditure and economic burden so by modifying these risk factors makes a cost effective to promote interventions. To reduce modifiable risk factors multipronged strategies is needed like lifestyle modifications, tobacco and alcohol control, supply of affordable and healthy foods and urban planning to promote physical activity is much needed. Intensive IEC campaigns focussing to children, adolescent and adults so as to deter early initiation of smoking and alcohol. The media has crucial role to play a key role in spreading awareness through various methods, including television, radio and print media, etc. Initiation of NCD surveillance is must needed to see risk factors trends and ensure data comparability over time and between different sites.

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