



Knowledge of Modifiable Risk Factors of Non Communicable Diseases (NCDs): A Cross Sectional Study from Urban Slum Bhopal

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ABSTRACT

Background: In developing countries like India now non communicable diseases (NCDs) are emerging as significant cause of morbidity & mortality. NCDs are caused, to a large extent, by four behavioural risk factors that are pervasive aspect of economic evolution, rapid urbanization and 21st century lifestyles. Individual's knowledge and awareness about NCDs & their risk factors is an important part of population based preventive strategy.

Objectives: The study conducted to determine the knowledge about modifiable risk factors for NCDs

Material & method: A community based cross-sectional study was carried out in the field practice area of urban health training centre of the department of community medicine of PCMS & RC, Bhopal using s questionnaire.

Result: Most of the respondents (62%) were having average knowledge regarding modifiable risk factors for NCDs & only 8.1% respondents were having good knowledge for same. About 30.3% males and 29.9% females had good knowledge about modifiable risk factors although the gender difference was not statically significant.

Conclusion: It can be concluded from our study that knowledge regarding risk factors of non-communicable diseases was not satisfactory. The results highlighted the need and scope for health education and interventions to improve the awareness about NCDs and their risk factors.

Key words: NCD Knowledge, Risk factors, urban slum, Cross-sectional study

INTRODUCTION

Global Health mainly concern with infectious diseases like AIDS, Malaria and TB, for centuries communicable diseases were the main cause of death around the human race. Life anticipation was often restricted by uncontrolled epidemics.

Medical research achievements was started after the Second World War in terms of vaccinations, antibiotics and upgrading of life condition, NCD started emerging major health problem in developed world. In 1990 the leading causes of disease

burden were most of the infectious disease like, pneumonia, diarrhoeal diseases & some perinatal conditions etc. By 2020, it is predicted that NCDs will accounts more than two third of the global burden of disease, causing seven out of every ten deaths in developing countries, compared with less than half today.^{1,2}

NCD refer to diseases or conditions that occur in, or are known to affect, individuals over an extensive period of time and for which there are no known causative agents that are transmitted from one affected individual to another.³

With vast prolonged urbanization, globalization, industrialization with modernization, the price that the world is paying is a remarkable load of NCDs, also known as chronic diseases and, often listed as Lifestyle Disease that include cardiovascular disease (CVD), diabetes, obesity, stroke, cancers, and chronic obstructive pulmonary disease.⁴

A variety of factors which aid advancement and development in today's society such as globalization of trade, advanced technologies etc., act as a double edged weapon as they lead to positive health outcome on one hand and increased liability to poor health on the other hand as these contribute to sedentary lifestyle and unhealthy dietary pattern.⁵

The risk factors for many of these conditions are associated with lifestyle associated choices environmental and genetic factors. NCDs have emerged as the major causes of morbidity and mortality universally.⁶

Smoking habit, alcoholism, low quality diet intakes, physical inactivity are some of the established risk factors of the NCDs. These risk factors have 80% contribution in the development of NCDs. Cardiovascular Disease (CVD), Cancer, Chronic Obstructive Pulmonary Diseases (COPD) and Diabetes Mellitus (DM) is the most common NCDs around the globe and have been the leading cause of fatality in high-income world over the last five decay, and they are emerging as a leading cause of death in low and middle income world as well.⁷

Individual's knowledge and awareness about NCDs & their risk factors is an important part of population based preventive strategy. This knowledge of risk factors can then be applied to shift population distribution of these risk factors.

With this background the present study designs to determine the knowledge about modifiable risk factors for NCDs in urban field practice area of PCMS & RC Bhopal.

MATERIAL & METHOD:

It was Community based cross-sectional descriptive study conducted in urban slum of the field practice area of urban health training centre (UHTC), Department of Community Medicine People's College of Medical Sciences & Research Centre, Bhopal from July 2012 to Oct 2014.

Study population consisted all adult aged 25 year and above belongs from the study area.

We included those who were willing to participate in study, all persons, age more than 25 year and above. We excluded the participant's those who

were not willing to participate in study, not available for interview on account of absence or door locked, pregnant mothers and Individuals suffering from severe chronic illness requiring bed rest, physical disability and presence of communication barriers and non-co-operative.

Sample Size and Sampling: After conducting a pilot study among 100 individual of urban slum of study area revealed proportion of various risk factors and alcohol consumption was the least occurring risk factor in study area which was 24% among study population. Sample size was calculated by using the formula $n = 4pq / L^2$ so the sample size of 1266 came out to be maximum. Thus for this study, a sample of 1270 adults was studied.

The scoring in the Knowledge component was done by giving numerical marks. Responses to questions were coded such that correct answers scored one and incorrect answers scored zero. These scores were added to arrive at a single value out of a possible total score of 10 for knowledge. Minimum score that an individual can have was zero and maximum score that an individual can have=10.

Knowledge divided in three divisions.

Good knowledge: Respondents were considered to have good knowledge if they scored more than 66.6%, **Average Knowledge:** Respondents were considered to have average knowledge if they scored 33.3%- 66.6% and **Poor Knowledge:** Respondents were considered to have poor knowledge if they scored less than 33.3%.

Data analysis: The collected data was entered in excel sheet. All statistical analysis was carried out using SPSS version20 and Appropriate Statistical tools were applied wherever required like test of proportion, Chi-square test etc. Statistician from department of Community Medicine of the Medical College was consulted for guidance in analysing data.

Ethical Consideration: Research permission & Ethical approval was obtained from the RAC & Institutional Ethics Committee of PCMS & RC Bhopal respectively. The benefits, confidentiality, and voluntary participation features of the study will be explained and informed written consent will be taken from all the respondents. Strict confidentiality of data will be maintained.

RESULT

In present study distribution of study participants as per age, marital status, highest education level achieved, type of occupation and socioeconomic class. Maximum participants were from the age

Table-1: Socio-demographic profile of the study population

Socio-demographic factors	Male (n=624)	Female (n=646)	Total (n=1270)
Age (Year)			
25-35	169 (27.1)	161 (24.9)	330 (26.0)
36-45	185 (29.6)	143 (22.1)	328 (25.8)
46-55	110 (17.6%)	86 (13.3)	196 (15.4)
56-65	77 (12.3)	78 (12.1)	155 (12.2)
>65	83 (13.4)	178 (27.6)	261 (20.6)
Marital Status			
Single	46 (7.4)	03 (0.5)	49 (3.9)
Married	488 (78.2)	435 (67.3)	923 (72.7)
Divorced	05 (0.8)	06 (0.9)	11 (0.9)
Widow	80 (12.8)	153 (23.7)	233 (18.3)
Separated	05 (0.8)	49 (7.6)	54 (4.3)
Education			
Professional	0	0	0
Graduate and above	30 (4.7)	01 (0.2)	31 (2.4)
Intermediate	25 (4.0)	13 (2)	38 (3.0)
High school	91 (14.6)	54 (8.4)	145 (11.4)
Middle school	157 (25.2)	140 (21.7)	297 (23.4)
Primary school	202 (32.4)	195 (30.2)	397 (31.3)
Illiterate	119	243 (37.6)	362 (28.5)
Occupation			
Professional	0	0	0
Semi-professional	0	0	0
Clerical/Shop/Farm owner	90 (14.4)	06 (0.9)	96 (7.6)
Skilled worker	99 (15.9)	26 (4.0)	125 (9.8)
Semiskilled worker	77 (12.3)	36 (5.6)	113 (8.9)
Unskilled worker	268 (42.9)	147 (22.8)	415 (32.7)
Unemployed	90 (14.4)	14 (2.2)	102 (8.0)
Homemakers	0	417 (64.6)	419 (33.0)
Socioeconomic status¹⁸			
Lower	103 (16.5)	150 (23.2)	253 (19.9)
Upper lower	368 (59.0)	417 (64.6)	785 (61.8)
Lower middle	150 (24.0)	77 (11.9)	227 (17.9)
Upper middle	03 (0.5)	02 (0.3)	05 (0.4)
Upper	0	0	0

Table-2: Knowledge regarding diseases caused by Tobacco consumption, passive smoking & Alcohol (n=1270)

Knowledge variables	Frequency (%)
Diseases caused by Tobacco consumption	
Cancer	427 (33.6)
Heart ds	370 (29.1)
Both	341 (26.9)
don't know	132 (10.4)
Regarding Passive smoking	
Yes	626 (49.3)
No	384 (30.2)
don't know	260 (20.5)
Diseases caused by Alcohol consumption	
Cancer	333 (26.2)
Heart ds	224 (17.6)
liver ds	228 (18)
Stroke	357 (28.1)
don't know	128 (10.1)

group 25-35 years (26%), followed by 36-45 years age group (25.8%). Majority of respondents were from 'married' group (72.7%), followed by 'widowed' (18.3%), however single, divorced and separated contributed only 9%. Males were more educated in this study population as compared to female, with highest level of education received as 'graduates'. Maximum numbers of males were unskilled workers (42.9%) whereas maximum numbers of females were homemakers.

Maximum participants (61.8%) were from the upper lower class, followed by the lower socioeconomic class (19.9%). Only 5 participants (0.4%) were from the upper middle class and none of them were from the upper class. (Table-1)

When we were assessed knowledge regarding diseases caused by tobacco consumption nearly 36% of study population having knowledge that tobacco shall be one of the causative agents of cancer and only 10% of people don't know the effect of tobacco on health. In continuation Knowledge regarding passive smoking on health nearly half of study participants knew that fact that Passive smoking having ill effect on health but surprisingly nearly 10% people don't know the bad effect of alcohol on health. (Table-2)

822 of research participants had knowledge that fruit and vegetable consumption, one of the modifiable risk factors of cardiovascular diseases and 45% knew the fact that Salt restriction and exercise is the beneficiary for heart diseases, only 272 i.e. nearly 21% were unaware that sedentary life style is one of the modifiable risk factor of cardiovascular disease. (Table-3)

Regarding the assessment of meaning of hypertension more than 60% were know the correct fact that High BP means hypertension but half of peoples unaware that the complication of Hypertension. When we were assessed the knowledge regarding meaning of Diabetes less than half of the peoples given the correct response and nearly similar number of subject had knowledge of one complication of same. (Table-4)

Most of the respondents (62%) were having average knowledge regarding modifiable risk factors for NCDs & only 8.1% respondents were having good knowledge for same. 30.3% males and 29.9% females had good knowledge about modifiable risk factors although the gender difference was not statically significant. DF=4, two-tailed P value equals 0.9610 (Table-5)

Age wise distribution of knowledge of modifiable risk factors, was no association between increasing age with knowledge for modifiable risk factors. P value 0.811257 Df-4 (Table-6)

Table-3: Knowledge regarding modifiable risk factor of cardiovascular disease (n=1270)

Knowledge of Particular risk factor	Frequency (%)
Fruit and vegetable consumption	
Yes	822 (64.7)
No	204 (16.1)
Don't know	244 (19.2)
Role of Salt restriction and exercise	
Yes	579 (45.6)
No	450 (35.4)
Don't know	241 (19)
Sedentary lifestyle	
Yes	536 (42.2)
No	462 (36.4)
Don't know	272 (21.4)

Table-4: Awareness regarding meaning of Hypertension, Diabetes and their complication(n=1270)

Awareness of particular NCD	Frequency (%)
Meaning of Hypertension	
High BP	799 (62.9)
Tension in mind	230 (18.1)
don't know	241 (19)
Regarding what is Diabetes	
High blood sugar	608 (47.9)
High cholesterol	308 (24.3)
don't know	354 (27.9)
Regarding complication of Hypertension	
At least one	612 (48.2)
None	658 (51.8)

Table-5: Comparison of knowledge between the genders regarding NCD risk factors.

Knowledge categories	Male (n=624) (%)	Female (n=646) (%)	Total (n=1270) (%)
Good	48 (7.7)	54 (8.4)	102 (8.1)
Average	389 (62.3)	399 (61.7)	788 (62.0)
Poor	187 (30)	193 (29.9)	380 (29.9)

P value and statistical significance: The two-tailed P value equals 0.9610 By conventional criteria; this difference is considered to be not statistically significant.

Confidence interval: The mean of male minus female equals - 7.33 95% confidence interval of this difference: From -398.45 to 383.78

Intermediate values used in calculations: t = 0.0521, df = 4 standard error of difference = 140.868

Table-7 : Age wise Comparison of knowledge regarding NCD risk factors

Knowledge categories	Age categories (Years)					Total (n=1270)
	25-35 (n=330)	35-45 (n=328)	45-55 (n=196)	55-65 (n=155)	>65 (n=261)	
Good	24 (7.3)	33 (10.1)	12 (6.1)	14 (9.0)	19 (7.3)	380 (29.9)
Average	218 (66.1)	195 (59.4)	123 (62.8)	89 (57.5)	163 (62.5)	788 (62)
Poor	88 (26.6)	100 (30.5)	61 (31.1)	52 (33.5)	79 (30.3)	102 (8.1)
Mean & SD	110, 98.8	109.3, 81.4	65.3, 55.6	51.6, 37.5	87.0, 72.3	84.7, 65.7

ANOVA test P value 0.811257 Df- 4; Figure in parenthesis indicate percentage.

DISCUSSION

NCDs represent the iceberg phenomenon of the diseases spectrum. The hidden portion of iceberg is however, brought out only by community based surveys. Epidemiological field studies of NCDs are going importance over the past two decades. NCDs are dispersed from corner to corner of the globe irrespective of the socio-economic and demographic status with mounting tendency in low and middle income countries.

Also, there exists a worldwide and regional variation in the incidence and prevalence of the different subsets of NCDs. The present research attempted to provide information on peri urban population aged more than 25 years and their knowledge and practices of non communicable disease risk factors.

The present study revealed that only 29.1% knew about the effects of tobacco in causing cardiac disease and 33.6% of the subjects knew its harmfulness in causing cancer. Earlier studies among different groups have also reported similar findings.^{8-10.}

In the present more than study subject were aware that alcohol consumption having some relation to carcinogenicity, similar finding observe in the other study conducted by Cotter T et al.¹¹ More than half of participant knew that the beneficial role of Fruit and vegetable consumption and only 45% people aware regarding the Salt restriction and exercise. A study conducted by Rizwana B et al and Ammouri, A. A et al shows similar findings.¹²⁻¹⁴

Awareness regarding meaning of Hypertension, Diabetes only 62 & 42 percentage were aware respectively and more than half of were unaware their complication. Mohan D et al., in CURES-9 study conducted at Chennai among general population emphasized that more than 25% of the 26,000 subjects screened by standard questionnaires were unaware of the term called Diabetes and Jeyaraj D Pandian et al., in his study on awareness of risk factors for stroke highlighted that 21% of the total 942 individuals were unaware of even single risk factor for the stroke.^{15, 16}

As for as knowledge regarding risk factors of non-communicable diseases was concerned, 8.1% and 62% respondents in this study showed good & average knowledge respectively whereas 29.9% study population showed poor knowledge.

A study from slums in Mumbai revealed 84.4% respondents had poor knowledge regarding NCDs. This difference can be attributed to the fact that the slum in this study has a functioning UHTC of a Medical College, which runs several information, education and communication (IEC) drives in that area.¹⁷

Limitations: Despite instructions and additional clarification, recall bias may exist in the results relating to the food question on fruit and vegetable intake, and the questions regarding physical activity knowledge and practices.

RECOMMENDATION

The awareness about the role of risk factors in the causation of NCDs is relatively poor. Hence, lifestyle changes and dietary modifications should be promoted among the high risk groups in this category. More efforts need to be put in to increase knowledge in the community regarding NCDs. Efforts should be made to establish surveillance mechanism at the community level to monitor, evaluate, and guide policies and programmes.

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