Original Article

Study of Prevalence of Non Communicable disease risk factors using WHO-STEPs approach in a Slum locality of Bhopal city, Madhya Pradesh

Amreen Khan[1], Veena Melwani[1], Manju Toppo[2], Manju Dubey[3], Shoaib Arshad[4], Soumitra Sethia[5]

[1] PG Resident, [2] Associate Professor, Community Medicine, Gandhi Medical College,MP.

[3] SR, Community Medicine, AIIMS Raipur.

[4] SR, Ophthalmology, Government Medical College Vidisha,

[5] Assistant Professor, Community Medicine, Government Medical College, Khandwa

Abstract

Background: Non-communicable diseases (NCDs) are chronic conditions that progress slowly and are rarely completely curable .These diseases such as diabetes and cardiovascular diseases, pose an increasing public health challenge in India, especially due to changes in lifestyles, behaviors and the physical and social environments in cities[1].They are mainly caused by preventable behavioral risk factors, such as tobacco and alcohol consumption, unhealthy diet, and insufficient physical exercise[3].It is well known that a lot of diseases can be prevented by altering the life style and habits of people. This study was undertaken with the objective of studying the prevalence of risk factors for NCDs in the Anna Nagar slum locality of Bhopal city, Madhya Pradesh. **Material & Methods**: The study was conducted on the population of Anna nagar slums. The sample size was 180(calculated using the prevalence data of ICMR on NCDs) but 260 was covered. The household were selected using systematic random sampling and individuals from the houses were selected using KISH method as used in WHO STEPS approach. WHO STEPS questionnaire was used to collect data. Physical measurements were taken as per standard WHO protocol. Data were entered in MS-EXCEL and analysis was done using EPI INFO. **Results**: In the population, male members were 53% and females were 47% respectively. Mean age was 43.67±11.3 yrs.80% had not received any formal education.31% people had history of alcohol consumption and 16% of tobacco consumption. Only 36.2% participants had normal BMI. 35.8% were obese, 17.3% were overweight and 10.8% were underweight. Obesity was more in females as compared to males. Blood pressure was found to be elevated in 18.1% participants, HTN1 in 10.4% and HTN2 in 31.5% participants. 40% participants had normal blood pressure.**Conclusion**: The major population was illiterate. The risk factors like alcohol consumption and smoking was very prevalent and is largely attributed to the low awareness of people regarding risk factors

Key words: STEPS, Non-communicable diseases, Risk factors

Introduction- Non-communicable diseases (NCDs) are chronic conditions that progress slowly and are rarely completely curable. Non-communicable diseases (NCDs), such as diabetes and cardiovascular diseases, pose an increasing public health challenge in India, especially due to changes in lifestyles, behaviors and the physical and social environments in cities[1]. Every year, roughly 5.8 million Indians die from heart and lung diseases, stroke, cancer and diabetes. In other words, 1 in 4 Indians risks dying from an NCD before they reach the age of 70[2]. The four most common NCDs – cardiovascular diseases, cancers, chronic respiratory diseases, and diabetes – are mainly caused by preventable behavioral risk factors, such as tobacco and alcohol consumption, unhealthy diet, and insufficient physical exercise[3]. It is well known that a lot of diseases can be prevented by altering the life style and habits of people, and

Corresponding Author: Dr Veena Melwani
PG resident, Community Medicine. Gandhi Medical College.MP
Email- drmelwaniveena@gmail.com

Received: 12.10.2018 **Accepted:24.01.2019**

approach must be developed to identify the risks and combat them. The WHO STEP wise approach to surveillance (STEPS) is the WHO-recommended framework for NCD surveillance. STEPS offers an entry point for low and middle income countries to get started in NCD prevention and control activities. It is a simplified approach providing standardized materials and methods as part of technical collaboration with countries, especially those that lack resources[4]. This study was undertaken with the objective of studying the prevalence of risk factors for NCDs in the Anna Nagar slum locality of Bhopal city, Madhya Pradesh

Materials and methods-

The study was conducted on the population a slum of Bhopal. The sample size was 180 (calculated using the prevalence data of ICMR on NCDs) but 260 was covered. Ethical clearance was obtained from institutional ethics committee. The household were selected using systematic random sampling and individuals from the houses were selected using KISH method as used in WHO STEPS approach. Persons aged 25 to 64 years, residing in the study area for more than 6 months and gave their voluntary consent to participate was included in the study .Critically ill patients, pregnant women were excluded. Informed consent was taken from the individual. WHO STEPS based questionnaire was used for data collection. The data included demographic information and information on their diet, physical activity and other NCD risk factors. Physical measurements were taken as per standard WHO protocol. Blood pressure measurement was done using mercury sphygmomanometer by the investigator. Those requiring further investigation and treatment were referred appropriately. Data were entered in MS-EXCEL and analysis will be done using EPI INFO.

Results-

In the population, male members were 53% and females were 47% respectively. Mean age was 43.67±11.3 yrs. The level of education was no formal schooling followed by primary school completed. The illiteracy was higher amongst females. High proportion of females was housewives. The residents were predominantly Hindu by religion. 80.8% of participants were currently married followed by widows. Current smoking of tobacco product was present in 15.8% of participants, 27.1% males and 2.5% females respectively. The use of smokeless tobacco was higher than the smoked form. 60% males and 33.3% females gave positive response amounting to total consumption in 47.7%. 17.7% and 20% participants were exposed to passive smoking at work and home respectively. Also, the alcohol consumption was present amongst 54.3% males and 31.2% females respectively. The intake of fruit was poor amongst the participants. 26.5% did not consume any fruit in the whole week followed by 52.3% who consumed ≤3 serving per week. Only 21.2% consumed fruit >3 serving per week. The veggie intake was >3 serving per week in 85% individuals followed by ≤3 serving per week in 10.4% and no intake in 4.6%. 80.4% participants said they are never involved in any vigorous activity throughout the week whereas 10% were involved for ≤3 days per week and 9.6% were involved for >3 days per week. 34.6%participants were involved in moderate intensity work for >3 days per week, 12.7% for ≤3 days per week and

Table 1- Distribution of Study population by Education

Level of Education	Total (%) N=260	Male (%) N=140	Female (%) N=120
No Formal Schooling	80(30.8)	27(19.3)	53(44.2)
Less Than Primary School	23(8.9)	15(10.7)	8(6.7)
Primary School Completed	74(28.5)	46(32.9)	28(23.3)
Secondary School Completed	45(17.3)	27(19.3)	18(15.)
High School Completed	26(10)	17(12.1)	9(7.5)
College/University Completed	8(3.1)	5(3.6)	3(2.5)
Post Graduate Degree	4(1.5)	3(2.1)	1(0.8)
Total	260(100)	140(100)	120(100)

Table 2. Distribution of participants according to occupation

Type of Work	Total (%) N=260	Male (%) N=140	Female (%) N=120
Government employee	5(1.9)	4(2.9)	1(0.8)
Non-government employee	57(21.9)	48(34.3)	9(7.5)
Self-employed	105(40.4)	65(46.4)	40(33.3)
Non-paid	5(1.9)	3(2.1)	2(1.7)
Student	4(1.5)	3(2.1)	1(0.8)
Homemaker	62(23.9)	1(0.7)	61(50.8)
Retired	3(1.2)	3(2.1)	0(0)
Unemployed (able to work)	10(3.9)	7(5)	3(2.5)
Unemployed (unable to work)	9(3.5)	6(4.3)	3(2.5)
Total	260(100)	140(100)	120(100)

Table 3.Smoking and Alcohol use amongst the study participants

Risk factors	Total (%)	Male (%)	Female (%)
Current smoking of tobacco product	41(15.8)	38(27.1)	3(2.5)
Current use of smokeless tobacco	124(47.7)	84(60)	40(33.3)
Passive smoking at work	46(17.7)	32(22.9)	14(11.7)
Passive smoking at home	52(20)	25(17.9)	27(22.5)
Alcohol consumption	81(31.2)	76(54.3)	5(4.2)

Table 4- Distribution of participant according fruit and vegetable intake

Item	Number of servings	Total (%)	Male (%)	Female (%)
Fruit intake(per week)	0 serving per week	69(26.5)	48(34.3)	21(17.5)
	=3 serving per week	136(52.3)	65(46.4)	71(59.2)
	>3 serving per week	55(21.2)	27(19.3)	28(23.3)
Vegetable intake (per week)	0 serving per week	12(4.6)	5(3.6)	7(5.9)
	=3 serving per week	27(10.4)	15(10.7)	12(9.9)
	>3 serving per week	221(85)	120(85.7)	101(84.2)

Table 5- Distribution of participants according to Physical Activity

Item	Number of days	Total (%)	Male (%)	Female (%)
Vigorous work (per week)	0 days per week	209(80.4)	105(75)	104(86.7)
	=3 days per week	26(10)	14(10)	12(10)
	>3 days per week	25(9.6)	21(15)	4(3.3)
Moderate work (per week)	0 days per week	137(52.7)	68(48.6)	69(57.5)
	=3 days per week	33(12.7)	20(14.3)	13(10.8)
	>3 days per week	90(34.6)	52(37.1)	38(31.7)

52.7% were never involved. Only 36.2% participants had normal BMI. 35.8% were obese, 17.3% were overweight and 10.8% were underweight. Obesity was more in females as compared to males. Blood pressure was measured using a sphygmomanometer and was found to be pre hypertensive in 18.1% participants, HTN1 in 10.4% and HTN2 in 31.5% participants. 40% participants had normal blood pressure.

Discussion:

In the present study, 40.4% population was self employed followed by private jobs. In a similar study conducted by Tondare M B et al[5], highest number of participants were unemployed or students (34.4%), followed by farmer(22%), labourer(22%), housewife (12.9%) and skilled workers(7.9%). The difference is due to the locality as this is situated near a public sector plant and majority of the participants work as service providers in the township.Current smoking of tobacco product was present in 15.8% of participants. The findings are similar to the study conducted by Lashkar A et al[6] in which the current smokers were 17.6%, and the study conducted by Oommen M A et al[7] in which the current smokers were 11.6%.The alcohol consumption in the present study was quite high, 54.3% amongst males and 4.2% females respectively. This is not comparable to other studies. The intake of fruit was poor amongst the participants. 26.5% did not consume any fruit in the whole week followed by 52.3% who consumed ≤3 serving per week. Only 21.2% consumed fruit >3 serving per week. The veggie intake was >3 serving per week in 85% individuals followed by ≤3 serving per week in 10.4% and no intake in 4.6%. In a study conducted by Garg A et al[8], 94.5% people consumed less than 5 servings per day of fruits and veggies whereas 34% consumed less than 3 per day. 80.4% participants said they are never involved in any vigorous activity and 52.7% were never involved in any moderate activity. The findings are similar to that of Garg A et al[8] in which 80% participants were physically inactive. Obesity was found in 35.8% participants, similar to the findings of Nagendra K et al[9] in which it was 31.6%.Blood pressure was found to be elevated in 18.1% participants, HTN1 in 10.4% and HTN2 in 31.5% participants. 40% participants had normal blood pressure. The findings differ from the previous studies since cut off for BP has changed recently rendering the findings incomparable.

Table 6. Distribution of participants by BMI

BMI	Total (%)	Male (%)	Female (%)
Normal	94 (36.2)	58 (41.4)	36 (30)
Obese	93 (35.8)	43 (30.7)	50 (41.7)
Over weight	45 (17.3)	26 (18.6)	19 (15.8)
Underweight	28 (10.8)	13 (9.3)	15 (12.5)
Total	260 (100)	140 (100)	120 (100)

Conflict of interest: None declared
Sources of support: Nil

References:

1. Kroll M, Phalkey RK, Kraas F. Challenges to the surveillance of non-communicable diseases–a review of selected approaches. BMC Public Health. 2015 Dec;15(1):1243.
2. WHO. Non-communicable diseases. Available at: http://www.who.int/ mediacentre/factsheets /fs355/en/. Accessed on 18 May 2017.
3. Patel V, Chatterji S, Chisholm D, Ebrahim S, Gopalakrishna G, Mathers C, et al. Chronic diseases and injuries in India. Lancet 2011;377:413-28)

4. Global status report on non-communicable diseases 2014. World Health Organization. 2017. Available at http://apps.who.int/iris/bitstream/10665/148114/1/9789241564854_eng.pdf?ua=1. Accessed on 18 May 2017.
5. Tondare MB, Havale NG, Bedre RC, Kesari P. Prevalence of risk factors of non-communicable diseases among rural population of Bidar. International Journal Of Community Medicine And Public Health. 2017 Jul 22;4(8):2681-5.
6. Laskar A, Sharma N, Bhagat N. Lifestyle disease risk factors in a North Indian Community in Delhi. Indian journal of community medicine: official publication of Indian Association of Preventive & Social Medicine. 2010 Jul;35(3):426.
7. Oommen AM, Abraham VJ, George K, Jose VJ. Prevalence of risk factors for non-communicable diseases in rural & urban Tamil Nadu. The Indian journal of medical research. 2016 Sep;144(3):460.
8. Garg A, Anand T, Sharma U, Kishore J, Chakraborty M, Ray PC, Ingle GK. Prevalence of risk factors for chronic non-communicable diseases using who steps approach in an adult population in Delhi. Journal of family medicine and primary care. 2014 Apr;3(2):112
9. Nagendra K, Nandini C, Belur M. A community based study on prevalence of obesity among urban population of Shivamogga, Karnataka, India. International Journal Of Community Medicine And Public Health. 2016 Dec 21;4(1):96-9

How to cite this article: Khan A, Melwani V, Toppo M, Dubey M, Arshad S, Sethia S. Study of Prevalence of Non Communicable disease risk factors using WHO-STEPs approach in a Slum locality of Bhopal city, Madhya Pradesh. J Comprehensive Health.2019; 7(1): 34-37.