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Prevalence and risk factors of non -communicable disease among population attending medical camp organized by Ayush Healthcare in Bakhtawarpur, Delhi

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ABSTRACT

An unhealthy lifestyle that includes exposure of an individual to risk factors such as smoking and alcohol with lack of physical activity and hereditary characteristics of some diseases may lead to non-communicable disease which is currently the leading cause of preventable death and disability in India and the four major identified Non Communicable Disease (NCDs) are diabetes, chronic respiratory disease, cardiovascular disease (heart attacks and strokes) and cancer. NCDs are the leading cause of death, accounting for over 60% of all mortality cases in India placing them ahead of communicable disease, Maternal, prenatal and nutritional conditions (WHO 2014). India being the populous country of about 1.3 billion, contributes more than 2/3rd of total death due to NCDs (WHO, 2014; united nation statistics division). Methods-A cross-sectional study was carried out in July 2019 in the population above 30 years of age attending the medical check-up camp organized by Ayush Healthcare, BakhtawarPur, and Delhi. A quantitative approach was used to assess the population. Sample Size was 50 and used a convenient sampling technique. Data collection tool was CBAC form of NPCDCS containing 6 parameters to assess population under having the risk of NCDs & clinical examination was done using BP apparatus, Glucometer, height and weight measurement. The method of data collection was the Clinical examination and interview technique. Data was entered and analyzed using SPSS version 21.0. Conclusion-Prevalence of risk of NCD using CBAC was found to be significantly associated with family history (P= 0.001 ODR=14), physical activity (P=0.003, ODR=15.1) and smoking (P=0.02), RBS (P =0.002, ODR=10.6), systolic BP (P=0.04 ODR=5). When Clinical parameters were used to identify the risk of having NCD, it was found that variable like sex (P=0.03 ODR=0.2), family history (P=0.01, ODR=9.5) , waist measurement (P=0.02) , BMI (P=0.01 ODR=0.69) , RBS (P=0.02 ODR=0.69) Systolic BP (P<0.001 , ODR=0.47) and diastolic BP (P<0.001, ODR = 0.56) were statistically associated with risk of NCD.

Keywords— Non-communicable disease, Prevalence, Clinical parameter, Risk factors, Community-based assessment checklist

1. INTRODUCTION

When we discuss about non communicable disease, according to “WHO” and “NPCDCS” an unhealthy lifestyle that includes exposure of an individual to risk factors such as smoking and alcohol with lack of physical activity and hereditary characteristics of the some disease may lead to non-communicable disease which is currently the leading cause of preventable death and disability in India and the four major identified non communicable disease are diabetes, chronic respiratory disease, cardiovascular disease(heart attacks and strokes) and cancer.

NCDs are the leading cause of death, accounting for over 60% of all mortality cases in India placing them ahead of communicable disease, Maternal, prenatal and nutritional conditions (WHO 2014). India being the populous country of about 1.3 billion, contributes more than 2/3rd of total death due to NCDs (WHO, 2014; united nation statistics division). According to WHO’s NCD country profile, it is estimated that mortality profile due to NCD’s in India is in figure 1. A risk factor is any exposure of an individual that increases the likelihood of developing the disease. For example, Smoking may lead to lung cancer. In nutshell, today’s risk behavior may lead to tomorrow’s disease. Thus, primary and secondary prevention of chronic disease and their common risk factors provides the most sustainable and cost effective approach to chronic disease prevention and control (NPCDCS).

As per the 2011 report on NCD status in SEAR, raised BP, raised blood glucose and tobacco use were the three major risk factors responsible for majority of deaths annually in this region. The prevalence of raised BP was greater in Myanmar (highest – 42%), Indonesia, Sri Lanka, Bhutan and Thailand as compared to that in India (about 35%); however, Nepal, Maldives, Bangladesh and Democratic Republic of Korea (lowest -19%) showed a relatively lesser prevalence of the same. For raised blood glucose (diabetes), Bhutan showed the highest prevalence i.e. 12-13% and India, second highest i.e. 11%, among the SEAR countries. The prevalence of smoked tobacco products use was slightly lesser in Sri Lanka (14.1%) while it was much higher in Thailand (24%), Bangladesh (24%), Myanmar (24%), Maldives (27%), Nepal (32%) and Indonesia (highest - 33%), as compared to in India (15%). The prevalence of smokeless tobacco (SLT) products usage was higher in India (25.9%) as compared to that in Thailand (1.3%), Sri Lanka (15.8%), Nepal (18.6%) and Bhutan (19.4%); however, Bangladesh (27.2%) and Myanmar (51.4%) showed relatively higher SLT consumption than in India (WHO, 2011).¹

The burden of non-communicable diseases (NCDs) is disproportionately carried by low-income and middle-income countries and disadvantaged sectors of society such as prisoners.³ The common modifiable risk factors that lead to mortality from non-communicable diseases (NCDs) include high blood pressure, suboptimum blood glucose, low intake of fruits and vegetables, use of tobacco, high blood cholesterol, indoor smoke from solid fuels, physical inactivity, overweight and obesity, and use of alcohol. WHO recommends the use of standard tools for surveillance of risk factors for NCDs to enable comparisons across populations? The northeastern parts of India have a large population of tribals with distinct lifestyles. The use of tobacco in some form by young people ranged from 48% in Sikkim to 77% in Mizoram; this is above the Indian average of 39%. Alcohol consumption among young men of the northeast was also above the Indian average of 21%. In 2007–08, a survey was done in Mizoram to ascertain the prevalence of risk factors for NCDs using the standard WHO STEPS tools. The survey found a high prevalence of various risk factors.⁴

In a vast country like India, although the general trend indicates an increase in common adverse factors, there are regional differences as well, influenced by diet, culture, socio-economic status, etc. States such as Kerala and Tamil Nadu which have been performing higher in terms of health indicators such as reproductive and child health and have high indices of development, are possibly at higher risk of threats due to lifestyle diseases, with a study in Kerala showing rates of some risk factors to be similar to that in the United States.⁵

2. MATERIALS AND METHOD

Quantitative approach was used to assess the population. Sample Size was 50 and used convenient sampling technique. Data collection tool was CBAC form of NPCDCS containing 6 parameters to assess population under having risk of NCDs & clinical examination was done using BP apparatus, Glucometer, height and weight measurement. Method of data collection was *Clinical examination and interview technique*

2.1 Inclusion criteria

- Included population above 30 years of age.
- Included population available and accessible at the time of data collection.
- Include population attended the camp

2.2 Exclusion criteria

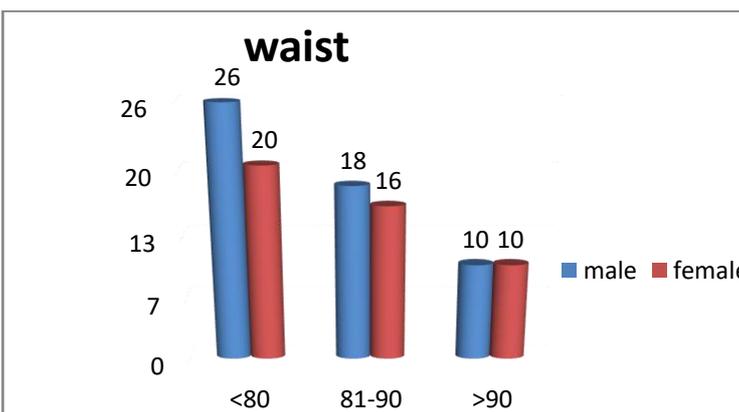
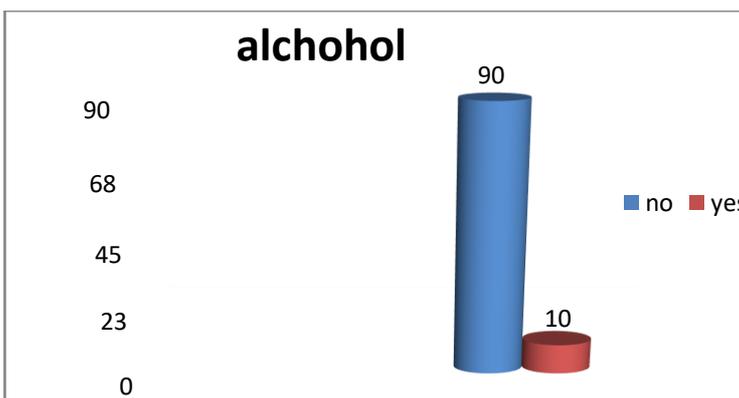
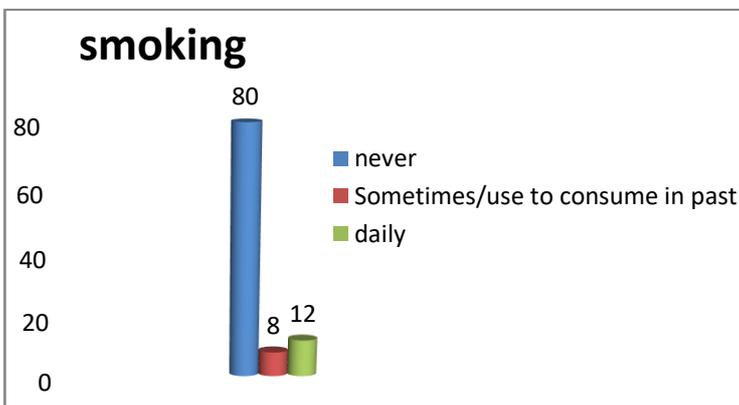
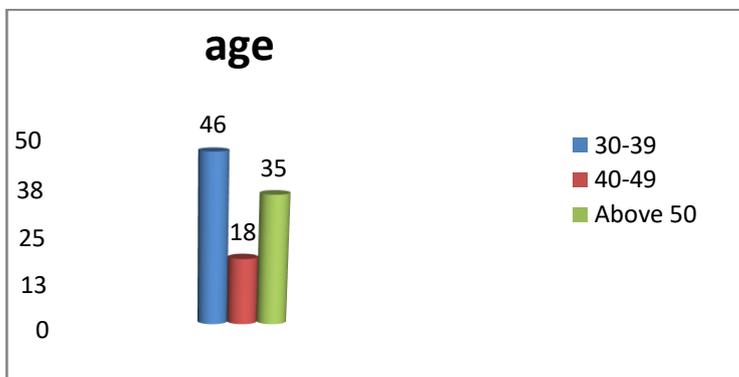
- Excluded population below 30 years of age
- Excluded mentally disabled patients

Table 1: Distribution of Frequency and percentage of risk factors

Risk factors	Category		Frequency		Percentage	
Age	30-39		23		46	
	40-49		9		18	
	Above 50		18		35	
Smoking	never		40		80	
	Sometimes/use to consume in past		4		8	
	daily		6		12	
alcohol	no		45		90	
	yes		5		10	
Waist	female	male	female	male	female	male
	<80	<90	13	10	26	20
	81-90	91-100	9	8	18	16
	>90	>90	5	5	10	10
Physical activity (in minutes)	At least 150 minutes		23		46	
	<150 minutes		27		54	
Family history of ncd	no		30		60	
	yes		20		40	

Table 2: Distribution of frequency and percentage of clinical examination

Clinical parameters	category	frequency	percentage
RBS	80-130	36	72
	>130	14	28
BP systolic	normal	21	42
	More than 120	29	58
BP diastolic	normal	25	50
	More than 80	25	50
Basal metabolic index (BMI)	Below 24.9	28	56
	Above 25	22	44



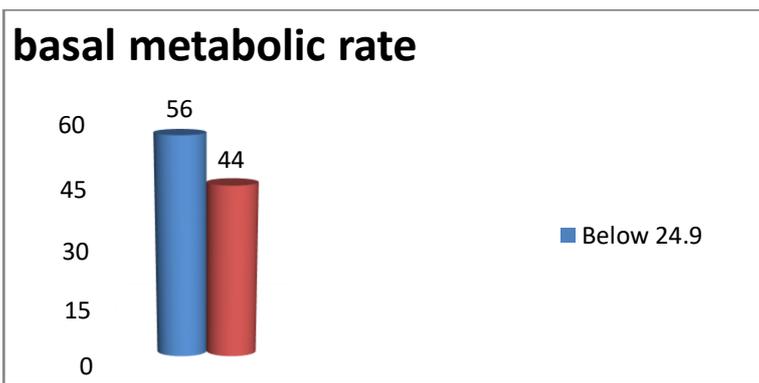
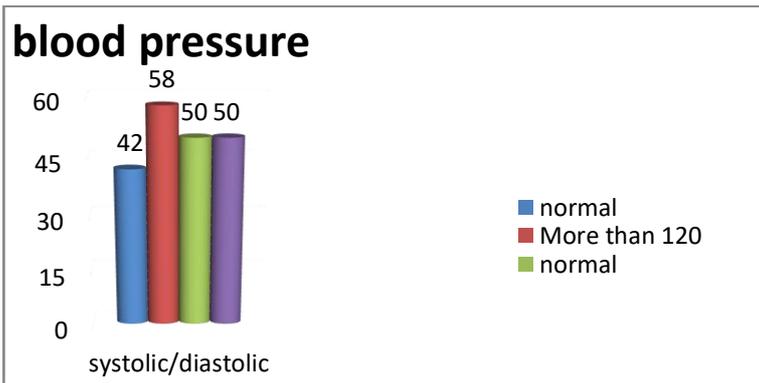
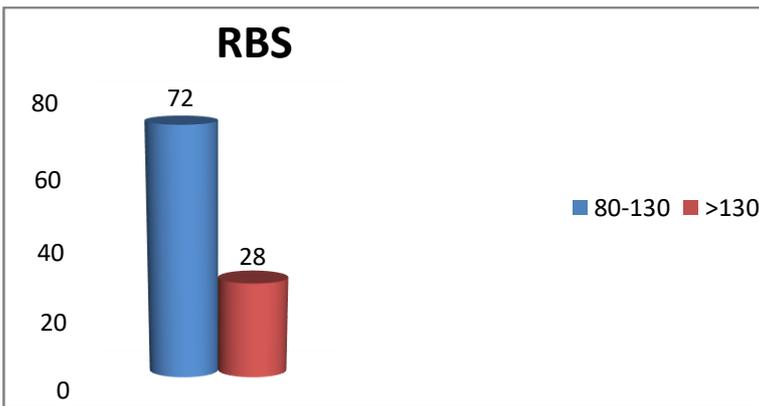
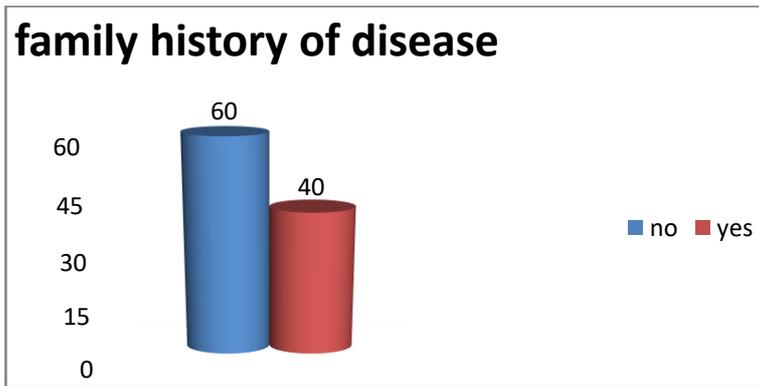
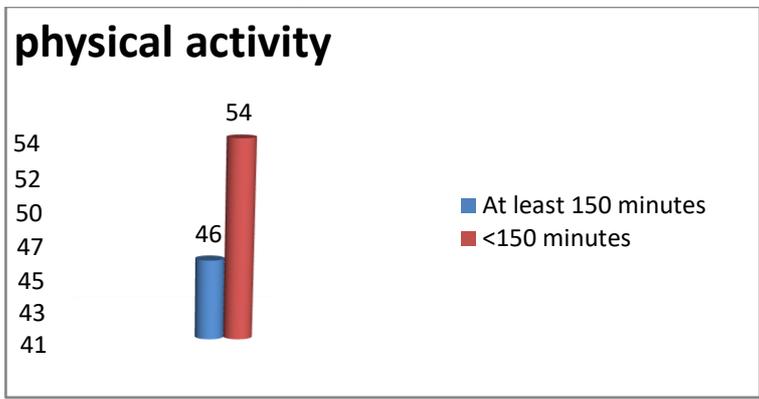


Table 4: Association and correlation between risk factors with non-communicable disease

Risk factors	Category	NO	yes	Chi2	df	P value	Odds ratio	R
Age	30-39	20(87%)	3(13%)	3.7	2	0.156	-	0.27
	40-49	7 (77.8%)	2(22.2%)					
	Above 50	11(61.1%)	7(38.9%)					
Gender	male	18(78.3%)	5(21.7%)	0.11	1	0.49	1.26	0.049
	female	20(74.1%)	7(25.9%)					
Smoking	never	32(80%)	8(20%)	7.6	2	0.02*		0.28
	Sometimes/use to consume in past	4(100%)	0					
	daily	2(33.3%)	4(66.7%)					
Alcohol	no	35(77.8%)	10(22.2%)	0.78	1	0.34	2.33	0.125
	yes	3(60%)	2(40%)					
Waist (total)	Normal range	20(87%)	3(13%)	1.52	2	0.46	-	0.23
	Medium range	13(76.5%)	4(23.5%)					
	High range	5(50%)	5(50%)					
Physical activity (in minutes)	At least 150 minutes	22 (95.7%)	1(4.3%)	9.01	1	0.003*	15.12	0.425
	<150 minutes	16(59.3%)	11(40.7%)					
Family history	no	28(93.3%)	2(6.7%)	12.35	1	0.001*	14	0.49
	yes	10(50%)	10(50%)					
RBS	80-130	32(88.9%)	4(11.1%)	11.71	1	0.002*	10.66	0.48
	>130	6(42.9%)	8(57.1%)					
BP systolic	normal	19(90.5%)	2(9.5%)	4.16	1	0.041*	5	0.288
	More than 120	19(65.5%)	10(34.5%)					
BP diastolic	normal	19(76%)	6(24%)	0	1	0.62	1	0
	More than 80	19(76%)	6(24%)					
Basal metabolic index (BMI)	Below 24.9	23(82.1%)	5(17.9%)	1.31	1	0.208	2.15	0.16
	Above 25	15(68.2%)	7(31.8%)					
	YES	27(69%)	12(39%)					

Table 5: Association and correlation between risk factors and clinical parameters with non-communicable disease

variables	P value		Odds ratio		R value	
	CBAC indicated Risk	Clinical Parameters indicated Risk	CBAC indicated Risk	Clinical Parameters indicated Risk	CBAC indicated Risk	Clinical Parameters indicated Risk
Age group	0.15	0.7	—	—	0.2	0.1
sex	0.49	0.03*	1.26	0.19	0.04	-0.29
smoking	0.02*	0.17	—	—	0.28	0.25
alcohol	0.34	0.27	2.3	0.75	0.12	0.17
waist	0.07*	0.02*	—	—	0.31	0.38
Physical activity	0.003*	0.62	15.1	0.97	0.42	0
Family history	0.001*	0.01*	14	9.5	0.49	0.33
RBS	0.002*	0.016*	10.66	0.69	0.48	0.33
BMI	0.20	0.001*	2.17	0.69	0.16	0.47
Systolic BP	0.04*	<0.001*	5	0.47	0.28	0.62
Diastolic BP	0.629	<0.001*	1	0.56	0	0.53

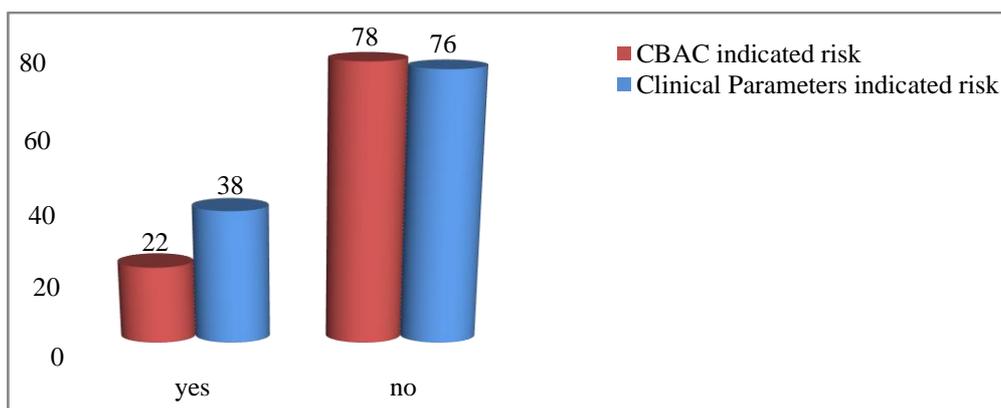


Fig 1: Bar graph showing population under the risk of having non communicable disease according to CBAC (score above 4) and clinical examination.

3. DISCUSSION AND CONCLUSION

Two parameters were used to identify the risk of having NCD, viz. Community Based Assessment Checklist (CBAC) for early detection of NCDs. Prevalence of risk of NCD using CBAC was found to be significantly associated with family history ($P=0.001$ ODR=14), physical activity ($P=0.003$, ODR=15.1) and smoking ($P=0.02$), RBS ($P=0.002$, ODR=10.6), systolic BP ($P=0.04$ ODR=5). When Clinical parameters were used to identify the risk of having NCD, it was found that variable like sex ($P=0.03$ ODR=0.2), family history ($P=0.01$, ODR=9.5), waist measurement ($P=0.02$), BMI ($P=0.01$ ODR=0.69), RBS ($P=0.02$ ODR=0.69) Systolic BP ($P<0.001$, ODR=0.47) and diastolic BP ($P<0.001$, ODR = 0.56) were statistically associated with risk of NCD.

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