Original Research Article

Prevalence of Risk Factors for NCDs and its Associated Factors in Rural Field Practice Area of RDJMMCH, Turki, Muzaffarpur

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Abstract

Introduction: Non-communicable diseases (NCDs) are diseases that are not transmissible directly from one person to another. NCDs mainly consists of cardio vascular diseases, diabetes, stroke etc.It accounts for 68% of global deaths. The prevalence rates in India is 1.6% to 7.4% and 1% to 13.2% in rural and urban population respectively.

Objective: To determine the prevalence and associated risk factors for NCDs in rural field practice areas of RDJMMCH, Turki, Muzaffarpur.

Methods: A cross-sectional study done among people above 30 years of age residing in study area from March to April, 2023. Data was collected using CBRA (community based risk assessment) checklist for NCDs. Sample size of 157 was calculated assuming the prevalence of risk factor for NCDs being 30% with 95% confidence interval and absolute precision of 7.5%. Systematic random and simple random sampling was applied.

Results: Mean age of participants was 47.9 years. Majority of them were females (56%) belonging to Hindu religion (98%). 41% were illiterate and major occupation practiced was farming (74%). Prevalence of risk factor for NCDs was 17.2%. On performing Chi-Square test smoking, alcohol, physical inactivity and family history of NCD's were found to be significantly associated.

Conclusion: As prevalence of risk factor for NCDs is 17.2%. Thus, it is the need of hour to have timely update about the disease and motivate them for healthy lifestyle.

Keywords: NCDs, Riskfactors, Rural field practice area

Introduction

Non-communicable diseases (NCDs) are diseases that are not transmissible directly from one person to another. NCDs mainly consists of cardio vascular diseases, diabetes, stroke etc

Non-communicable diseases (NCD) accounts for 68% of global deaths with cardiovascular diseases being the leading cause (46% of all NCD deaths).

Asian Region (SEAR) accounts for 20.8% of total CVD deaths. Compared with all other countries, India suffers the highest loss in potentially productive years of life, due to deaths from CVD in people aged 35-64 years.

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India is currently experiencing a rapid epidemiologic transition. The escalating epidemic of NCDs is a public health challenge in our country. WHO estimates that these diseases (with mostly preventable risk factors) account for 60% of all deaths and significant morbidity in India.[1]

The globe is witnessing a rapid epidemiological transition. Infectious and nutritional diseases are receding among adults, Where as non-communicable diseases are becoming increasingly common as the cause of morbidity and mortality. In recent years, most of the developing countries including India are facing this challenge.

The CAD has assumed the "epidemic" proportion in India and many other developing countries. The prevalence rates can be estimated from several studies over the past several decades which have ranged from 1.6% to 7.4% in rural population and 1% to 13.2% in urban population. Though the disease is more prevalent in urban population, it is progressively increasing in rural population in terms of absolute numbers.[2]

Besides increasing the life expectancy of the Indian population, greater connectivity to urban areas allows rural populations to adopt urban lifestyles without migration to urban areas. Prevalence of risk factors for NCDs and its associated factors in rural population has gained public health importance, as two thirds of India's population live in rural areas. It is well known that rural populations have limited access to health care and limited ability to bear the high cost of treatment.[3]

The most important behavioral risk factors of heart disease and stroke are unhealthy diet, physical inactivity, tobacco use, and harmful consumption of alcohol. Effects of the behavioral risk factors may show up in individuals as raised blood pressure, raised blood glucose, raised blood lipids, and overweight and obesity. These "intermediate risks factors" can be measured in primary care facilities and indicate an increased risk of heart attack, stroke, heart failure, and other complications.[4]

The NFHS surveys provide valuable insights into the health of rural India but there is a growing recognition that they may not be representative of the changing demographic profile of the country and therefore are not capturing the true patterns of disease burden. NFHS-5 Survey sampled women aged 15–49 and men aged 15–54 years, and therefore, cannot provide information about the prevalence of NCDs in older adults, who represent a growing proportion of the Indian population and in whom the incidence of NCDs and their associated risk factors is known to be higher.[5]

Hence, this cross sectional study was planned in a rural area which is near to the town area with the objective of determining the prevalence for risk factor for NCDs and its associated factors.

Objective

1. To Determine the prevalence for NCDs In Rural Field Practice Areas Of RDJMMMCH,Turki,Muzaffarpur
2. Associated Factors for NCDs In study population.

Material and Methods

Cross sectional study was carried out in Kurahhani village, (with population of around 10000) the rural field practice area of department of Community Medicine, RDJMMCH, Turki. The study period was from March to April 2023. Simple random sampling and systematic random sampling was applied for the study population above 30 years and not severely ill.

Sampling method and procedure:

Sample size was calculated using formulae-z^2 PQ/d^2

Where Z= relative deviate (1.96)

P= 30%[1] Q= 100-p

D=7.5% calculated sample size is 143

10% non response =14

Total sample size=143+14=157

Total population above 30 years =2669

Sampling interval=2669/157=17

The entire village was divided in terms of lane with respect to center of village. 1st lane was selected using simple random sampling (bottle method).from the chosen lane 1st house was selected using lottery

method. systematic random sampling for further houses(every 17th house). Each lane was covered in this way. Those houses with more than one eligible person for study, again lottery method was used and one person was selected from one house.

Data was collected by interns posted in the rural health center after taking verbal informed consent from the participants. The Questionnaire consisted of two parts, first part had basic socio demographic data of the study participants such as age, sex, address, education, and socio economic status. The second part included community based risk assessment checklist (CBRA)for NCDs[6].

Inclusion and exclusion criteria:

Those who were above 30 were included and those below 30 years, severely ill and did not wish to participate were excluded from the study.

Statistical analysis: Data entry was done using Microsoft excel 2010 and analysis was done using SPSS v23.0. Descriptive statistics like percentages, frequencies, mean were calculated and chi-square was used to find out the association, $p<0.05$ was considered significant.

Results

Total 157 patients participated in the study.

Table 1: Distribution of study participantsof RHTC according to socio-demographic characteristics

Parameters	RURAL Health centre (n=157)
AGE	
30-39	43(27.45%)
40-49	46(29.36%)
>50	68(43.33%)
GENDER	
Males	69(43.92%)
Females	88(56.1%)
RELIGION	
Hindu	155(98%)
Muslim	02(2%)
Others	00
EDUCATION	
Illiterate	64(40.8%)
Primary	39(24.8%)
High school	48(30.6%)
Secondary	01(0.6%)
Graduate	05(3.2%)
Post graduate	00
OCCUPATION	
Unskilled	04(2.5%)
Semiskilled	116(74%)
Skilled	13(8.3%)
Semi professional	2(1.3%)
Professional	0
Unemployed	22(14%)

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TYPE OF FAMILY	
Nuclear	63(40.1%)
Three generation	42(26.8%)
Joint	52(33.3%)
SOCIO-ECONOMIC STATUS *B.G. Prasad classification.[7]	
Upper Class I	5(3.25%)
Upper Middle Class II	20(12.7%)
Middle Class III	35(22.3%)
Lower Middle Class IV	46(29.3%)
Lower Class V	51(32.5%)

Table 2: Prevalence of risk factors for NCDs

VARIABLES	**CATEGORIES**	**SCORE<4**	**SCORE >4**	**P value**
Age	30-39	38(88.4%)	5(11.6%)	.333
	40-49	39(84.8%)	7(15.2%)	
	>50	53(77.9%)	15(22.1%)	
Gender	Male	59(85.5%)	10(14.5%)	.426
	Female	71(80.7%)	17(19.35%)	
Religion	Hindu	113(71.9%)	42(26.7%)	Test couldn't be applied
	Muslim	0	2(1.2%)	
Education	Illiterate	49(76.6%)	15(23.4%)	Test couldn't be applied
	Primary	34(87.2%)	5(12.8%)	
	Secondary	41(85.4%)	7(14.6%)	
	Higher secondary	1(100%)	0	
	Graduate	5(100)	0	
	Post graduate	0	27(17.2%)	
Occupation	unemployed	16(72.7%)	6(27%)	Test couldn't be applied
	Unskilled	3(75.0%)	1(25.0%)	
	Semi-skilled	99(85.3%)	17(14.7%)	
	Skilled	10(76.9%)	3(23.1%)	
	Semiprofessional professional	2(100%)	0	
Type of family	Nuclear	49(77.8%)	14(22.2%)	0.84
	3 generation	33(78.6%)	9(21.45%)	
	joint	47(92.3%)	5(7.7%)	

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Socio-economic status	Class l	5(100%)	0	Test couldn't be applied
	Class ll	17(85.0%)	3(15.0%)	
	Class lll	24(68.6%)	11(31.4%)	
	Class lv	39(84.8%)	7(15.2%)	
	Class v	45(88.2%)	6(11.8%)	
Smoke/smokeless products	Yes	83(95.45%)	4(4.6%)	0.000*
	No	47(67.1%)	23(32.9%)	
Alcohol	Yes	2(22.2%)	7(77.8%)	0.000*
	No	128(86.5%)	20(13.55)	
Physical activity	<150 min a week	99(95.2%)	5(4.8%)	0.000
	>150 min a week	31(58.5%)	22(41.5%)	
Family history	Yes	16(44.4%)	20(17.2%)	0.000
	No	114(94.2%)	7(5.8%)	

Table 1 shows –Majority population were Hindu (98%) and females were around (56.1%) ,participants above the age of 50 years were (43.33%). Around (40.8%) were illiterate and belonged to lower strata-CLASS V (32.5%) according to B G Prasad scale. The above data of the study shows that 74% of the population were semi skilled.

Table 2 - In our study, the variables like age, gender, religion, occupation, socio economic status and lifestyle habits were categorized into two score , one < 4 and the other one > 4 for which test of association (chi-sqaure and fisher's test).was applied

Variables like alcohol consumption, physical activity and family history for NCD was found to be significant with P value < 0.0001. Other than this, Age ,Gender and type of family p value was >0.05 and in rest of the variables data was insufficient for any test application.

Discussion

Present study showed mean age of the study participants were 47.96 years and around (98.75%) were Hindus. In around (44.6%) participants tobacco consumption was positive but only (5.8%) had history of alcohol consumption. This may be because of easy availability of tobacco and tobacco products in smokeless form un rural india.physical activity was present among 33% of participants. Around (22.9%) had family history of some or the other NCDs. Around (17.%)females and (10.8%) males were found to be obese.

Study done by Kadiyala P et al on Prevalence of risk factors and 10 year risk estimation of cardiovascular diseases among rural population of Mysuru, Karnataka showed mean age of the participants 56.76 years and around 86% of them were Hindus.physical activity was seen in 20.1% of the participants .11% showed positive family history of NCDs.here also females(40%) were found to be more obese than males(12%)[1].

Another study done by Kavi A, Walvekar PR, Patil RS on Biological risk factors for coronary artery disease among adults residing in rural area of North Karnataka in which mean age of the participants were 38.2 years family history for NCDs was present among 6.3% of the participants and here also 52% females and 23% males were found to be obese.[2]

A study done in Uttar Pradesh by Srivastav S, Mahajan H, Goel S, Mukherjee S. on Prevalence of risk factors of non communicable diseases in a rural population of district Gautam-Budh Nagar showed mean age of the participants 37 years and 97% of them were Hindus. Tobacco consumption was found positive in 35% participants and alcohol consumption was little higher (16.9%) ,this may be because of place

where it was conducted was urban setting and easy availability of alcohol.and in this study also females were more obese than males.[8]

Dr. Anand N etal conducted a study on NCD risk factors and Socioeconomic inequalities in field practice of Madhubani Medical College,Bihar. Which showed around 86.1% of the participants were above 40 years and 77.65% of participants were Hindus tobacco consumption was positive among 27.3% and alcohol consumption among 11.4% of participants even though Bihar being a non-alcoholic state around 35.4% of study participants were found to be overweight.[9]

A study done on Bihar origin residing in Bangladesh by Ahmed S et al on Association between behavioural, metabolic risk factors of non-communicable diseases and socio-demographic factors. Which showed mean age of the participants 47.2 years 74.6% of the participants gave positive history for tobacco consumption alcohol consumption was found to be positive among 3.3% of the participants. Around 54.6% participants were found to be over weight.

Conclusion

The present study finding suggested prevalence of risk factor for NCDs is 17% in rural filed practicing area of RDJMMCH,Turki. Factors responsible were intake of tobacco ,alcohol, family history and physical inactivity.

Recommendations

- Health education activities to be conducted in rural and urban areas to create appropriate awareness about risk factors associated with NCDs.
- Activities should be conducted to encourage people for no use of smokeless tobacco/ smoking, alcohol and physical activity and healthy life.

Limitations

- Many other risk factors like BMI,fastfood intake and laboratory investigations were not done in this study

Conflict of interest: None,

Source of Funding: Self

Ethical Clearance: Taken from institutes ethical committee

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