

PREVALENCE OF RISK FACTORS OF NON COMMUNICABLE DISEASES AMONG THE HEALTH CARE PROFESSIONALS OF A TERTIARY CARE HOSPITAL OF SOUTH GUJARAT, INDIA

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Received date: 15 May 2019

Revised date: 05 June 2019

Accepted date: 26 June 2019

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ABSTRACT

Background: High burden of risk factors such as tobacco use, physical inactivity, the harmful use of alcohol and unhealthy diets all contribute in increasing the risk of dying from Non Communicable diseases (NCD). **Aims and objectives:** To study the prevalence of risk factors of Non Communicable diseases among the Health Care professionals (HCP). **Methodology:** hospital based cross-sectional study conducted among Health Care professionals (Nurses and Doctors) of tertiary care hospital of South Gujarat from 25th June - 6th July 2018. Total 120 participants are purposively selected using random number generator, (doctors-51 and nursing staff- 69). Data was collected in a pretested, semi structured proforma based on WHO STEP approach by one to one interview after a verbal Informed consent. The questionnaire was translated into the Gujarati language and tested prior to actual data collection. Physical measurements such as height, weight, blood pressure measurement taken. **Statistical analysis:** percentages and chi-square. **Results:** 5.8% prevalence of addiction to either alcohol/tobacco was found among HCP. > 30% had BMI above the normal range. 32% spends time on physical activity for 30 min on working day. > 30% had family history of NCDs. On clinical examination >50% of participants had either pre-hypertension or stage 1 hypertension as per JNC-8 classification. **Conclusion:** the prevalence of risk factors such as high BMI, dietary habits, physical inactivity, family history and tobacco addiction is high among Health care professionals and need interventions such as life style modifications and early diagnosis of NCDs.

KEYWORDS: Health care professionals, Risk factors, Non Communicable diseases, Diabetes Mellitus, Hypertension.

INTRODUCTION

World Health Organization had reported 41 million deaths due to Noncommunicable diseases (NCDs) that is equivalent to 71% of all deaths globally of which 15 million people die between ages of 30-69 years and more than 85% premature deaths occur in low and middle income countries. Majority of NCDs deaths are due to Cardiovascular diseases or 17.9 million people annually, followed by cancers (9.0 million), respiratory diseases (3.9million), and diabetes (1.6 million).^[1] Tobacco use, physical inactivity, the harmful use of alcohol and unhealthy diets all increase the risk of dying from a NCD. Tobacco accounts for over 7.2 million deaths every year (including from the effects of exposure to second-hand smoke,^[2] while 4.1 million annual deaths have been attributed to excess salt/sodium intake. More than half of the 3.3 million annual deaths attributable to

alcohol use are from NCDs, including cancer. 1.6 million Deaths annually can be attributed to insufficient physical activity.^[2]

Rationale for the study

Health care workers play a critical role in the health care delivery system. There are limited studies available done among the medical and paramedical staff for prevalence of risk factors for NCDs. Although some research studies done suggested of prevalence of risk factor among the health care providers,^[3,4] due to life style disorders. So the study was conducted with the objective to explore and find the prevalence of life style risk factors related with the NCDs among the health care providers of a tertiary care hospital.

AIMS AND OBJECTIVES

To assess the prevalence of risk factors for Non Communicable diseases among the Health Care professionals (HCP).

METHODOLOGY

A hospital based cross-sectional study was conducted among Health Care providers (Nurses and Doctor) of a tertiary care hospital of South Gujarat. The study sample was randomly selected by using random number generator. Total 120 study participants were included in the study (doctors-51 and nursing staff- 69). Data collection was carried out from 25 June 2018 to 6 July 2018. Data collected by questionnaire consisted of demographic information, socio-economic factors, and behavioral Measurement such as smoking, alcohol, fruit and vegetable consumption, physical activity and family history. World Health Organization STEPS approach was used to find the prevalence of risk factors. The study basically focused on StepI approach, information about tobacco and alcohol intake, diet and physical activity.

Enquiry into history of hypertension and diabetes has also been done. The study questionnaire of WHO Steps I⁴ was modified according to the local language and measurements. Verbal Informed consent was taken from each participant before data collection. The questionnaire was translated into the Gujarati language and tested prior to actual data collection. Physical measurements included weight in bare feet with usual clothing, height in bare feet without headwear, and blood pressure at the midpoint of the arm after participants had rested for at least five minutes. Two blood pressure readings were obtained for all participants. A third reading was taken if there was a difference of more than 20 mmHg for systolic blood pressure or 10 mmHg for diastolic blood pressure between the first two readings. The mean of all measures was used and recorded. Questionnaires were administered by one to one interviews.

The statistical software program Microsoft Excel was used to calculate the sample size for this study.

RESULTS

Table 1: classification of Health care providers (Doctors and Nursing staff) as per WHO STEP risk factors assessment for Non – Communicable diseases.

Age (Year)	Doctor (N=51) (%)	Nursing staff (N=69) (%)	Total (N=120) (%)	P Value
21-30	20 (39.21)	58(84.05)	78(65)	-
31-40	28(54.90)	5(7.24)	33(27.5)	
41-50	1(1.96)	3(4.34)	4(3.33)	
51-60	1(1.96)	2(1.38)	3(2.5)	
61-70	1(1.96)	1(1.44)	2(1.66)	
Designation wise Distribution:				
Male	19(37.25)	6(8.69)	25(20.83)	-
Female	32(62.74)	63(91.30)	95(79.16)	
Tobacco & Alcohol Addiction among Health care worker:				
Tobacco	1(1.96)	1(1.44)	2(1.66)	-
Alcohol	2(3.92)	3(4.34)	5(4.16)	
Distribution according to BMI				
Underweight [<18.5]	2 (4)	12 (17.39)	14(11.6)	P<0.05
Normal range [18.5-24.9]	22 (43)	41 (34.16)	63(52.5)	
Over Weight(Pre-obese)[25-29.9]	20 (39.21)	10 (14.49)	30 (25)	
Obese Class 1 [30-34.9]	6 (11.76)	7 (10)	13 (11)	
Obese Class 2 [35-39.9]	0 (0)	0 (0)	0 (0)	
Obese Class 3 [>40]	0 (0)	0 (0)	0 (0)	
Questions on Dietary habits				
In a typical week, how many days eat fruits? (Apple, orange, banana, dates ...etc)				
Once per week	5 (9.80)	7 (10.14)	12 (10)	P<0.05
Twice per week	13 (25.40)	16 (23.18)	29 (24.1)	
Thrice per week	19 (37.25)	11 (15.94)	30 (25)	
≥thrice per week	9 (17.64)	35 (50.72)	44 (36.6)	
In a typical week , how many days you eat vegetables? (cooked or uncooked)				
Once per week	1 (1.96)	2 (1.38)	3 (2.5)	p>0.05
Twice per week	2 (3.92)	2 (1.38)	4 (3.33)	
Thrice per week	0 (0)	2 (1.38)	2 (1.66)	
≥ Quarter per week	48 (94.11)	63 (91.30)	111 (92.5)	

On the average, number of meals per week eat that were not prepared at home? By meal, mean breakfast, lunch or dinner (such as pizza, hamburgers, French fries and deep-fried chicken)				
Zero per week	6 (11.76)	13 (18.84)	19 (15.83)	p>0.05
Once per week	35 (68.62)	66 (95.65)	101 (84.16)	
Twice per week	8 (15.68)	23 (33.33)	31 (25.83)	
Thrice per week	2 (3.92)	13 (18.84)	15 (12.5)	
≥ Quarter per week	0 (0)	7 (10.14)	7 (5.83)	
Physical activity:				
Walk for at least 10 minutes continuously at any places?	37 (72.54)	46 (66.66)	83 (69.16)	-
How much time spend walking/running/cycling on a working day?				
10 Minute	2 (3.92)	3 (4.34)	5 (4.16)	p <0.05
20 Minute	10 (19.60)	1 (1.44)	11 (9.16)	
30 Minute	19(37.25)	20 (28.98)	39 (32.5)	
≥60 Minute	9 (17.64)	21 (30.43)	30 (25)	
In a typical week, on how many days do sports, fitness or recreational (leisure) activities?				
Zero per week	27 (52.94)	48 (69.56)	75 (62.5)	P >0.05
Once per week	3 (5.88)	4 (5.79)	7 (5.83)	
Twice per week	2 (3.92)	6 (8.69)	8 (6.66)	
Thrice per week	3 (5.88)	1 (1.44)	4 (3.33)	
≥ Quarter per week	16 (31.37)	10(14.44)	16 (13.33)	
On a typical day How much time do you spend doing sports, fitness or recreational activities?				
10 Minute	1 (1.96)	0 (0)	1 (0.83)	p >0.05
20 Minute	3 (5.88)	0 (0)	3 (2.5)	
30 Minute	16 (31.37)	6 (8.69)	22 (18.33)	
≥60 Minute	8 (15.68)	18 (26.08)	26 (21.66)	
Questions on Blood Pressure monitoring				
Did you have Measured your B.P. in last 6 month?	48 (94.11)	67 (97.10)	115 (95.83)	-
Do you suffering from Hypertension	4 (7.84)	6 (8.69)	10 (8.33)	
Is there a family history of hypertension or do one of your parents, brothers or sisters suffer from high blood pressure (hypertension)	22 (43.13)	19 (27.53)	41 (34.16)	
Questions on Diabetes mellitus				
Do you Suffering from Diabetes Mellitus?	1 (1.96)	1 (1.44)	2 (1.66)	-
Is there a family history of Diabetes Mellitus or do one of your parents, brothers or sisters suffer from Diabetes Mellitus	24 (47.05)	10 (14.49)	34 (28.33)	-
Mortality in First Degree Relative & Second Degree Relative due to Non communicable diseases				
Stroke	3 (5.88)	2 (2.89)	5 (4)	-
DM	1 (1.96)	3 (4.34)	4(3)	
CVD	7 (13.72)	6 (8.69)	13 (10)	
Cancer	2 (3.92)	0 (0)	2(2)	

Table 2: Hypertension Stage on clinical examination as per JNC-8 classification.

Category	Systolic blood pressure	Doctor	Nurses	Total	Diastolic blood pressure	Doctor	Nurses	total
Normal	90-119	19 (37.25)	53 (76.81)	72 (60)	60-79	9 (17.64)	30 (43.47)	39 (32.5)
Pre-hypertension	120-139	30 (58.82)	11 (15.94)	41 (34.16)	80-89	42 (82.35)	38 (55.07)	80 (66.66)
Stage 1 hypertension	140-159	2 (3.92)	5 (7.24)	7 (5.83)	90-99	0 (0)	1 (1.44)	1 (0.83)
Stage 2 hypertension	>160	0 (0)	0 (0)	0 (0)	>100	0 (0)	0 (0)	0 (0)
Isolated systolic hypertension	≥140	0 (0)	0 (0)	0 (0)	<90	0 (0)	0 (0)	0 (0)

RESULTS

1. In our study out of the total health care workers, majority of Medical staff (55%) belongs to 31-40 years of age group, while majority of Para-medical staff (84%) belongs to 21-30 years of age group. The difference between the groups was found statistically significant ($p < 0.05$).
2. Our study reported of about 5.8% (2.5% among doctors and 3.3% among nursing staff) of prevalence of addiction to either of alcohol/tobacco smoking among the health care providers.
3. In present study 55% of the health care workers had normal BMI on physical examination while 25% (HCW belongs to overweight (pre-obese) class and 11% of HCW belongs to obese class 1. The difference was also found statistically significant ($p < 0.05$).
4. More than 36% of HCW of hospital had fruits intake of more than 4 times per week
5. While 92% reported of having vegetables in their regular diet of more than 4 times per week.
6. Majority of HCWs (84%) reported of having the meal outside home (fast food) once a week, which is not prepared at home.
7. Only 32% of HCW reported of spending time on walking/running /cycling for 30 min on a working day followed by 25% reported of spending time of more than 60min. the difference was also statistically significant ($p < 0.05$).
8. On a typical day only 26% reported of doing sports/fitness or recreational activity of > 60 min and 22% of them engaged in 30min of activities.
9. 8% and 2% of the Health care staff reported of suffering from Hypertension and diabetes mellitus respectively while 34% and 28% reported of having family history of Hypertension and diabetes mellitus respectively.
10. Participants reported about 20% of mortality among their first or second degree relatives were attributed to Noncommunicable diseases among which 10% of mortality was due to cardiovascular diseases and 4% due to stroke.
11. Majority of healthcare staff ($> 50\%$) on clinical examination as per JNC-8 classification belongs to either pre-hypertension stage or stage 1 hypertension (Table 2).

DISCUSSION

According to World Health Organisation Non Communicable diseases (NCD) kills 41 million people each year that is equal to 71% of all deaths globally. Globally 15 million peoples die due to NCD belongs to age group of 30-69 years, While 85% premature deaths occur in low- and middle-income countries.^[1] In our study out of the total health professionals, majority of Medical staff (55%) and paramedical staff (84%) belongs to 31-40 and 21-30 years of age group respectively. High burden of risk factors for non communicable diseases is one of the responsible factors. The major risk factors

associated with NCDs are tobacco use, alcohol use, physical inactivity, obesity, and raised blood pressure,^[5] Our study reported of about 5.8% (2.5% among doctors and 3.3% among nursing staff) of prevalence of addiction to either of alcohol/tobacco smoking among the health care providers, while the prevalence of addiction of alcohol and tobacco was found doubled in a study by Sharma et al⁶ Besides behavioural factors, it was evident that obesity is also associated with NCD. The Low grade Inflammation and antioxidant disproportion plays vital role in development of NCDs.^[7] Our study reported 25% and 11% of health care professionals belongs to pre-obese and obese class I category as per WHO BMI classification respectively. The difference was also found statistically significant ($p < 0.05$), which was comparable with other studies where the prevalence of obesity was 12%.^[8] It's a vicious cycle of NCDs associated with obesity and obesity is associated with sedentary life style or physical inactivity. In an ICMR –WHO study conducted in six regions of India also revealed that 35% of the rural residents were found to be following a sedentary lifestyle⁹. similar findings was also reported in our study where only 32% of health care professionals reported of spending time on walking/running /cycling for 30 min on a working day followed by 25% reported of spending time of more than 60min and the difference was also statistically significant ($p < 0.05$), while on a typical day only 26% reported of doing sports/fitness or recreational activity of > 60 min and 22% of them engaged in 30min of any activities. It is comparable with a study done by Sharma et al in which 39% of employees of tertiary care hospital had physical inactivity.^[10] Family history can be used as a genetic risk predictor for common non-communicable diseases.^[11,12] Present study reported that 34% and 28% of Health care professionals had family history of hypertension and diabetes mellitus in any first or second degree relatives respectively. 8% and 2% of the Health care staff reported of taking treatment of Hypertension and diabetes mellitus respectively while, Similar findings reported by sandhu et al that 32.6% and 5.8% of population were hypertensive and diabetic respectively.^[3] At the time of study majority of healthcare staff ($> 50\%$) had hypertension on clinical examination which was either pre-hypertension stage or stage 1 hypertension as per JNC-8 classification comparable with the study done by Srivastav et al among rural population of Utter Pradesh where the total prevalence of hypertension was 20.0% among women and 15.6% among men on examination.^[13]

CONCLUSION AND RECOMMENDATIONS

The prevalence of risk factors such as high BMI, dietary habits, physical inactivity, family history and tobacco addiction is high among Health care professionals and need interventions such as life style modifications and early diagnosis of NCDs.

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