Section: Community Medicine

Original Research Article

PREVALENCE OF BEHAVIOURAL RISK FACTORS OF NON-COMMUNICABLE DISEASE AMONG MEDICAL STUDENTS AT A TERTIARY CARE CENTRE, ASSAM

Gogoi R[1], Saikia P[2], Kutum T[3]

[1]*Assistant Professor, Department of Community Medicine, Lakhimpur Medical College and Hospital, North Lakhimpur, Assam, India*
[2]*Assistant Professor, Department of Community Medicine, Lakhimpur Medical College and Hospital, North Lakhimpur, Assam, India*
[3]*Associate Professor, Department of Biochemistry, Lakhimpur Medical College and Hospital, North Lakhimpur, Assam, India*

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Corresponding Author:
Dr. P. Saikia
Assistant Professor, Department of Community Medicine, Lakhimpur Medical College and Hospital,North Lakhimpur, Assam, India
Email:00partha00@gmail.com

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ABSTRACT

Background: Non-communicable diseases (NCDs) are the leading cause of mortality and morbidity throughout the world. NCDs are mainly caused by four behavioural risk factors: tobacco use, unhealthy diet, insufficient physical activity and the harmful use of alcohol. Exposure to these risk factors start in younger ages group which if not prevented at appropriate age will lead to devastating outcomes in terms of occurrence of NCDs in later life. The aim is to estimate the prevalence of behavioural risk factors of non-communicable disease among medical students of Lakhimpur Medical College and Hospital, Assam.

Materials and Methods: A cross-sectional study was conducted among 184 medical students for a period of six months from May to October, 2024. WHO global STEP-wise approach was used to estimate the prevalence of risk factors for NCD.

Results: Mean age of the participants was 22.3 ±1.34 years. 66.9% was male and 83.7% belonged to Hinduism. Current tobacco user was 22.3% and current alcoholic was 17.9%. Inadequate consumption of fruit and vegetables was observed in 90.2% and 75.5% students respectively. Processed food and extra salt were consumed daily by 16.8% and 25.5% students respectively. 76.6% and 3.8% students were involved in sufficient moderate and vigorous physical activity respectively.

Conclusion: Modifiable non-communicable disease risk behaviours including tobacco and alcohol use, daily consumption of processed food and extra salt intake are present among medical students. Behavioural change communication should be stepped up among the students to help them adopt the healthy lifestyle behaviour.

Keywords: Behavioural Risk Factors, Non-communicable disease, Medical students.

INTRODUCTION

Non-communicable diseases (NCDs) are the leading cause of mortality and morbidity throughout the world. The number of death due to NCDs in 2021 was at least 43 million people which was equivalent to 75% of non-pandemic-related deaths globally. In 2021,18 million people died from an NCD before attaining 70 years of age of which 82% premature deaths occurred in low- and middle-income countries. Among the deaths due to NCD in the year 2021, cardiovascular diseases accounted for most (19 million) deaths followed by cancers (10 million), chronic respiratory diseases (4 million) and diabetes (over 2 million).[1] The burden of NCDs on health and development is also increasing in the South-East Asia Region where the death due to NCDs is 62% accounting for 9 million persons including high proportion of premature mortality.[2] In India, NCDs account for 63% of all deaths, out of which 27% mortality is due to cardiovascular diseases.[3]

NCDs are recognized as a major challenge to achieve sustainable development goal which aims to

reduce the global burden of NCDs. An important aspect to control NCDs is to focus on reducing the risk factors associated with these diseases.[1] Risk factors for NCDs can be classified as physiological, behavioural and environmental risk factors. Physiological risk factors include overweight, obesity, raised blood pressure, raised blood glucose and raised total cholesterol whereas behavioural risk factors are stress, use of tobacco, alcohol, unhealthy diet and physical activity that can be modified.[4] NCDs are mainly caused by four behavioural risk factors: tobacco use, unhealthy diet, insufficient physical activity and the harmful use of alcohol.[5]

Exposure to modifiable risk factors start in younger age group which if not prevented at appropriate age will lead to devastating outcomes in terms of occurrence of NCDs in later life. The risk of occurrence of NCDs is high among medical students due to their sedentary lifestyle owing to long study hours. Hence, it is important to screen medical students who will be future healthcare professionals and play multifaceted role in the society.[4] In this background, the present study was conducted to estimate the prevalence of risk factors of non-communicable disease among medical students of Lakhimpur Medical College and Hospital, Assam.

Objectives: To estimate the prevalence of behavioural risk factors of non-communicable disease among medical students of Lakhimpur Medical College and Hospital, Assam.

MATERIALS AND METHODS

A cross-sectional study was conducted among undergraduate medical students in Lakhimpur Medical College and Hospital in North Lakhimpur, Assam for a period of six months from May to October, 2024. This study was undertaken after obtaining Institutional Ethical Committee approval. Using the formula 4pq/d2, a sample size of 184 was calculated considering the prevalence of medical student currently exposed to tobacco daily as 34.3% and taking 7% absolute error.[6]

There were 300 undergraduate medical students studying in 3 batches in this college at the time of study. Of these 300 students, 184 students were selected in the study by doing simple random sampling and after obtaining informed consent from them.

The study was conducted using the WHO global STEP-wise approach for risk factor surveillance for NCDs.[7] Step 1 of WHO STEPS Questionnaire pertaining to demographic and behavioural risk factors were filled by the study subjects. Anonymity and confidentiality were maintained by giving Unique Identification Numbers to the participants.

The data was analyzed using standard statistical software: SPSS (version 16.0) and presented by using percentage.

Definitions used:

Current smoker: One who smoked in the past 30 days using any form of tobacco, smoking and/or smokeless.[7]

Current alcoholic: One who consumed one or more than one standard drink of any alcohol in past 30 days.[7]

Students who consumed less than five servings of fruits and vegetables per day was considered as inadequate consumption of fruits and vegetables.[8]

Physical activity less than 30 min per day for 5 days or 150 min per week by students was considered as insufficient moderate physical activity.[9]

Physical activity less than15 min per day for 5 days or 75 min per week by students was considered as insufficient vigorous physical activity.[9]

RESULTS

A total of 184 students participated in the study. The proportion of male (66.9%) was more than females (33.1%). Majority of the students belonged to Hinduism (83.7%) followed by Islam (14.1%). Mean age of the participants was 22.3± 1.24 years. Most of the students belonged to age group 22-24 years (69.02%).[Table1]

50.5% students had family history of hypertension and 45.7% had family history of diabetes while 13.6% had family history of cardiovascular disease other than hypertension and diabetes.[Table 2]

The prevalence of current tobacco user was 22.3%. Majority of smokers initiated smoking out of curiosity (37.3%) followed by to relieve stress (29.9%) and influence of friends (13.4%). The prevalence of current alcoholic was 17.9%. The most common reason behind initiation of alcohol was curiosity (61.8%) followed by influence of friends (19.7%) and to relieve stress (19.2%). Inadequate consumption of fruit and vegetables was observed in 90.2% and 75.5% of students respectively. Processed food and extra salt was consumed daily by 16.8% and 25.5% students respectively. 76.6% students were involved in **sufficient** moderate physical activity whereas only 3.8% were involved in some forms of sufficient vigorous physical activity. [Table 3]

Table 1: Distribution of study subjects according to socio demographic characteristics.

Characteristics		Frequency (N)	Percentage(%)
Sex	Male	124	67.4
	Female	60	32.6
Religion	Hindu	154	83.7
	Muslim	26	14.1
	Christian	2	1.1
	Others	2	1.1

Age	19-21	51	27.7
	22-24	127	69.0
	25-27	6	3.3

Table 2: Distribution of study subjects according to the family history of hypertension, diabetes and other cardiovascular disease.

Characteristics	Frequency (N)	Percentage (%)
Family history of hypertension	93	50.5
Family history of diabetes	84	45.7
Family history of other cardio vascular disease	25	13.6

Table 3: Distribution of study subjects according to the prevalence of risk factors of non-communicable disease.

Characteristics	Frequency (N)	Percentage (%)
Smoking		
Current smoker	41	22.3
Non smoker	143	77.7
Alcohol consumption		
Current alcoholic	33	17.9
Non alcoholic	151	82.1
Serving of fruit per day		
Less than 5	166	90.2
5 or more	18	9.8
Serving of vegetables per day		
Less than 5	139	75.5
5 or more	45	24.5
Intake of extra salt		
Yes	47	25.5
No	137	74.5
Frequency of Intake of processed food		
7 days per week	31	16.8
1-6 days per week	153	83.2
Frequency of moderate exercise per week		
Less than 150 min	43	23.4
150 min and more	141	76.6
Frequency of vigorous exercise per week		
Less than 75 min	177	96.2
75 min and more	7	3.8

DISCUSSION

In our study, the mean age of the study participants was 22.3 ± 1.24 years. Manna N et al in their study reported that the mean age of the study participants was 18.74 ± 0.79 years.[10]Rustogi N.et al in their study found that the mean age of students was 20 ± 3.6 years.[11] Mean age of the students was 20.74 years in a study conducted by Karmakar PR et al.[12]

In our study, majority of the students was male (66.9%) which is similar to findings observed in studies done by Manna et al (61.1%), Rustagi N et al (62.4%) and Karmakar PR et al (70%) while almost equal distribution of male and female was observed by Ibrahim RM et al. and Mahmood SE et al.[10-14]

In this study, majority of the students belonged to Hinduism (83.7%) followed by Islam (14.1%). This observation is in accordance to other studies among medical students conducted by Manna et al., Mahmood SE et al., Karmakar PR et al.[10,14,12]

In our study, the prevalence of current tobacco user was 22.3%. Similar finding was observed by Ibrahim RM et al. (26%), Karmakar PR et al. (19%), Goswami S et al. (27.7%).[6,12,13] On the other hand, a comparatively lower percentage was observed in studies by Manna N et al. (3.5%) and Rustogi N et al. (7%).[10,11]

In this study, the prevalence of current alcoholic was 17.9%. A comparatively higher prevalence was observed by Rustogi N et al. (28.8%), Ibrahim RM et al. (25.5%), Goswami S. et al (39.2%).[6,11,13]However, a lower prevalence (6.4%) was observed by Manna N et al.[10]

In our study, adequate consumption of fruit was observed by only 9.8% of students which is very low. A higher prevalence (29.1%) compared to present study was observed in studies by Manna N et al.[11]Rustogi N et al. in their study in New Delhi found that only 12% of students consumed minimum 5 servings of fruits daily which is almost similar to the present study.[11] Goswami S et al. in their study among medical students in South Kolkata, West Bengal found that 96.4% students consumed inadequate amount of fruit in their diet.[6] The reason behind the less consumption of fruits serving per day by the students might be due to longer duration of study hours at college.

Adequate consumption of vegetables was observed in 24.5% of students in our study. Rustogi N et al in their study found that 12% of students consumed minimum 5 servings of vegetables daily.[12] However Manna et al found a higher prevalence (69.5%) of vegetable consumption in their study conducted among medical students of West Bengal.[11] Goswami S et al. in their study reported

that 9.1% students consumed adequate amount of vegetable in their diet which is lower than the finding of our study.[6]

In our study 25.5% of the study participants consumed extra salt daily which is in contrast to the findings obtained by Manna N et al. (5.4%) and Karmakar PR et al(37%).[10,12] High salt intake by adding extra salt or by eating items, such as sauces/ pickles, and others was reported by 53.0% in a study by Rustogi N et al.[11]

Consumption of processed food daily was reported by 16.8% students in our study. However, Manna et al. found a higher prevalence (32.0%) of daily consumption of processed food by the students.[10]

In our study, 76.6% students were involved in some forms of adequate moderate physical activity. A lower prevalence was observed in studies conducted by Rustogi N et al. (35.8%), Ibrahim RM et al (30.1%), Karmakar PR et al. (19%).[11-13]

In our study, 3.8% were involved in some forms of adequate vigorous physical activity which is very low. This aligns with findings from Thomas E et al. who reported that only 10.6% students were involved in high physical activity.[15]

CONCLUSION

The study revealed that modifiable non-communicable disease risk behaviours including tobacco and alcohol use, daily consumption of processed food and extra salt intake are widely prevalent among medical students. Information, education and communication (IEC) activities emphasizing the benefits of adopting the correct dietary practies and regular physical activity in day to day life need to be initiated among the students. Behavioural change communication should be stepped up to help the students adopt the healthy lifestyle behaviours to prevent occurrence of non-communicable disease in future.

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