

Original Research Article

Prevalence of gastroesophageal reflux disease and its associated factors among professional college students in North Kerala

Reshma Muniaraj*, Usha Karunakaran

Department of Community Medicine, Government Medical College, Kannur, Kerala, India

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***Correspondence:**

Dr. Reshma Muniaraj,

E-mail: drreshmamuniaraj@gmail.com

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ABSTRACT

Background: Gastroesophageal reflux disease (GERD) is a condition wherein reflux of gastric contents produces troublesome symptoms and complications, significantly impacting quality of life. The objective is to determine the prevalence of gastroesophageal reflux disease and its associated factors among professional college students in North Kerala. To assess its symptom severity.

Methods: A cross-sectional study was conducted among 320 professional college students aged ≥ 18 years in North Kerala during a period of one year using stratified multistage random sampling. Data were collected through a semi-structured self-administered questionnaire. GERD was assessed using the validated Frequency Scale for the Symptoms of GERD, with a score >8 considered diagnostic. Data were analysed using SPSS. Appropriate statistical tests were applied; $p < 0.05$ was considered significant.

Results: The mean age was 20.85 ± 1.83 years with equal gender distribution. The prevalence of GERD was 38% (121), higher among medical students (24.6%) than engineering students (13.4%). Mild, moderate, and severe symptoms were observed in 20.4%, 13.1%, and 4.4% respectively. Significant association were found between GERD and medical stream, hostel stay, co-morbidities, family history, stress, regular medication and analgesic use, unhealthy dietary habits life frequent hotel meals and aerated drinks. Physical activity showed a protective effect.

Conclusions: GERD prevalence was 38% among professional college students, particularly higher among medical students. Lifestyle factors, stress, and certain medical conditions were significantly associated, while physical activity was protective. Promoting healthy diet, regular exercise, and stress management may reduce risk.

Keywords: Prevalence, Gastro esophageal reflux, Students, Symptoms

INTRODUCTION

Gastro-esophageal reflux disease (GERD) is one of the most common complaints in general medical practice and can be a debilitating condition requiring life-long medication, invasive surgery, and lifestyle changes.¹ It itself is not a disease but a normal physiologic process that occurs multiple times each day, without causing any mucosal damage.² GERD is defined as a condition wherein reflux of gastric contents produces troublesome symptoms and or complications. Mild symptoms occurring more than two times per week and moderate or

severe symptoms more than once per week are considered troublesome.³ It is a public health concern⁴ because it is associated with a negative impact on health-related quality of life (HRQL), and great cost for patients and society. It has an adverse impact on daily activity, work productivity and quality of sleep. Symptomatic GERD is a commonly prevalent gastrointestinal disorder.⁵

The global pooled prevalence of GERD was 13.98% estimated from 102 studies and varied greatly according to region and country. Using the United Nations 2017 Revision of World Population Prospects, the estimated

number of individuals suffering from GERD globally is 1.03 billion.¹ The pooled prevalence of GERD in the Indian population is 15.6 estimated from nine studies from 20,614 subjects.⁶ The cardinal symptoms of GERD are heartburn and sour regurgitation. Approximately 30-50% of patients with GERD have additional symptoms of functional dyspepsia. It is the presence of one or more of these dyspeptic symptoms- post prandial fullness, early satiety, epigastric pain and epigastric burning.^{7,8} Permanent acid reflux can induce more serious complications, such as esophagitis, esophageal strictures etc.⁷ Several risk factors have been associated with GERD, such as analgesics intake, types of food, types of drinks, smoking, family history, high body mass index (BMI), physical activities, consumption of fried and fast food. These risk factors are mostly related to the lifestyle of the patient. A systematic review of longitudinal studies shows that the prevalence of GERD has increased during the past recent decades. If this trend continues, it could contribute to the rapidly increasing incidence of more serious complications associated with GERD, affecting the patient's quality of life as well as costs to healthcare systems.⁹

The Rationale, GERD is the major issue which can affect the quality of life and daily tasks. It has adverse impact on daily activity, work productivity and quality of sleep. Very few studies on magnitude of GERD in student community have been done and considering Current curriculum and dietary habits, mental stress and sleep quality makes students prone for reflux symptoms. Also, colleges students are usually busy and too occupied with their academic education that they tend to ignore the symptoms or simply self-medicate which can worsen the case and leads to serious complications.

Objective was to determine the prevalence of gastroesophageal reflux disease and its associated factors among professional college students in North Kerala. To assess the symptom severity of those with gastroesophageal reflux disease.

METHODS

Design, setting and population

A cross-sectional study was conducted among 320 professional college students aged 18 years and above in a selected medical and engineering colleges of Kannur and Kasargod districts, North Kerala from January 2024 to January 2025.

Inclusion criteria

Undergraduate students who gave consent to participate in study.

Exclusion criteria

Students with features of GERD but diagnosed as other condition. E.g. hiatus hernia etc. were excluded.

Sample size and sampling method

According to a cross-sectional study done by Abhilasha Sharma et al among medical students in Pune the prevalence of GERD is 25% so by taking $n = Z^2pq/d^2$, the calculated sample size was 288.⁵ This was rounded and 320 sample size were taken. Three colleges were selected by stratified multistage random sampling method. Students were selected by simple random sampling method (lottery method). Students from each year was selected by simple random sampling method by using attendance registers. Ethical approval was obtained from the institutional Ethical Committee of Government Medical College Kannur (IECNO.38/2023/GMCK).

Data collection and analysis

A self-administered, pretested, semi-structured questionnaire was used to collect information on sociodemographic details, stress, physical activity, food habits, sleep and medical history. The validated Frequency Scale for Symptoms of GERD, a 12-item measuring frequency (0=never to 5=always), was used to measure GERD symptoms.^{10,11} A total score of ≥ 8 indicated GERD; symptoms of acid reflux and dysmotility were evaluated by sub-scales. Data was analysed using SPSS version 21, The mean \pm SD is a continuous variable. Percentages and frequencies are categorical. associations examined using Fisher's exact test (expected cells < 5) or Chi-square. $p < 0.05$ was considered significant.

Operational definition

Professional college students: In this study only medical and engineering colleges are considered as professional college students.

GERD: GERD is a condition where both acid reflux related symptoms and dyspepsia (dysmotility) symptoms are present. GERD was assessed by using validated Frequency Scale for the Symptoms of GERD (FSSG). GERD was diagnosed if the total FSSG score for a single person is > 8 . This is a screening process.

Symptom severity of GERD was assessed by (FSSG score).

A score between 8 and 12 indicates mild symptoms, while a score ranging from 13 to 20 suggests moderate symptoms. Scores greater than 20 are considered severe symptoms.

RESULTS

Demographic profile

Study was conducted among 320 professional college students above 18 years of age. Age ranged from 18 to 25 years with mean age 20.85 ± 1.83 years. Majority of

them belonged to 20 to 21 years of age. Among the 320 participants 164 (51%) were females and 156 (49%) were males. Among the 164 female's majority 102 were medical students. Among the 156 males 98 participants were engineering students. All the 320 study participants were single. Of the 320 study participants majority 50% (160) belong to upper class followed by 39% (124) belong to upper middle-class family. Majority 187 (58.4%) had ideal BMI, 95 (29.7%) were pre obese and 38 (11.8%) were underweight. The mean BMI of the participants are 21.54+7.99.

Symptoms of GERD

Among the 320 participants 305 (95.3%) had symptoms of GERD, only 4.7% (15) participants free of symptoms. As shown in figure 1 among the 305 participants who showed symptoms 18 (6%) showed only acid reflux related symptoms, 52 (17%) showed only dysmotility symptoms while 77% (235) showed a combination of both acid reflux related and dysmotility symptoms. Among the 305 symptomatic individuals' majority 246(81%) participants symptoms were relieved spontaneously followed by 32 (10%) participants by eating and 10 (3%) participants symptoms relieved by other factors which includes exercises and walking as per students.

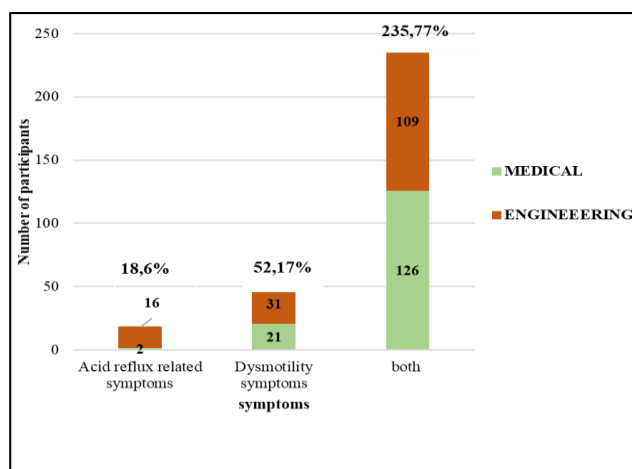


Figure 1: Distribution of symptoms of GERD among the study participants (n=305).

Prevalence of GERD and symptom severity

The prevalence was assessed by FSSG score >8 and suggests that the person has GERD. In this study 121(38%) of the study participants had GERD. Among the 121 study participants with GERD majority 78 (24.4%) were medical students, and 43 (13.4%) were engineering students as shown in figure 2. Of the 160 medical students, 13.1% (21) of them had GERD, while 13.1% (21) and 12.5% (20) of the students from Phase III-Part I and Phase III-Part II, respectively, had GERD. Of the 160-engineering branch 43 students, 16 (10%) were in their final year, and 10 (6.2%) were in their third

year. Of these, 13.4% had GERD. As shown in table 1, among the 320 study participants who had symptoms 184 (57.5%) had symptoms and scored <8, and 65 (20.4%) had mild symptoms, 42(13.1%) had moderate symptoms and 14(4.4%) had severe symptoms of gerd.¹⁵

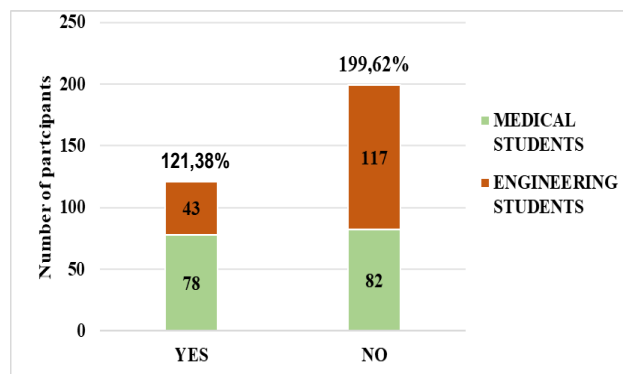


Figure 2: Prevalence of GERD (n=320).

(4.6%) of the participants had no symptoms and scored zero. Of the 320 participants 121 had FSSG score >8. Among them majority 78 were from medical stream. Among the 14 participants with severe symptoms majority 11(3.4%) participants were medical students and those with moderate symptoms majority 30 (9.4%) participants were medical students.

Details of dietary habits

Among the 320 study participants majority 315 (98%) were non vegetarians, among them majority 62% (195) had consumed non-veg few times in a week followed by 32% (102) consumed non-veg daily. Among the 320 study participants majority 53% (168) had midnight snacks infrequently and 14% (46) had frequently, among them majority 31 were medical students. Among the study participants 265 (82.8%) had a habit of consuming aerated drinks of which majority 68% (217) had aerated drinks infrequently, 15% (48) had frequently of which majority 35 were medical students. Among the 320 participants 31% (99) had a habit of eating fast/finishing the whole meal within 10 minutes without chewing properly this reason being late for their class and fast eating over a long period can lead to GERD. Of the 320 participants majority 42% (136) of them skipped breakfast occasionally, 32% (102) of them never skipped breakfast of which majority 73 (22.8%) participants were engineering students. Sixty-nine (22%) of them skipped breakfast frequently of which majority 51(15.9%) participants were medical students. Only 13 (4%) of them skipped breakfast daily of which 10 participants were medical students. Out of 320 participants 280 (87.5%) had a habit of coffee and tea intake. Among them 280 majority 60.8% (170) of them consumes both tea and coffee from both streams. As shown in table 2 the frequency of regular daily meal consumption from hotels among study participants is 5% (16) while 48% (154) of the study participants while not bringing lunch from

home consumed few times in a week and 47% (150) of them consumed few times in a month. The frequency of spicy food consumption among the 320 participants majority 211 (66%) of them consumed spicy foods few times in a week, 56 (17.2%) consumed few times a month

and 53 (16.5%) consumed daily. Frequency of fast food and fried food consumption among study participants were 159 (50%) consumed few times in a month followed by 154 (48%) of them consumed few times in a week and 7(2%) of them consumed daily.

Table 1: Grading of symptom severity (n=320).

Grading of symptoms	GERD symptom score	Medical (%)	Engineering (%)	Total (%)
No symptoms	0	11(3.4)	4 (1.25)	15 (4.6)
Symptoms present	<8	71 (22.2)	113 (35.3)	184 (57.5)
Mild symptoms	8 to 12	37 (11.6)	28 (8.8)	65 (20.4)
Moderate symptoms	13 to 20	30 (9.4)	12 (3.7)	42 (13.1)
Severe symptoms	>20	11(3.4)	3 (1)	14 (4.4)

Table 2: Types and frequency of food habits(n=320).

Types and frequency of food habits	Daily		Few times in a week		Few times in a month	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Regular meals from hotels	16	5	154	48	150	47
Spicy food consumption	53	16.5	211	66	56	17.5
Fast food consumption	7	2	154	48	159	50
Fried food consumption	7	2	154	48	159	50

Table 3: Association between selected factors and GERD (n=320).

Domains	Categories	GERD (%)	No GERD (%)	P value
Gender	Male	54 (34.6)	102 (65.4)	0.25
	Female	67 (40.9)	97 (59.1)	
Academic stream	Medical	78 (48.8)	82 (51.2)	<0.001
	Engineering	43 (26.9)	117 (73.1)	
Current stay	Hostel	78 (45.6)	93 (54.4)	0.004
	Day scholar	44 (29.5)	105 (70.5)	
Family history of GERD	Present	42 (56.8)	32 (43.2)	<0.001
	Absent	79 (32.1)	167 (67.9)	
Comorbidities	Present	29 (55.8)	23 (44.2)	0.005
	Absent	92 (34.3)	176 (65.7)	
Frequent analgesic use	Yes	48 (54.5)	40 (45.5)	0.001
	No	73 (31.5)	159 (68.5)	
Stress	Yes	84 (56.0)	66 (44.0)	<0.001
	No	37 (21.8)	133 (78.2)	
Regular physical activity	Yes	29 (23.8)	93 (76.2)	<0.001
	No	50 (41.4)	63 (55.8)	
BMI	Underweight	9 (23.7)	29 (76.3)	0.10
	Ideal	78 (41.7)	109 (58.3)	
	Pre obese	34 (35.8)	61 (64.2)	
Alcohol consumption	Yes	16 (47.1)	18 (52.9)	0.24
	No	105 (36.7)	181 (63.3)	
Smoking habits	Non smoker	117 (38.0)	191 (62.0)	0.63
	Ex- smoker	2 (50.0)	2 (50.0)	
	Current smoker	2 (25.0)	6 (75.0)	

Details of sleep pattern

As shown in figure 3 majority of the participants 210 (6%) sleeps after two hours of dinner. Out of which majority 133 are medical students and 99 (31%) sleeps between 30 minutes to 1 hour after dinner intake. Out of which majority 76 were engineering students, only 3% (11) of the participants sleeps soon after the dinner out of which 7 were engineering students. Majority of the study participants 57% (182) sleeps more than six hours.

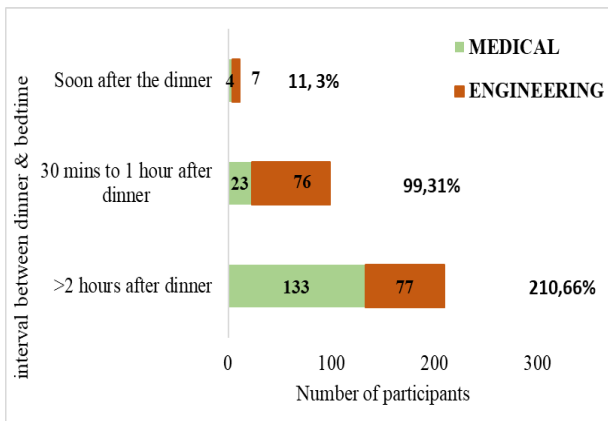


Figure 3: Average interval between dinner and bedtime among the study participants (n=320).

Details of sedentary behavior and personal habits

Of the 320 study participants majority 207 (65%) had done regular physical activity. Among the 113 participants with sedentary behavior majority 82 (72.6%) had sedentary behavior more than 6 h/day. Out of which 44(38.9%) participants were medical students and 38(33.6%) were engineering students. Of the 320 student’s majority 75% (239) students had stress. Among them 51% (122) were medical students and 49% (117) were engineering students. Among the 320 study

participants only 8 (2.8%) participants were current smokers and 4(1%) were ex-smokers. Among the 320 participants only 11% (34) of the participants consumes alcohol occasionally (once or twice per week). Among the 320 participants 6 of the study participants had a habit of both smoking and alcohol consumption.

Details of medical history and family history of GERD/other illness

Out of 320 participants 44(14%) had family history of GERD. Among the 320 study participants 23(7%) had family history of bowel disease. Out of 320 students 4(1%) had family history of GI malignancies. Among the 320 participants 15 (5%) had co morbidities. Of the overall study participants 16 (6%) participants take regular medications for their medical illness which includes GERD and other medical conditions. Among them 3 were taking treatment for GERD at the time of data collection. Majority 13 (81%) had taken allopathic medication for their medical condition. Among the 320 participants 122 (38%) consume analgesics for any said illness as per physicians’ advice or on their own.

Associated factors

As shown in table 3 There is a statistically significant association between course of the study participants and GERD. Medical students had more prevalence of GERD than engineering students. There is a statistically significant association between current stay (hostel) of the participants and GERD. Hostelers were more prevalent to GERD compared to day scholars. Significant association found between co morbidities and GERD and the participants with family history of GERD, participants with regular intake of medications for illness are significantly associated with GERD. Also, participants who with analgesic intake had significant association with GERD. There is a significant association between stress and GERD.

Table 4: Association between food habits and GERD (n=320).

Domain	Categories	GERD (%)	No GERD (%)	P value
Frequency of regular meals from hotels	Daily	8 (50.0)	8 (50.0)	0.009
	Few times in a week	68 (45.3)	82 (54.7)	
	Few times in a month	45 (29.2)	109 (70.8)	
Frequency of spicy food intake	Daily	20 (37.7)	33 (62.3)	0.04
	Few times in a week	88 (41.7)	123 (58.3)	
	Few times in a month	13 (23.2)	43 (76.8)	
Frequency of fast-food intake	Daily	4 (57.1)	3 (42.9)	0.01
	Few times in a week	69 (44.8)	85 (55.2)	
	Few times in a month	48 (30.2)	111 (69.8)	
Frequency of aerated drink consumption	Never	13 (23.6)	42 (76.4)	0.05
	Infrequently	87 (40.1)	130 (59.9)	
	Frequently	21 (43.8)	27 (56.3)	
Coffee and tea consumption	Never	16 (13.2)	24 (12.1)	0.07
	Coffee	23 (19)	19 (9.5)	
	Tea	21 (17.4)	47 (23.6)	

Continued.

Domain	Categories	GERD (%)	No GERD (%)	P value
	Both	61 (50.4)	109 (54.8)	
Midnight eating	Never	33 (31.1)	73 (68.9)	0.20
	Infrequently	68 (40.5)	100 (59.5)	
	Frequently	20 (43.5)	26 (56.5)	
Fast eating	Yes	37 (37.4)	62 (62.6)	0.91
	No	84 (38)	137 (62)	
Skipping breakfast	Skip everyday	6 (46.2)	7 (53.8)	0.091
	Skip frequently	33 (47.8)	36 (52.2)	
	Skip occasionally	52 (38.2)	84 (61.8)	
	Never skip	30 (29.4)	72 (70.6)	

From Table 4, it shows a significant association found between frequency of regular meals from hotel and GERD. It is seen that 70.8% of students who had a habit of eating their normal meals or regular foods from hotels once or twice a month had no GERD compared to those who consumes daily or few times in a week. There is a significant association between frequency of spicy food intake with GERD. It is seen that almost 76.8% of the people who consumed spicy food few times in a month did not had GERD compared to those who consumed daily or few times a week.

Frequency of fast-food intake and GERD had a significant association. It is seen that 69.8% of participants who consumed fast food few times in a month did not have GERD compared to those who consumed few times in a week or daily. There is a significant association between frequency of aerated drink consumption and GERD. Participants who consumed aerated drinks Majority of the study participants 57% (182) sleeps more than six hours had GERD compared to those who never consumed.

Other factors like physical activity, tea and coffee intake, midnight eating, skipping breakfast, smoking, alcohol had no significant association with GERD. Though not statistically significant it was seen that those who do regular physical activity were less prevalent to GERD compared to those who don't and participants those who skipped breakfast daily and frequently had more GERD compared to those who never skipped.

DISCUSSION

A cross-sectional study was conducted among 320 professional college students of medical and engineering streams aged 18 years and above. Age ranged from 18 to 25 years with mean age 20.85±1.83 years. Almost 40% of them belonged to age group 20 to 21 years. This was similar to the study conducted by Karthik et al among medical students in Chennai, the study participants between 18-25 age groups. Their mean age of medical students was 20.6 ± 1.8 years.^{12,13} Majority 187 (58.4%) had ideal BMI and 95 (29.7%) were pre obese which is similar to the study done by Sree et al where majority 54.8% participants had ideal BMI.¹³ Prevalence and symptom severity - The prevalence of GERD among the

320 professional college students was 121 (38%). Which is similar to the study done by Belete et al in Ethiopia among university students, prevalence was 32.1%.¹⁴ Other studies like Kariri et al, Bin et al had similar prevalence which was 32.2%, 34.6%.^{15,16} Whereas study by Sree et al shows prevalence of GERD among medical students was only 24.2%, and other studies by Abhilasha Sharma et al in India, Alrashed et al in Saudi Arabia, Arivan et al in India shows prevalence among medical students are 25%, 5.02%, 23.8%.^{5,13,17,18} This difference might be due to the different tool used for assessing GERD in their studies and because they selected only one profession as their study population.

The prevalence of GERD among medical students was 78 (24.57%) which is similar to the studies done by Abhilasha Sharma et al, Arivan et al among medical students in India where the prevalence was 25%, 23.8%. respectively.^{5,18} Few other studies like Balaji et al in Chennai showed prevalence of GERD as 14.8% which is lesser than this study.^{12,13}

The prevalence of GERD among engineering students was 43 (13.43%) among them 16 (10%) were final year students followed by 10 (6.2%) participants from third year. This showed as the academic year increases risk of developing GERD also increased.

Among the participants who diagnosed as GERD 65 (20.4%) had mild symptoms, 42 (13.1%) had moderate symptoms and 14 (4.4%) had severe symptoms of GERD. Whereas in other study by Sharma et al showed 58.6% had mild, 38.6% had moderate, and 2.7% had severe reflux symptoms.⁵ Majority had mild symptoms which is comparable. Severe GERD symptom is associated with a deterioration in quality of life and this can affect daily activities of the individuals.^{3,12,14}

In this study 235 (77%) participants had both dysmotility (dyspepsia) symptoms and acid reflux related symptoms, 52 (17%) had only dysmotility symptoms and 18 (6%) showed only acid reflux related symptoms while in the study by Gaude et al showed 53% had dysmotility symptoms.¹⁹ Other studies in Japan showed higher symptoms of dysmotility.²⁰ In this study among the 305 symptomatic individuals' majority 246 (81%) of the participants symptoms were relieved spontaneously

followed by 32 (10%) participants by eating and 10 (3%) participants symptoms relieved by other factors which includes exercises and walking as per students. While in a study done by Challa et al in India showed 70.7% of the participants symptoms resolved on their own.²¹

In this study 161(51%) took regular food from hostel mess, among them majority 133(41.6%) were medical students and 22 (7%) took outside foods. This contributes higher prevalence of GERD among medical students.

Associated factors

The course among the study participants and GERD was found to be statistically significant (p value <0.0001) in this study. Majority of the medical students (24.57%) had GERD than engineering students which is contrary to the study conducted by Nikhilesh Challa et al majority of the engineering students had GERD than medical and other non-professional students.²¹ Current stay in hostel is significantly associated with GERD (p value=0.002). This might be because hostelers may have an irregular eating habits than those who stay at home and showed higher prevalence to GERD.

Participants with comorbidities, regular medication intake for their illness and were significantly associated with GERD. It is similar to studies conducted by Sharma et al, Parasher et al where comorbidities and GERD found significant.^{5,22,23} Usage of NSAID/ painkillers intake for any said illness were significantly associated with GERD symptoms which is similar to the studies by Kairi et al Challa et al, Ruszniewski et al NSAID raises the production of stomach acid, decreasing the pressure of the lower esophageal sphincter, and directly damaging the mucosa, NSAIDs may make GERD worse.^{15,21,23,24}

Smoking, alcohol consumption had no significant association with GERD in this study. This is contrary to many studies in India by Karthik et al, Kariri et al where smoking, alcohol consumption is significantly associated with GERD.¹²⁻¹⁵ This difference might be due to lower prevalence of smokers in this study and might be due to disclosure of smoking habits among the study participants.

Positive family history of GERD had a significant association with GERD (p value=0.01). Similar findings found in studies like Bin Abdulrahman et al, Essa et al. where positive family history of GERD had a significant association with GERD.^{16,25} It suggests that there may be an underlying genetic link to the disease. This suggests that early adoption of preventive lifestyle habits and better understanding may be helpful for people with a family history of GERD. Dietary habits like Frequency of regular meals from hotel, frequency of spicy food intake and fast-food intake is significantly associated with GERD. It is similar to the study conducted by Nikhilesh Challa et al where food from restaurant had significant association with GERD.²¹ Participants who consumed fast

food few times in a week and daily had more prevalent to GERD compared to those who consumed few times in a month or never consumed similar studies in Chennai, Chandigarh, showed that fast food consumption is significant with GERD.^{15,17,21} Almost 43(76.8%) people who consumed spicy food few times in a month did not had GERD compared to those who consumed daily and few times a week. Other studies by Karthik et al, Khodarahmi et al in Chennai and Iran showed majority consumed spicy foods frequently and associated with GERD.^{12,26} Participants who never ate midnight snacks had less GERD compared to those who had frequently but it's not statistically significant. Other studies in India, Nagahama city showed a significant association between midnight eating and GERD.^{18,27} This difference may be due to different study population and different professionals among them. Another study by Abhilasha Sharma et al had higher findings with skipping meals and found to be statistically significant with GERD.^{5,12} while in this study there is no significant association between skipping breakfast and GERD.

Majority 170 (60.8%) of the participants had a habit of both coffee and tea consumption but there is no significant association with GERD. Other studies showed a significant association between regular tea consumption, coffee consumption and GERD.^{10,14,19,25}

Majority 108 (83%) participants who consumed aerated drinks frequently/ infrequently were more prevalent to GERD than those who never consumed and it is statistically significant to GERD (p value=0.05). This finding is similar to the studies done by Alrashed, et al in Saudi Arabia, Abdulrahman et al, Arivan et al frequent consumption of carbonated drinks/soft drinks was significantly associated with GERD.^{16,17,18,27} The acidity of soft drinks can lower esophageal pH, potentially inducing GERD symptoms. Carbonation can lead to increased gastric distention, increasing the frequency of transient lower esophageal sphincter relaxations.²⁸⁻³¹ In this study 210 (66%) sleeps after two hours of dinner. Other studies showed similar results that 54.1% of participants sleeps one hour to two hours after dinner.¹³ Few other studies in Saudi Arabia, Pune and Chennai showed contrary results that majority of participants sleeps soon after the dinner and had significant association with GERD.^{5,12,17,21,26,32} while in this study it is not significant but 50% of participants who slept soon after the dinner had more prevalent to GERD. Many studies showed physical activity decreased the risk of GERD.^{4,13,21,23,33,34} which is similar to this study where participants who do physical activity had less GERD than those who chosen sedentary life. Regular physical activity found to be a protective factor among both engineering and medical students. Stress is significantly associated with GERD (p value=0.005) which is comparable to many other studies where person with stress showed higher prevalence of GERD compared to non-stressed.^{5,12,25,35} This affects the quality of life of the participants.

Limitations

The findings are specific to professional college students in North Kerala and may not be generalize the other populations. GERD is screened through frequency scale of symptoms. No other investigation for diagnosis.

CONCLUSION

GERD prevalence among professional college students is 38%, with a higher rate among medical students 24.57%. Symptom severity varies, with mild to severe symptoms. Factors associated with GERD include medical stream, current stay, co-morbidity, family history, and medication intake. Physical activity is protective, while frequent hotel meals, spicy and fast-food consumption, and stress can trigger symptoms. Promoting healthy lifestyle practices such as balanced diets, regular physical activity, stress management can reduce the risk factor.

Recommendations

By encouraging students to avoid trigger foods and drinks (spicy, high-fat, caffeinated, and acidic items), promoting healthy lifestyles (balanced diet, regular exercise, stress management, adequate sleep), organizing educational programs in professional colleges to improve awareness and promote professional medical consultation instead of self-medication, and providing counselling services to help students manage academic stress, a major contributor to GERD symptoms.

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