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Prevalence of Dyspeptic Symptoms among AYUSH medical students in Chennai: A cross sectional study

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Abstract
Background: Dyspepsia is defined as any pain, discomfort, or nausea referable to the upper alimentary tract which may be intermittent or continuous, has been present for one month or more, and is not precipitated by exertion and not relieved within five minutes by rest. Patients with associated jaundice, dysphagia, or bleeding were excluded (4). Dyspepsia is an extremely common symptom with a prevalence in the community of approximately 30% (5).
Methods: This was a cross sectional study conducted on AYUSH medical students in AYUSH medical colleges of Chennai. All participants were interviewed for dyspeptic symptoms using the questionnaire on FSSG. Additional questions include enquiries on medical history and lifestyle factors.
Results: Of the 250 students, 28 (11.2%) had Dyspeptic symptoms. Of these 28 symptomatic students 11 (39.2%) had mild, 11 (39.2%) moderate, and 6 (21.42%) had severe symptoms. On univariate analysis, there is a significant association p (<0.05) between gender and symptom severity for dyspepsia with more males having low symptoms than females. While duration of sleep was statistically associated p (<0.05) with symptom severity for Dyspepsia. Only duration of exercise was statistically associated with symptom severity for Dyspepsia.
Conclusions: Prevalence of symptoms of Dyspepsia in AYUSH medical students is 11.2%, majority had mild symptoms. Associated acid reflux symptoms were present in 88.8%. Factors predisposing to Dyspepsia in them are, gender, inadequate sleep, sleeping within one hour of taking dinner, duration of exercise, those who exercised more than 30 minutes on regular basis.

Keywords: Yucatec maya, traditional medicine, plant use, herbalist

Introduction
Digestive disorders and diseases are a significant cause of illness that affects millions of people over the world [1]. Very few studies on magnitude of dyspeptic symptoms and gasteroesophageal disease in student community have been done and there is none so far from India [2]. According to the American Nutrition Association, 70 million people suffer from some form of digestive issues on daily basis [3].
Dyspepsia is defined as any pain, discomfort, or nausea referable to the upper alimentary tract which may be intermittent or continuous, has been present for one month or more, and is not precipitated by exertion and not relieved within five minutes by rest. Patients with associated jaundice, dysphagia, or bleeding were excluded [4]. Dyspepsia is an extremely common symptom with a prevalence in the community of approximately 30% [5]. Recent studies have suggested, however, that patients who present with dyspepsia are often misdiagnosed [6]. Lifestyle factors like dietary habits, consumption of carbonated and alcoholic beverages and tobacco smoking have been investigated as risk factors for Dyspepsia. Importantly, psychological factors are linked to the illness experience and can modify subjective symptoms [8].
The signs of dyspepsia are generally gastroduodenal, non-specific, and including general abdominal pain, early satiety, and bloating. Patients often neglect the disorder and do not have more serious symptoms, such as belching, heartburn, nausea, vomiting, and pain, until clinically present. Although untreated dyspepsia is not associated with an increased risk of death, its pathology may put the patient at higher risk of secondary tissue injury, such as gastric reflux mucosal erosion leading to chronic inflammation, or may mask symptoms of other gastrointestinal conditions. Epidemiologic studies of dyspepsia in Asian countries have reported incidence rates between 8% and 30% [8]. Population based surveys in many countries have revealed a highly variable prevalence, from 1.8% to 57%, with a global average of 20.8% in the published literature [9].

There were many studies among college students and medical students. There is no specific study among AYUSH medical students separately. So the current study was designed as a Cross sectional study of AYUSH medical college students in Chennaito determine the prevalence of Dyspeptic symptoms and investigate its relation to various demographic and physical paramaters to find out the risk factors.

Materials and Methods

Study Population

Study recruitment was conducted at five AYUSH medical college campuses in Chennai for 3 months duration. Medical students in the undergraduate (only final-year students) programs were included in the study. A total of 250 students (27.6% males; 72.4% females) were interviewed and offered the survey questionnaire for self-completion. Sample size is calculated by using prevalence rate as 20%, from the previous study among medical students in Southern India.

Study Design

A cross sectional study was done in 2019 and data collection was completed over 3 months.

Inclusion criteria

1. Ayush medical students (Final year)
2. Both genders
3. Willing to participate in the study

Exclusion criteria

1. Unwilling students
2. Incomplete answers to the questionnaire

Methodology

Students studying in final year of AYUSH in medical colleges were selected as per the inclusion and exclusion criteria. Demographic characteristics of students such as age, gender, lifestyle habits (smoking, alcohol intake, dietary and sleep hygiene) was recorded in the questionnaire. All participants were interviewed by the investigator herself for reflux symptoms using Frequency Scale for the Symptoms (FSSG) questionnaire, which comprises of 12 questions regarding symptoms, to which participants answered correspondingly along with the frequency of symptoms: never, occasionally, sometimes, often oral ways. For this analysis, FSSG score was used because it can measure not only the symptoms linked to acid-reflux but also the dyspeptic symptoms. At the eight-point cut-off, FSSG showed 62 percent sensitivity, 59 percent specificity, and 60 percent accuracy in diagnosis.

Additional questions include enquiries on medical history and lifestyle factors. This questionnaire was self administered to all the study subjects so as to reduce interviewer bias. All the points in both the questionnaires were explained to the students. Ethical clearance was obtained from the ethics committee of our medical institute and written informed consent was taken from all the participants. Additional questions include medical history inquiries and factors regarding lifestyle. To minimize interviewer bias, this questionnaire was self-administered to all the subjects of the study. All of the points were explained to the students in both the questionnaires. Ethical approval was obtained from the ethics committee of our medical institute, and written informed consent was obtained from all the participants.

Statistical Analysis

Using SPSS software version 24, the data collected were analysed using correct statistical methods. Frequency was calculated for categorical variables and mean ± standard deviation for continuous variables. Fisher's exact test instead of chi-square test is used to test the association between two variables when one or more cell counts are less than 5, was used for comparing categorical variables. Univariate analysis was done to assess the association of Dyspepsia with each independent variable in order to evaluate possible risk factors and find a p-value of < 0.05 as significant.

Results

Detailed demographic profile of these 250 participants is summarized in Table 1. Out of these 250 medical students, 69 (27.6%) were male and 181 (72.4%) were female. Their age ranged between 22-24 years. There were 50 students each in final year of AYUSH course. Of them, majority were of age 22 (78.4%) and females (72.4%). More than three-fourth were day scholars (76.4%).

Of the 207 (82.8%) non-vegetarians, none of them consumed non-veg on a daily basis and most of them reported to have consumed non-veg only few times a week (74.4%). Nearly half of them consumed aerated drinks infrequently. Surprisingly, 44% of the participants claimed that they never consume coffee or tea. Only 108 (46%) reported that they consume mid-night snacks and of them only 8.4% consume frequently. When it comes to skipping breakfast, 13 of them skip every day, 38 skip frequently, 103 skip occasionally and only 96 never skip breakfast. Summarised in Table 2

When it comes to physical activities, nearly three-fourth (183) reported to engage in some sort of physical activity. More than half of them reported to sleep for 3 to 6 hours at night, with 46.4% sleeping more than 6 hours and only 3 of them sleeping from 1 to 3 hours a night. When asked if the participants have any trouble sleeping, 62 (24.8%) reported to have trouble. Summarised in Table 3.

Prevalence of Dyspeptic Symptoms

Of the 250 students, 28 (11.2%) had Dyspeptic symptoms. Of these 28 symptomatic students 11 (39.2%) had mild, 11 (39.2%) moderate, and 6 (21.42%) had severe symptoms. 222 (88.8%) of students with Dyspepsia had associated acid reflux symptoms, of these students 66 (26.4%) had mild, and 12 (4.8%) and none had severe symptoms.

Factors Associated with Dyspeptic Symptoms

Univariate analysis revealed, there is a significant association p (<0.05) between gender and symptom severity for dyspepsia with more males having low symptoms than females. There is no association between branch of AYUSH, Religion and mode of living with symptom severity for Dyspepsia. While duration of sleep was statistically associated p (<0.05) with symptom severity for Dyspepsia. Being a vegetarian or non-vegetarian, breakfast skipping pattern were not found to be statistically associated with symptom severity for Dyspepsia. Neither engaging in physical activity nor trouble sleeping had a significant association with symptom severity for Dyspepsia. But duration of exercise was statistically associated with

symptom severity for Dyspepsia. These are summarised in Table 4

Discussion

Dyspepsia has been accepted as a significant problem of adult western population. There are very few studies on Dyspepsia in student community especially medical students who are always under pressure of studies and examinations. Psychological stress, as a risk factor and even one of the causes of dyspepsia, is higher in medical students than the general population. Studieshave shown that psychological stress may produce symptoms of Dyspepsia through increasing postprandial fullness, early satiation, epigastric pain, abdominal bloating, abdominal belching, nausea, vomiting, heart burn. In addition, there are many other risk factors for developing dyspepsia in students such as consuming more tea and coffee than the general population, irregular meal timings and quick eating [10].

Dyspepsia was present in 11.2% of AYUSH medical students and of this majority had either mild (39.2%) or moderate (39.2%) symptoms, severe symptoms were present in only in 21.42% of Dyspeptic subjects. These prevalence rates are higher than those reported from India and various Asian countries but similar to figures of 10–30% reported from west [2]. Few community based epidemiological studies from Europe reported a much higher prevalence of up to 70% [11]. The strength of this study is the interview-based filling up of questionnaire by the principal investigator. This has an advantage over the self-administered questionnaires in terms of avoiding the misinterpretation of non-dyspeptic symptoms for reflux symptoms by the participants. Most of the studies on prevalence of Dyspepsia have used self-reported questionnaire.

Multitude of Questionnaires exist in literature for assessing symptoms of GERD, response to therapy and for assessment of health-related quality oflife (HRQOL) [12] Previous studies from India using the same questionnaire in different study populations have reported a higher prevalence. A study on employees of a government hospital in northern India found a prevalence of 16.2% [13]. Another study conducted in Ladakh, which is a high altitude area, reported a prevalence of 18.7% [13].

Since, the study population included only medical students in age range 22-24 years, no correlation can be found with age in this study. A review in 2005, reported inconsistent relation of GERD with gender [14]. In a study on 620 university students in Iran, GERD was more prevalent in females, although this difference was not significant. [15]

R. Bitwayiki *et al*., studied the prevalence and quality of life of functional dyspepsia among Rwandan healthcare workers. In this study smoking, use of alcohol were not associated with dyspeptic syndrome. This study shown 39.2% of patients were not smokers 41.9% of patients were not alcoholic. In our study 96.7% of patients were not alcoholic and 98.3% of patients were not smokers, which indicates smoking and alcohol has not been shown to be a risk factor in our study [9].

K. Matsueda *et al*., also observed that 135 (33.3%) of patients came under body weight of 50-60 subgroup. In our study 30 (50.0%) of patients came under 30-60 kilogram of body weight which indicates a higher incidence of FD. The role of food habit had not been well studied probably due to the diversity of food habits among the individual populations [16].

Sundeep S Shah *et al*., observed in a study patients symptoms were worsened after taking non vegetarian diet. Spicy foods, fried or food prepared outside the home increases the abdominal fullness. In this study the frequency of dyspepsia was not related to the quantity of spices or type of diet (vegetarian or non vegetarian) consumed. In our study 38.3% of patients were vegetarians and 61.7% of patients are non vegetarians. This study proves that people consuming non vegetarian food are more prone to develop dyspeptic syndromes [17].

Wildi *et al*., in a study on healthy volunteers showed that eating a 690 K calorie meal in five rather than thirty minutes induced up to 50 per cent more acid reflux episodes due to increasedgastric acidproductionand increased transient lower oesophageal sphincter relaxations [18]. Significantly more students who were missing their breakfast regularly have symptoms of GERD. This may be indirectly related either to bad sleep hygiene or consuming more of junk food in lieu of regularly timed breakfast [2]. Habit of sleeping within an hour of eating dinner is associated with Dyspeptic symptoms.

Conclusion

This interview based questionnaire study from AYUSH medical colleges in Chennai found the prevalence of dyspeptic symptoms in AYUSH medical students to be 11.2%. This prevalence is as high as that reported from western countries. The potential risk factors of Dyspepsia in medical students are gender, inadequate sleep, sleeping within one hour of taking dinner, duration of exercise, those who exercised more than 30 minutes on regular basis. To reduce the burden of Dyspeptic symptoms among students they should be educated on orderly eating habits, good sleep hygiene, maintaining ideal body weight and avoiding exercise for longer duration.

Table 1: Demographic characteristics of the study participants (N=250)

Variables	n (%)
Age	
22	196 (78.4)
23	48 (19.2)
24	6 (2.4)
Gender	
Male	69 (27.6)
Female	181 (72.4)
Ayush branch	
Ayurveda	50 (20.0%)
Yoga	50 (20.0%)
Unani	50 (20.0%)
Siddha	50 (20.0%)
Homoeopathy	50 (20.0%)
Religion	
Hindu	164 (65.6)
Muslim	68 (27.2)
Christian	18 (7.2)
Others	0 (0.0)
Mode of Living	
Hosteller	59 (23.6)
Day Scholar	191 (76.4)

Table 2: Eating habits of the study participants (N=250)

Variables	n (%)
Vegetarian	43 (17.2)
Non-vegetarian	207 (82.8)
Frequency of non-veg consumption	*n=207*
Daily	0 (0.0)
Few times a week	154 (74.4)
Few times a month	53 (25.6)
Frequency of food consumption from restaurants	
Daily	17 (6.8)
Few times a week	54 (21.6)
Few times a month	179 (71.6)
Frequency of Aerated drinks consumption	
Never	86 (34.4)
Infrequently	124 (49.6)
Frequently	40 (16.0)
Frequency of tea/coffee consumption	
Never	110 (44.0)
1-3 cups per day	103 (41.2)
>3 cups per day	37 (4.8)
Frequency of mid-night snack consumption	
Never	142 (56.8)
Infrequently	87 (34.8)
Frequently	21 (8.4)
Frequency of skipping breakfast	
Skip every day	13 (5.2)
Skip frequently	38 (15.2)
Skip occasionally	103 (41.2)
Never skip	96 (38.4)

Table 3: Physical activities and sleep habits of the study participants (N=250)

Variables	n (%)
Engage in physical exercises	183 (73.2)
Frequency of engaging in physical exercises	*n=183*
Everyday	51 (27.9)
At least 5 times per week	62 (33.9)
<5 times per week	70 (38.3)
Mode of exercise	n=183
Walking briskly	134 (73.2)
Jogging	23 (12.6)
Going to the gym	26 (14.2)
Duration of exercises	*n=183*
>30 minutes	48 (26.2)
30 minutes	70 (38.3)
< 30 minutes	65 (35.5)
Duration of sleep at night	
1-3 hours	3 (1.2)
3-6 hours	131 (52.4)
>6 hours	116 (46.4)
Have trouble sleeping	62 (24.8)

Table 4.1: Symptom Severity (FSSG score) by Gender (N=250)

Gender	FSSG Symptoms Grades			Total	Fisher's exact/ Chi-square (p-value)
	Low (0-7) n (%)	Mild (8-12) n (%)	Moderate (13-20) n (%)		
Male	56 (81.2)	11 (15.9)	2 (2.9)	69	6.8 (0.031)*
Female	116 (64.1)	55 (30.4)	10 (5.5)	181	
Total	172	66	12	250	

Table 4.2: Symptom Severity (FSSG score) by Mode of Living (N=250)

Mode of living	FSSG Symptoms Grades			Total	Fisher's exact/ Chi-square (p-value)
	Low (0-7) n (%)	Mild (8-12) n (%)	Moderate (13-20) n (%)		
Hosteller	41 (69.5)	12 (20.3)	6 (10.2)	59	5.7 (0.053)
Day scholar	131 (68.6)	54 (28.3)	6 (3.1)	191	
Total	172	66	12	250	

Table 4.3: Symptom Severity (FSSG score) by Duration of Sleep (N=250)

Duration of Sleep	FSSG Symptoms Grades			Total	Fisher's exact/ Chi-square (p-value)
	Low (0-7) n (%)	Mild (8-12) n (%)	Moderate (13-20) n (%)		
1-3 hours	3 (100.0)	0 (0.0)	0 (0.0)	3	10.4 (0.026)*
3-6 hours	100 (76.3)	28 (21.4)	3 (2.3)	131	
>6 hours	69 (59.5)	38 (32.8)	9 (7.8)	116	
Total	172	66	12	250	

Table 4.4: Symptom Severity (FSSG score) by Duration of Exercise (N=183)

Duration of Exercise	FSSG Symptoms Grades			Total	Fisher's exact/ Chi-square (p-value)
	Low (0-7) n (%)	Mild (8-12) n (%)	Moderate (13-20) n (%)		
>30 minutes	39 (81.3)	9 (18.8)	0 (0.0)	48	20.0 (<0.000)*
30 minutes	46 (65.7)	15 (21.4)	9 (12.9)	70	
<30 minutes	39 (60.0)	26 (40.0)	0 (0.0)	65	
Total	124	50	9	183	

References

1. Alrashed AA, Aljammaz KI, Pathan A, Mandili AA, Almatrafi SA, Almotire MH *et al*. Prevalence and risk factors of gastroesophageal reflux disease among Shaqra University students, Saudi Arabia. J Fam Med Prim Care 2019;8(2):462.
2. Sharma A, Sharma PK, Puri P. Prevalence and the risk factors of gastro-esophageal reflux disease in medical students. Med J Armed Forces India. 2018;74(3):250-4.
3. Digestive Issues | American Nutrition Association [Internet], 2019. Available from: http://americannutritionassociation.org/newsletter/digestive-issues
4. Talley NJ, Piper DW. The Association between Non-Ulcer Dyspepsia and Other Gastrointestinal Disorders. Scand J Gastroenterol 1985;20(7):896-900.
5. Krag E. Non-ulcer dyspepsia introduction: epidemiological data. Scand J Gastroenterol Suppl. 1982;79:6-8.
6. Fuchs KH, Musial F, Ulbricht F, Breithaupt W, Reinisch A, Babic B *et al*. Foregut symptoms, somatoform tendencies, and the selection of patients for antireflux surgery. Dis Esophagus. 2017;30(7):1-10.
7. Wright CE, Ebrecht M, Mitchell R, Anggiansah A, Weinman J. The effect of psychological stress on symptom severity and perception in patients with gastro-oesophageal reflux. J Psychosom Res. 2005;59(6):415-24.
8. Ghoshal UC, Singh R, Chang FY, Hou X, Wong BCY, Kachintorn U *et al*. Epidemiology of uninvestigated and functional dyspepsia in Asia: facts and fiction. J Neurogastroenterol Motil. 2011;17(3):235-44.
9. Bitwayiki R, Orikiiriza JT, Kateera F, Bihizimana P, Karenzi B, Kyamanywa P *et al*. Dyspepsia prevalence and impact on quality of life among Rwandan healthcare workers: A cross-sectional survey. S Afr Med J. 2015;105(12):1064.
10. Alsuwat OB, Alzahrani AA, Alzhrani MA, Alkhathami AM, Mahfouz MEM. Prevalence of Gastroesophageal Reflux Disease in Saudi Arabia. J Clin Med Res. 2018;10(3):221-5.
11. Jones R, Hungin A, Phillips J, Mills J. Gastro-oesophageal reflux disease in primary care in Europe: Clinical presentation and endoscopic findings. Eur J Gen Pr. 2009;1:149-54.
12. Mouli VP, Ahuja V. Questionnaire based gastroesophageal reflux disease (GERD) assessment scales. Indian J Gastroenterol. 2011;30(3):108-17.
13. Kusano M, Shimoyama Y, Sugimoto S, Kawamura O, Maeda M, Minashi K *et al*. Development and evaluation of FSSG: frequency scale for the symptoms of GERD. J Gastroenterol. 2004;39(9):888-91.
14. Grainger SL, Klass HJ, Rake MO, Williams JG. Prevalence of dyspepsia: the epidemiology of overlapping symptoms. Postgrad Med J. 1994;70(821):154-61.
15. Dent J, El-Serag HB, Wallander M-A, Johansson S. Epidemiology of gastro-oesophageal reflux disease: a systematic review. Gut. 2005;54(5):710–7.
16. Matsueda K, Hongo M, Tack J, Saito Y, Kato H. A placebo-controlled trial of acotiamide for meal-related symptoms of functional dyspepsia. Gut. 2012;61(6):821-8.
17. Shah S, Bhatia S, Mistry F. Epidemiology of dyspepsia in Mumbai. Indian J Gastroenterol Off J Indian Soc Gastroenterol. 2001;20:103-6.
18. Wildi SM, Tutuian R, Castell DO. The influence of rapid food intake on postprandial reflux: studies in healthy volunteers. Am J Gastroenterol. 2004;99(9):1645-51.