DOI: https://doi.org/10.53350/pjmhs22165386

ORIGINAL ARTICLE

Prevalence and Risk Factors of Gastroesophageal Reflux Disease Among the Study Population: A Cross-Sectional Study

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ABSTRACT

Aim: To determine the prevelance and risk factors of gastroesophageal reflux disease among the study population
Study design: A cross-sectional study
Place and Duration: This study was conducted at Poonch Medical College Rawalakot AJK Pakistan from January 2020 to January 2021.
Methodology: This study was conducted on a sample size of 302 people utilizing a researcher-created checklist and questionnaire. The survey was made available on the internet. The data was analyzed using SPSS version 22, which comprised the Chi-square test and descriptive statistics. Questions about increased pain intensity, food intake or not, and other signs and symptoms of reflux and factors that could increase chances of risk such as drinking coffee, smoking, spicy food, certain types of drugs, and alcohol were determined. We also inquired as to whether any investigations had been conducted.
Results: The cumulative prevalence of GERD among the individuals was 61.7 percent. Significant discomfort was seen in 12 percent of the cases. Furthermore, 61.7% reported lack of appetite, 55.8% indigestion, 57% nausea and vomiting, 55.5% food regurgitation, and 41.5% chest discomfort as an associated symptom. The primary risk factors discovered were coffee consumption in 77.5%, spicy food in 58.0%, smoking in 17.1% fatty meals in 84.8%, NSAD in 24.5%, and stress in 71% participants. There was no significant difference in the occurrence of GERD based on educational level, age, employment status, marital status, or gender.
Conclusion: The percentage of gastroesophageal reflux disease (61.7 percent) was extremely high. Spicy foods, coffee use, fatty meals, smoking and stress were identified as factors that increased risk. Endoscopic investigations on a population basis are advised.
Keywords: gastroesophageal reflux disease, adults, spicy food, prevalence

INTRODUCTION

The epidemiological features of heartburn and gastroesophageal reflux disease (GERD) have piqued researchers' attention in recent years due to its rising frequency and implications. Gastroesophageal reflux disease refers to a wide range of reflux symptoms, including acid regurgitation and heartburn, as well as Barrett's esophagus and endoscopic reflux. This disease may have typical or atypical presentation. In typical form, its main symptoms are the feeling of burning in the chest or the upper central abdomen is heartburn and it often is seen to begin in the chest and then spread upwards to the throat, going to the neck, and can be spread to the angle of the jaw. while in atypical form the patient presents mainly with extra-esophageal symptoms like cough, laryngitis, and asthma. (1). GERD and heartburn diagnosis and treatment are crucial since the syndrome has a variety of reported consequences in addition to the highly uncomfortable typical symptoms. (2) It may have an impact on quality of life, health expenses, functional activity, and the risk of esophageal cancer in Barrett's esophagus patients. The study is based on symptoms or indicators of disease, the prevalence of heartburn in the various community differs. According to average, 45 million Americans suffer from the condition of heartburn at least once a month, and furthermore, 15 million go through this sensation at least once the whole day. The percentage rise of GERD in eastern Asia has been reported to have been ranging from 2.5% to 6.7%, which includes suffering from heartburn with regurgitation in most cases at least once a week.

In that study, the male population and age were the most likely risk variables. In China, chest discomfort is the most common extra esophageal symptom of GERD, but in Japan, severe esophagitis has been linked to asthma. GERD was shown to be prevalent in research in North Bihar (23.6 percent). The frequency was 18 percent among males and 30 percent among females. Heartburn with regurgitation was the most common symptom. Poor socioeconomic level, being between the ages of 31 and 40 years, and being a woman were all factors that contributed to this disorder. The use of meat and tea, as well as a fatty and spicy diet, were all determined to be increasing the chances for GERD. The goal of this study was to determine the frequency and risk factors of GERD in the study population. (3)

METHODOLOGY

The study was carried out by utilizing a checklist and questionnaire created by the researcher. The sample size was determined using the following formula: n=z2p (1-p)/e2. Data were obtained from 302 people ranging in age from 18 to 75 years. (4) Data were obtained using a checklist created by the researcher and a questionnaire administered using the internet. (5) Questions chosen to meet the study goals were included in the questionnaire and checklist. The items in the questionnaire were divided into four sections: Questions about increased pain intensity, food intake or not, and other signs and symptoms of reflux; Factors that could increase chances of risk such as drinking coffee, smoking, spicy food, certain types of drugs, and alcohol; and, we also inquired as to whether any investigations had been conducted. (6)

The program for statistical social sciences version 20 was used to examine all of the data. For the quantitative and prevalence variables, descriptive statistics were chosen to be utilized. The statistical significance was defined as a two-sided p-value of less than 0.05. As an inferential statistics approach, a Chi-square test was employed. (7) The study was given approval by the Research and Ethics Committee at the University. The questionnaire starts with a brief explanation of the study's goals and importance. (8)

RESULTS

Socio-demographic features of the individuals are shown in Table 1. Participants were found to be in majority were females (68.6%), the most common age group (18-25), (57.7 %) were unmarried,

and (74.6%) were well educated. (9) Sixty-one percent of them were working. In terms of the presence of gastroesophageal reflux among the population surveyed, 61.6% had this condition. Table 2 depicts the characteristics, chances of risk, and therapy of GERD among investigated patients; 21.4% rated the discomfort as continuous, 11.8% as severe, and 34.5% as moderate. (10)

Table 1: Socio-demographic characteristics of study participants

Variables		n (total=302)	%
Gender	Male	96	31.4
	Female	206	68.6
Age (Years)	18-25	161	53.5
	26-35	83	27.7
	36-45	37	12.5
	46-55	17	4.1
	>55	8	1.9
Education	Primary	6	1.7
	Secondary	64	21.4
	University or more	226	74.6
	Preparatory	8	2.3
Status	Single	173	57.7
	Widowed	3	0.7
	Divorced	11	3.3
	Married	115	38.5
Occupation	Employed	105	34.0
	Retired	12	4.0
	Not employed	186	62.0

In terms of related conditions, 57% reported vomiting and nausea, 55.8% reported indigestion, 61.8% experienced lack of appetite, 41.5% reported chest discomfort and 55.5% reported food regurgitation. (11) Special meals (84.8%) were the most common predisposing factor, followed by smoking (17.1%), spicy cuisine (58.0%), stress (71%), and coffee consumption (77.5%). (12) Antibiotics were used to treat the patient (50%). Table 3 depicts the link between socio-demographic characteristics and gastroesophageal reflux in the population examined. The following had no influence over the GERD study, like age, gender, marital status, educational level, or occupational position. (13)

Table 2: Gastroesophageal reflux characteristics in studied cases (N=186)

GERD		n	%
Severity of pain	Moderate	100	53.8
	Mild	64	34.5
	Severe	22	12
Associated conditions and symptoms	Nausea and/or vomiting	106	56.9
	Regurgitation of food	103	55.5
	Indigestion	104	55.8
	Chest pain	77	41.5
	Loss of appetite	115	61.7
	Loss of weight	46	24.5
Predisposing factors	Spicy food	108	58.0
	Special meals (mainly fatty meals)	158	84.8
	Consumption	7	3.8
	Smoking	32	17.1
	Coffee drinking	144	77.5
	Psychic stress	132	71.2
	NSAD consumption	46	24.5
	Esophageal diseases	24	13.0
Treatment	Hospital admission	71	38.1
	Medications	93	50.1
Previous investigations	Ultrasound	3	1.7
	Urea breath test	6	3.3
	Gastroscopy	17	9.0
	Barium meal	13	7.1

Table 3: Difference between socio-demographic characters and gastroesophageal reflux of the study population

Variables		Peptic ulcer; n (%)		Total (n=315); n (%)	Chi- Square	p- value
		Yes (n=185)	No (n=117)			
Gender	Female	132	75	207	1.32	0.153
	Male	54	41	95		
Age group (years)	18-25	91	71	162	5.81	0.213
	26-35	58	26	84		
	36-45	27	11	38		
	46-55	7	5	12		
	>55	3	3	6		
Educational level	Primary	4	3	4	0.65	0.9
	Secondary	42	23	65		
	University	136	89	225		
	Preparatory	5	2	7		
Marital status	Single	95	71	178	5.41	0.25
	Married	81	41	123		
	Divorced/widowed	9	5	14		
Working status	Not employed	121	74	179	1.24	0.53
	Retired	9	3	12		
	Employed	65	38	103		

DISCUSSION

The purpose of this study was to determine the prevalence of GERD disease, as well as its key features and risk factors, among the study participants. This study reveals a significant frequency of GERD in general (61.6%). (15) The findings were considerably high when compared to the Saudi research which observed that 15% of individuals had GERD. The presence of GERD was found to be much higher in the Indian research in comparison with the results that were found in East Asia, with the presence being at 22.2%. GERD was observed in Brazil in 7.3% individuals. Two investigations in Tehran found a presence of (21.2%), and (12.3%) in Kalaleh. Research in Bihar found that the frequency of GERD was high that was 23.6%. The findings of this study were considerably higher than previous research that had been done before in Saudi, which had observed GERD in 15 % people. (16) A Chinese study found that acid taste in the mouth (8.7%), regurgitation (10.8%), heartburn (4.0%), unpleasant sensation of food coming up from the stomach (8.7%), breastbone having the sensation of burning (2.4%) or in pain (2.8%) were the associated symptoms. The presence of Gastroesophageal reflux disease was determined in medical check-up studies based on symptoms such as heartburn or acid regurgitation at least once a week (5.0% - 8.2%). The most common symptoms found were headaches, nightmares, restlessness, psychological discomfort, and anxiety, in individuals suffering from GERD in the Iranian research. (16) In terms of factors causing risk, the study found that fatty meals (84.8%) were the most common, followed by stress (71%), coffee consumption (77.5%), smoking (84.8%), and spicy food (58.0%). Pakistani research identified factors inducing risk to be raw onions (52.41 %) and spicy meals (69.81%), regular use of NSAIDs, smoking, and as well as many having a high BMI (46.02%). Smoking and the use of NSAIDs are known to be related to GERD

symptoms. (18) Studies from Europe and Iran found a link between GERD symptoms and aspirin use or NSAIDs. Our findings supported previous research that found a link between current smoking and GERD symptoms in British and Indian participants. (19) Studies on Iranian and Indian populations found a link between fried food intake and GERD symptoms. Most investigations, like those done in Spain, Sweden, and the United States, found no link between cigarette smoking and the incidence of GERD. Research in Bihar identified spicy food as a risk factor. There was no significant relationship between GERD and age, gender, marital status, job status in our research, or educational level. (20)(21)

CONCLUSIONS

The prevelance of gastroesophageal reflux disease in 61.8 percent participants was exceptionally high. Stress, coffee use, spicy foods, long-term use of NSAIDs, smoking, and fatty meals were identified as increasing the chances of this condition. The endoscopic investigations on a population basis are advised. It is advised that community-wide awareness campaigns be organized. Healthcare practitioners must be aware of local attitudes and practices.

Funding Resources: None.
Conflict of Interest: None.
Permission: It was taken from the ethical review committee of the Institute.

REFERENCES

1. Samejo KH, Kumar SK, Lail G, Langove AB, Ahsam S, Devi A, Mandhwani R, Luck NH. Frequency of Obesity among Gastroesophageal Reflux Disease Patients. Age. 2021;40(40):38.
2. Al Ghadeer, H., Alabbad, Z., AlShaikh, S., Ahmed, S., Bu-khamseen, A., Alhashem, A., Alhamrani, A., AlGhadeer, M., Alibrahim, D. and Alkishi, B., 2021. Prevalence of Gastroesophageal Reflux Disease and Associated Risk Factors in the Eastern Region, Saudi Arabia. Cureus.
3. Alrashed A, Aljammaz K, Pathan A, Mandili A, Almatrafi S, Almotire M et al. Prevalence and risk factors of gastroesophageal reflux disease among Shaqra University students, Saudi Arabia. Journal of Family Medicine and Primary Care. 2019; 8(2):462.
4. Arivan R, Deepanjali S. Prevalence and risk factors of gastroesophageal reflux disease among undergraduate medical students from a southern Indian medical school: a cross-sectional study. BMC Research Notes. 2018; 11(1).
5. Rasool M, Sarwar R, Arshad M, Imran I, Saeed H, Majeed A et al. Assessing the Frequency and Risk Factors Associated with Gastroesophageal Reflux Disease (GERD) in Southern Punjab, Pakistan. Risk Management and Healthcare Policy. 2021; Volume 14:4619-4625.
6. Alsaleem M, Awadalla N, Shehata S, Saeed Alsamghan A, AlFlan M, Alhumaidi M et al. Prevalence and factors associated with gastroesophageal reflux disease among primary health care attendants at Abha city, southwestern Saudi Arabia. Saudi Pharmaceutical Journal. 2021.
7. Nirwan J, Hasan S, Babar Z, Conway B, Ghori M. Global Prevalence and Risk Factors of Gastro-oesophageal Reflux Disease (GORD): Systematic Review with Meta-analysis. Scientific Reports. 2020; 10(1).
8. Alshaikh O, Alkhonain I, Anazi M, Alahmari A, Alsulami F, Alsharqi A. Assessing the Degree of Gastroesophageal Reflux Disease (GERD) Knowledge Among the Riyadh Population. Cureus. 2021.
9. Halawani H, Banoon S. Prevalence and Determinants of Gastroesophageal Reflux Disease and the Risk Factors among Adult Patients Attending Al-Iskan Primary Health Care Center in Makkah, 2020. Cureus. 2020.
10. Sweis R, Fox M. The global burden of gastro-oesophageal reflux disease: more than just heartburn and regurgitation. The Lancet Gastroenterology & Hepatology. 2020; 5(6):519-521.
11. Manterola C, Grande L, Bustos L, Otzen T. Prevalence of gastroesophageal reflux disease: a population-based cross-sectional study in southern Chile. Gastroenterology Report. 2020; 8(4):286-292.
12. Singendonk M, Goudswaard E, Langendam M, van Wijk M, van Etten-Jamaludin F, Benninga M, et al. Prevalence of Gastroesophageal Reflux Disease Symptoms in Infants and Children. Journal of Pediatric Gastroenterology and Nutrition. 2019 Jun; 68(6):811–7.
13. Yamasaki T, Hemond C, Eisa M, Ganocy S, Fass R. The Changing Epidemiology of Gastroesophageal Reflux Disease: Are Patients Getting Younger? Journal of Neurogastroenterology and Motility. 2018 Oct 1; 24(4):559–69.
14. Zhang H, Gao W, Wang L, Suzhen, Gao Y, Liu B, et al. A population-based study on prevalence and risk factors of gastroesophageal reflux disease in the Tibet Autonomous Region, China. PeerJ. 2019 Feb 28; 7:e6491.
15. Sharma A, Sharma PK, Puri P. Prevalence and the risk factors of gastroesophageal reflux disease in medical students. Medical Journal Armed Forces India. 2018 Jul; 74(3):250–4.
16. Al-Zahrani S, Mohamed M, Mohammed A, Al-Harbi N, Al-Qatari B, Alatwi S, et al. Gastroesophageal reflux disease and heartburn among the general population of Saudi Arabia. International Journal of Medicine in Developing Countries. 2019; 877–84.
17. Revicki DA, Wood M, Maton PN, Sorensen S. The impact of gastroesophageal reflux disease on health-related quality of life. The American Journal of Medicine [Internet]. 1998 Mar 1; 104(3):252–8.
18. Boston. Factor to Consider in Gastroesophageal Reflux Disease Refractory to Proton Pump Inhibitor Therapy: Bile Reflux. Laparoscopic Endoscopic Surgical Science. 2021;
19. Wiklund I. Review of the Quality of Life and Burden of Illness in Gastroesophageal Reflux Disease. Digestive Diseases. 2004; 22(2):108–14.
20. Kuddus M, Aldarwish HA, Tufaif AAA, Al-Tufaif MA, Alharbi AH. Prevalence and Risk Factor of Gastro-esophageal Reflux Disease among Hail Population, Saudi Arabia. Journal of Pharmaceutical Research International. 2021 Mar 27; 59–67.
21. Bielik J, Marusakova E, Matisakova I, Gerlichova K. Quality of Life in Patients with Gastroesophageal Reflux Disease in Slovakia. Value in Health. 2013 Nov; 16(7): A693.