

Frequency of different lifestyle modification measures among patients with GERD based on monthly income

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Abstract

A cross-sectional study was carried out at Shifa International Hospital Islamabad over a period of 6 months, to determine the frequency and compare the different lifestyle modifications among patients with Gastroesophageal Reflux Disease (GERD) of different monthly income groups. Two hundred patients of GERD were enrolled in the study and divided into two groups based on monthly income less than and more than Rs. 30,000 respectively. Data was analyzed using SPSS 21. Descriptive statistics were calculated. Chi-square test was applied keeping p-value <0.05. Mean age was 40±13 years, 82 (41%) males and 118 (59%) females. Walking was undertaken by 32% after meals and 87.5% consumed tea. Significant difference was seen between income groups and higher intake of fried and spicy foods respectively. Thus, effort needs to be made in creating awareness and counseling patients to practice lifestyle modifications to reduce GERD symptoms and stop sole reliance on medications.

Keyword: Gastroesophageal reflux, Dietary habits, Risk factors, Lifestyle.

Introduction

Gastroesophageal reflux disease (GERD) is a chronic reflux disorder. The range of GERD prevalence estimates was 18.1%-27.8% in North America, 8.8%-25.9% in Europe, 2.5%-7.8% in East Asia, 8.7%-33.1% in the Middle East, 11.6% in Australia and 23.0% in South America. Incidence per 1000 person-years was approximately 5 in the overall UK and US populations.¹ A study carried out in Karachi, Pakistan showed that the overall frequency of gastroesophageal reflux symptoms was 24%, among these 58% were males and 42% were females.²

There are multiple risk factors associated with GERD. Studies have documented that patients reported

symptoms most often after consumption of: fatty, fried, sour, or spicy food, fruits and sweets (mostly chocolate). Patients who often had one large meal instead of dinner and supper, also had increase in the occurrence of symptoms.³ A higher BMI is associated with higher degree of endoscopic GERD severity. Findings suggest that obesity and increased BMI are not necessarily the primary cause of GERD but are a risk factor.⁴ Post dinner recumbency was associated with more symptoms comparatively, whereas subjects with post dinner walking had less frequent GERD symptoms. Gastroesophageal reflux symptoms were also experienced maximally when time from bed to dinner was one hour or less as compared to bed time interval of more than three hours.^{5,6} Smoking also proved to be a risk factor for GERD.⁷ Short-term psychological stress also contributes to this disease.⁸

Since there is no baseline data available in Pakistan to determine the lifestyle practices of GERD patients so the purpose of this study was to assess the patients' lifestyle modifications after being diagnosed with GERD. This would help to create awareness among this group of patients regarding the importance of lifestyle measures. The objective of this study was to determine the frequency of different lifestyle modification measures being practiced among patients with GERD and to compare them among different socio-economic strata.

Patients and Methods

A Cross Sectional Study was conducted at Shifa International Hospital in Islamabad Pakistan. It comprised of 200 patients, both male and female, aged between 20-60 years, diagnosed with GERD who were on proton pump inhibitors (PPI) 20 milligram twice daily or 40 milligram once daily as treatment for the past 3 months. Pregnant women and patients who had Diabetes, Hypertension, or Cardiac disease were excluded. The participants (n=200) were divided into two groups based on monthly income. Group 1 (n=100) had income of less than Rs. 30,000 per month while group 2 (n=100) had income of more than Rs. 30,000 per month¹¹ (Figure-1).

The estimated number of study subjects in both group

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was calculated using the WHO sample size calculator keeping confidence level 95%. anticipated population proportion 0.42,⁶ With an absolute precision of 7%, the sample size was determined as 200. Purposive non-probability sampling was done.

The following lifestyle practices were measured according to categories as stated in our questionnaire drinking tea and coffee, eating fried food and how often, eating spicy food containing green chilies/ red chilies, activity after meal, sleep/nap after meals, BMI as obesity is one of the risk factors for GERD, smoking and stress was assessed using perceived stress scale. A short 4 item scale was made from questions 2, 4, 5 and 10 of the Perceived Stress Scale (PSS) 10 item scale.¹⁰

The study protocol was approved by the ethical committee of the Institutional Review Board Shifa Tameer-e-Millat University. Data was collected from Shifa International Hospital (SIH), OPD of medicine and Shifa Foundation Medicine Clinic OPD. Written Informed consent was obtained from all the participants and confidentiality of data was maintained. The study was conducted during a period of 6 months from January to June 2016.

Data was entered using SPSS version 21.0. Descriptive statistics were calculated for both qualitative and quantitative variables.

Mean and standard deviation was determined for quantitative variables as age, and frequency and percentage of Qualitative variables as Gender, BMI, lifestyle practices included activity after meal, drinking tea, fried food, spicy food, smoking, and stress. Chi-square

test was used to compare the two groups keeping p-value less than <0.05 as significant.

Results

Of the total 200 participants, 82 (41%) were males and 118 (59%) females. Mean age was 40±13 years. According to BMI, underweight 10 (5%), normal weight 102 (51%), overweight 63 (31.5%) and obese 25 (12.5%). Activity after meal, sitting 97 (48.5%), lying down 39 (19.5%) and walk 64 (32%). Those drinking tea were 175 (87.5%), and who did not drink tea 25 (12.5%). Out of those who drank tea 139 (69.5%) had less than 3 cups and 37 (18.5%) more than 3 cups daily. Individuals who ate fried food were 119 (59.5%) and those who did not were 81 (40.5%) (Figure-2). It was observed that people who consumed spicy food were 71 (35.5%) and those who did not were 129 (64.5%). Smoking was considered bad for health and there were 30 (15%) smokers and 170 (85%) non-smokers. Stress was measured according to the LIKERT scale¹⁰ Never stressed were 12 (6%), almost never 24 (12%), sometimes 63 (31.5%), fairly often 59 (29.5%) and very often 42 (21%).

Frequency of the lifestyle practices comparing the monthly income groups is shown in the table (Table). Both groups had similar life style practices. There was no significant difference between the lifestyle practices of the two income groups. The only significant difference was seen in the intake of fried food ($p<0.05$) and spicy food ($p<0.05$). Among the two groups the lower income group was found to consume more fried food as compared to the higher income group. Although the overall intake of spicy food in both the groups was generally less, the lower income group relatively had

Table: Comparison of Frequency of the lifestyle practices between the two monthly income groups.

		Monthly income <30,000Rs (n=100)				Monthly income >30,000Rs (n=100)				P-value	
		Yes	No			Yes	No				
Drink tea		88	12			87	13			>0.05	
Fried food intake		71	29			48	52			<0.05	
Spicy food intake		42	58			29	71			<0.05	
Smoking		16	84			14	86			>0.05	
BMI*	Underweight	Normal	Overweight	Obese	Underweight	Normal	Overweight	Obese		>0.05	
	(<17.5)	(17.5-22.99)	(23-27.99)	(>28)	(<17.5)	(17.5-22.99)	(23-27.99)	(>28)			
	4	51	33	12	6	51	30	13			
Activity after meal		Sitting	Lying down	Walk	Sitting	Lying down	Walk			>0.05	
		46	20	34	51	19	30				
Stress	Never	Almost Never	Sometimes	Fairly Often	Very Often	Never	Almost Never	Sometimes	Fairly Often	Very Often	>0.05
	8	13	27	28	24	4	11	36	31	18	

*BMI according to recommended criteria for Asians.

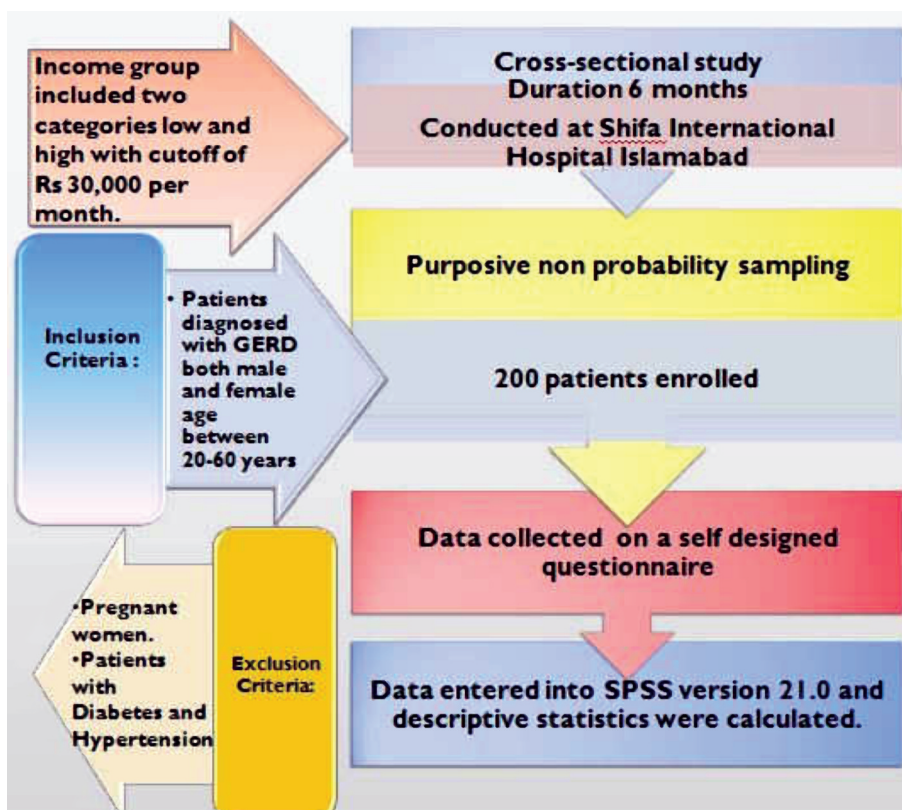


Figure-1: Flow chart showing Methods and Eligibility Criteria.

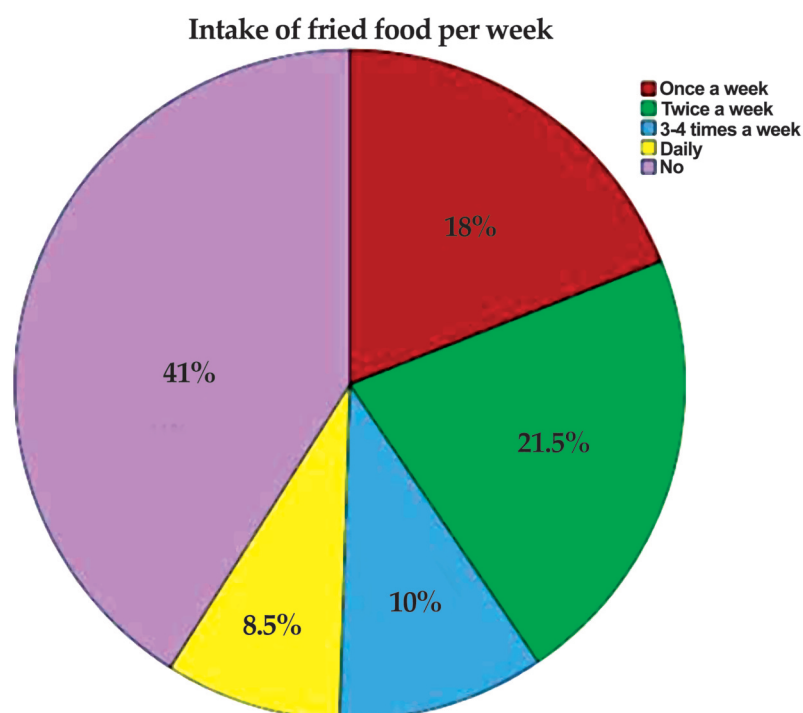


Figure-2: Pie chart showing overall percentage intake of fried food per week.

higher consumption of spicy food. The other risk factors BMI, intake of tea, activity after meal, smoking, and stress were found to be non-significant ($p > 0.05$) among the two groups.

Discussions

GERD is a chronic multifactorial disease. Studies have shown that risk factors which aggravate GERD include advancing age, excessive body mass, lifestyle factors (such as smoking, physical activity), and diet.

The importance of lifestyle modification has been proven. These lifestyle changes included avoiding fatty food, sweet food, carbonated beverages, spicy food, coffee, large meals, alcohol, meals before sleep, clothing that tighten abdomen, and to lose weight, quit smoking and elevate head of bed. The changes in the health-related quality of life scores from baseline, at week 8 were significantly greater in patients who were advised specifically regarding lifestyle

modification at the start of treatment compared with patients who continued lifestyle as advised previously and those who were not advised. Thus, Lifestyle modification may be clinically beneficial in terms of improving quality of life in a segment of Pakistani patients with GERD who are receiving treatment with a Proton Pump Inhibitors.⁹

According to a study done at Department of Medicine Sharif Medical & Dental College, Lahore the prevalence of GERD patients in the urban population was 58% females and 42% males.⁹ The result is in coherence with our study, showing that the female population has higher occurrence of GERD.

A higher BMI was associated with higher degree of severity of GERD which may worsen health related quality of life.⁴ This is in line with our study, where more than 40 percent had a BMI greater than recommended. Previous studies show regular post dinner

walk and > 3 hour dinner-bed time interval is associated with lesser GERD symptoms.⁶ A well known association has already been proven between the severity of typical GERD symptoms and certain diet ($p<0.001$) fatty fried food, spicy food and frequent tea consumption.³ Our study also shows these correlations. Cigarette smoking has been associated with symptomatic GERD, reporting higher rates of reflux symptoms in tobacco smokers compared with nonsmokers.⁵ However, in this study only 15% of the participants were found to be smokers. Various studies show stress may also contribute as a risk factor in the pathogenesis of GERD.⁸ We categorized stress according to the Perceived Stress Scale (PSS) 10 item scale.¹⁰ Our study population showed varying degrees of stress among large proportion of subject, which can be a contributing factor in causing symptoms of GERD.

Study Limitation

In our study, subjects were not stratified according to the age group as lifestyle practices for example physical activity and eating habits may vary with age. This is the limitation of our study.

Future Prospect

There are no guidelines or recommendations available for the modification of lifestyle practices of GERD patients. Further work needs to be done in creating guideline and awareness so that the patients can more readily adopt healthy lifestyle practices that can improve their quality of life.

Conclusion

There was no significant difference between the lifestyle practices of the two income group except the intake of fried food and spicy food. The overall study population has poor lifestyle practices. Sedentary lifestyle still persists among GERD patients, effort needs to be made on creating awareness regarding activity after meal, diet and avoidance of tea as it is an important aggravating risk factor. Hence, emphasis is required on counseling

patients to practice lifestyle modifications in order to reduce GERD symptoms, stop sole reliance on medications only and lead a better quality of life.

Disclaimer: None.

Conflict of Interest: None.

Source of Funding: None.

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