ABSTRACT

Objective: In gastroesophageal reflux disease gastric contents caused erosive action in esophagus as well as in upper respiratory chamber which is a very common and painful medical complication in our population. Therefore investigation of GERD related risk factors are very important for health awareness.

Study Design: A comparative clinical study.

Population Sampling: In this study 2000 male and female individuals were selected with gastroesophageal reflux diseases from urban, suburban areas and rural areas.

Sample Size: 2000 individuals collectively participated in present study, including 900 from urban areas, 853 from suburban areas, and 1010 from rural areas.

Place and Duration: Current study was conducted in Department of Biochemistry Lahore Medical & Dental College Lahore, Indus Medical College Tando Muhammad khan Sindh and Institute of molecular Biology and Biotechnology (IMBB), The University of Lahore, Lahore Pakistan from February 2022 to July 2022.

Methodology: In current study total 2000 individuals were selected and their interviewee conducted for the completion of questionnaire. The questionnaire was created based on lifestyle factors such as obesity, smoking, drinking, gastroesophageal reflux disease (GERD) frequency and severity in previous years, and history of respiratory and laryngopharyngeal disorders in the previous year.

Results: The prevalence of heartburn, Regurgitation, Epigastric pain, Dyspepsia, Pharyngitis, Laryngitis, GRED Frequency, Smoking, Drinking alcohol and BMI among male and female individuals has significant (P > 0.05) correlation of Pharyngitis and Laryngitis with GRED Frequency of individuals.

Practical implication: Through current study health awareness can be delivered in the local population.

Conclusion: In conclusion, gastroesophageal reflux disease is a substantial public health issue that affects a large portion of the adult population. The pathophysiology and etiology of gastroesophageal reflux disease are likely linked to a number of laryngopharyngeal, respiratory illnesses.

Keywords: Esophagus, Gastroesophageal reflux diseases, Heartburn, Regurgitation, and Retrosternal pain.
are likely linked to a number of laryngopharyngeal, respiratory illnesses.

Research Gap: Gastroesophageal reflux diseases are a broad medical complications such as respiratory illnesses, heartburn, Regurgitation, Epigastric pain, Dyspepsia which in this study collectively not considered as biomarkers in detail.

Rationale of Study: The aims and objectives of current study was to identify the consequences of gastric contents in esophagus as well as in upper respiratory tract where it caused erosive action.

MATERIALS AND METHODS

Research Design: This was a comparative clinical study on questionnaire based analysis.

Population Sampling: In this study 2000 male and female individuals were selected with gastroesophageal reflex diseases from urban, suburban areas and rural areas.

Sample Size: 2000 individuals collectively participated in present study, including 900 from urban areas, 853 from suburban areas, and 1010 from rural areas.

Sample Collection Method: Subjects: Finally, 2000 participants participated in this study, including 900 from urban areas, 853 from suburban areas, and 1010 from rural areas.

Questionnaire: The questionnaire was created based on lifestyle factors such as obesity, smoking, drinking, gastroesophageal reflux disease (GERD) frequency and severity in previous years, and history of respiratory and laryngopharyngeal disorders in the previous year.

Interviewee: Total 2000 individuals were selected and their interviewee conducted for the completion of questionnaire. Prior to the real investigation, a pilot study was carried out among 100 randomly chosen outpatients who visited our gastroenterology clinic in order to assess the suitability of the questionnaire and acquaint the interviewees with the survey's methodology and criteria. The issues that the interviewees ran into during the pilot research were examined, and the appropriate fixes were given.

Design of the survey and response rate: The same doctor reviewed and preserved the completed questionnaires. The absent subjects were noted, and two follow-up interviews were scheduled twice a week. 2000 participants in total were successfully interviewed over the course of 4 months, yielding a 91.8% response rate. Regarding age and gender, there was no difference between responders and non-responders (P > 0.05), and the non-respondent’s varied little among regions (P > 0.05).

Exclusion and inclusion criteria: Upper respiratory illnesses, functional dyspepsia (FD), irritable bowel syndrome (IBS), symptoms of GERD, and certain potential risk factors were all identified in face-to-face and locally focused investigation, randomly by considering samples of 2000 residents between the ages of 18 and 70 by employing a standardized questionnaire in local population of Pakistan. Some identified medical complications were not considered in the results of this study while some parameters which are not directly interrelated in the present study are considered exclusively and inclusively.

Bio-Statistical analysis of raw data: Collected raw data was represented bio-statistically with the application of SPSS version 2021 in which Mean Standard Deviation considered significant (P<0.05) changes of each regression.

RESULTS

Epigastric pain can manifest as a single, isolated sensation, as one of several symptoms that also include heartburn, or in conjunction with other symptoms like bloating or early satiety. Epigastric discomfort is a common complaint among patients, which has prompted the creation of empirical tactics. Indigestion is also referred to as dyspepsia. People with persistent indigestion frequently describe experiencing bloating, excessive fullness, and stomach pain both during and after meals. Heartburn, frequent burping, and acid reflux are some more common symptoms. While testing reveals that only one-third of those with these symptoms have peptic ulcer disease, the other two-thirds have functional dyspepsia.

A sore throat can result from acid reflux, although heartburn is the most typical trusted source symptom. A person could experience a lump in their throat along with a sore throat when acid reflux is the cause. Acid reflux sensations in the head and neck might be deceptive. Doctors can misidentify chronic tonsillitis as a persistent sore throat brought on by acid reflux. The findings present study are correlated to the concluded results of different studies by number of researchers.

The prevalence of heartburn, Regurgitation, Epigastric pain, Dyspepsia, Pharyngitis, Laryngitis, GRED Frequency, Smoking, Drinking alcohol and BMI among male and female individuals were (95.81±0.02; 65.44±0.01; 7.56±0.01; 88.51±0.03; 35.62±0.02; 35.61±0.01; 30.83±0.04; 90.25±0.02; 15.61±0.01; 45.21±0.02) and (96.51±0.02; 66.61±0.03; 78.71±0.01; 90.41±0.02; 40.91±0.02; 40.71±0.01; 36.21±0.02; 16.24±0.02; 06.71±0.04; 56.11±0.01) respectively shown in Table-2. Whereas active parameters of male and female were individual quantity regarding Individual quantity (n), age, spicy food, body activities levels, over intake, coffee, tea and extra sweet intake (1170,18,70,27%,67%,72%,89%,47%) and (830,18,70,65%,53%,49%,75%,93%,33%) were seen comparatively in this study represented in table-2.

Table-1: Active parameters of male and female

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Male Responders</th>
<th>Female Responders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual quantity (n)</td>
<td>1170</td>
<td>830</td>
</tr>
<tr>
<td>Age</td>
<td>18-70</td>
<td>18-70</td>
</tr>
<tr>
<td>Spicy food</td>
<td>70%</td>
<td>65%</td>
</tr>
<tr>
<td>Body activities levels</td>
<td>27%</td>
<td>53%</td>
</tr>
<tr>
<td>Over intake</td>
<td>67%</td>
<td>49%</td>
</tr>
<tr>
<td>Coffee</td>
<td>72%</td>
<td>75%</td>
</tr>
<tr>
<td>Tea</td>
<td>89%</td>
<td>93%</td>
</tr>
<tr>
<td>Extra sweet intake</td>
<td>47%</td>
<td>33%</td>
</tr>
</tbody>
</table>

The prevalence of heartburn, Regurgitation, Epigastric pain, Dyspepsia, Pharyngitis, Laryngitis, GRED Frequency, Smoking, Drinking alcohol and BMI among male and female individuals were (95.81±0.02; 65.44±0.01; 7.56±0.01; 88.51±0.03; 35.62±0.02; 35.61±0.01; 30.83±0.04; 90.25±0.02; 15.61±0.01; 45.21±0.02) and (96.51±0.02; 66.61±0.03; 78.71±0.01; 90.41±0.02; 40.91±0.02; 40.71±0.01; 36.21±0.02; 16.24±0.02; 06.71±0.04; 56.11±0.01) respectively shown in Table-2. Whereas active parameters of male and female were individual quantity regarding Individual quantity (n), age, spicy food, body activities levels, over intake, coffee, tea and extra sweet intake (1170,18,70,70,27%,67%,72%,89%,47%) and (830,18,70,65%,53%,49%,75%,93%,33%) were seen comparatively in this study represented in table-2.

Table-2: percentage of major indications of gastroesophageal reflux disease Among male and female

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Male (Mean ± SD)</th>
<th>Female (Mean ± SD)</th>
<th>Ps (P&lt;0.05)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heartburn</td>
<td>95.81±0.02</td>
<td>96.51±0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Regurgitation</td>
<td>75.61±0.01</td>
<td>78.71±0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Epigastric pain</td>
<td>65.44±0.01</td>
<td>66.61±0.03</td>
<td>0.03</td>
</tr>
<tr>
<td>Dyspepsia</td>
<td>88.51±0.03</td>
<td>90.41±0.02</td>
<td>0.01</td>
</tr>
<tr>
<td>Pharyngitis</td>
<td>35.62±0.02</td>
<td>40.91±0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Laryngitis</td>
<td>35.61±0.01</td>
<td>40.71±0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>GRED Frequency</td>
<td>30.83±0.04</td>
<td>36.21±0.02</td>
<td>0.04</td>
</tr>
<tr>
<td>Smoking</td>
<td>90.25±0.02</td>
<td>16.24±0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Drinking alcohol</td>
<td>15.61±0.01</td>
<td>06.71±0.04</td>
<td>0.03</td>
</tr>
<tr>
<td>BMI</td>
<td>45.21±0.02</td>
<td>56.11±0.01</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Table-3: percentage Association between gastroesophageal reflux disease and laryngopharyngeal illness

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Male (Mean ± SD)</th>
<th>Female (Mean ± SD)</th>
<th>Ps (P&lt;0.05)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRED Frequency</td>
<td>30.83±0.04</td>
<td>36.21±0.02</td>
<td>0.04</td>
</tr>
<tr>
<td>Pharyngitis</td>
<td>35.62±0.02</td>
<td>40.91±0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Laryngitis</td>
<td>35.61±0.01</td>
<td>40.71±0.01</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Between males and females there was no bio-statistically significant (P=0.05) difference in the prevalence of GERT seen in comparative analysis. In table-3 a significant (P<0.05) percentage.

Correlation between percentage association of gastroesophageal reflex disease and laryngopharyngeal illness showed in table-3. The findings of this study were indicated a
directly proportional significant (P>0.05) correlation of Pharyngitis and Laryngitis with GReD Frequency of individuals.

DISCUSSION
Population-based research is ideal for examining the epidemiology of gastroesophageal reflux disease, a widespread condition in society7,11,14. Without additional diagnostic testing, the diagnosis might be made only on the patient’s specific heartburn and acid regurgitation symptoms. In a population-based research of GReD, the methodology using a self-reported questionnaire has therefore gained popularity. However, this type of research may be constrained by the varying levels of understanding of the definitions by the respondents as well as by the very low response rates13,17.

According to a community-based survey, 1.6% of Singaporeans had GReD, which was characterized as experiencing heartburn and/or acid regurgitation at least once per month18,19. Even if the methodology and terminology utilized in these research make them comparable, the different GReD prevalence may indicate that these groups genuinely have diverse GReD prevalence rates12. These variations were likely brought about by genetic, environmental, nutritional, and health-related variables9. These characteristics in our analysis were more likely to account for regional variations in the frequency of SGER. In laboratory settings, it has been demonstrated that eating habits and the consumption of particular foods, such as fat, chocolate, mints, coffee, onions, citrus fruit, and tomato products, are linked to transient GER or relaxed LES14.

Our population-based study showed that high dietary intake, meals that make you sweat, and coffee were only occasionally linked to SGER, but there was no correlation between SGER and dietary fat, tea, or spicy foods17. Our findings somewhat agreed with other findings by different researchers that GER symptoms and the risk of esophageal or stomach cancer were not related to dietary variables, according to a population-based case-control research conducted across the country18,19. In conclusion, GReD is a substantial public health issue that affects a large portion of the adult population. The pathophysiology and etiology of GReD are likely linked to a number of laryngopharyngeal, respiratory, and other illnesses or symptoms19,20.

CONCLUSION
In conclusion, gastroesophageal reflux disease is a substantial public health issue that affects a large portion of the adult population. The pathophysiology and etiology of gastroesophageal reflux disease are likely linked to a number of laryngopharyngeal, respiratory illnesses.

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Author contribution: We are very thankful to all authors individually for their creative hardworking results and their determination for making the current study possible.

REFERENCES