



ROLE OF REFLUX SYMPTOM INDEX IN ASSESSING SEVERITY OF GASTROESOPHAGEAL REFLUX

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ABSTRACT **Background:** Gastroesophageal reflux (GER) is the condition where repeated backflow of gastric contents from the stomach to the esophagus happens. **Methods:** An observational study was conducted in the Department of ENT, Sri Siddhartha Medical College & Hospital, Tumkur for a period of 10 months, total of 96 patients of both genders who were diagnosed to have predominant gastro esophageal reflux symptoms were included in the study. The study group was divided in the range as follows: Young Adults: 18-35 Years, Middle Aged Adults: 35- 50 Years, Geriatrics: 50 Years and above. The candidates were given RSI questionnaire and were asked to self administer the questionnaire on themselves and the scores were calculated by the speech language pathologist **Results:** The distribution is noted across all the severity categories in the middle aged adults most significantly when compared to geriatrics and young adults. Women showed a distributed severity across all classified categories based on the RSI score. Men exhibited a scattered result among moderate, moderately severe and severe classifications only. **Conclusions:** Our study reported that this easily administered tool was highly reproducible, with a good construct based and criterion-based validity. RSI when administered can help identify symptoms and it should be extensively used in patients diagnosed with GERD/ LPR to monitor the need for associated symptom based rehabilitation

KEYWORDS : Gastroesophageal reflux, Reflux symptom index, Laryngopharyngeal reflux

INTRODUCTION

Gastroesophageal reflux (GER) refers to the condition where gastric contents flow back into the esophagus repeatedly. In Gastroesophageal reflux disease (GERD), complications can occur as esophageal or extraesophageal. These issues may occur due to the continuous reflux or direct inflammation caused by the refluxate. The reflux is typically due to a weakening of the lower esophageal sphincter (LES), which serves as a valve between the esophagus and stomach. Classic symptoms such as heartburn and acid regurgitation are often key factors in diagnosing GERD. In addition to these, individuals may also experience swallowing difficulties, breathing issues, voice problems, and persistent cough. While many patients may self-diagnose, self-medicate, and avoid seeking medical attention, others may develop more severe forms of the disease, leading to esophageal damage ranging from erosive to ulcerative esophagitis. Various questionnaires have been developed to assess individuals with GERD and their quality of life, which can help monitor the severity of the disease. Some of these questionnaires specifically address voice and swallowing-related quality of life for GERD patients.

The Reflux Symptom Index (RSI) is one such self-assessment tool designed to evaluate the quality of life in individuals with GERD. This nine-item, self-rated questionnaire is used to monitor the severity of GERD and its impact on daily functioning. Completing the RSI takes less than one minute. Each item is scored on a scale from 0 (no problem) to 5 (severe problem), with a maximum score of 45. The lack of studies focusing on how GERD affects a person's quality of life is the primary reason for the need for such research. Furthermore, there is insufficient documentation regarding the role of the Reflux Severity Index in addressing GERD-related voice and swallowing disorders.

Aim:

To assess severity of gastro esophageal reflux using reflux severity index

Methodology

Source Of Data:

The present study was conducted in 96 patients at the SSMC Tumkur for a period of 10 months(2023–2024) who were diagnosed with GERD. The study group was divided in the range as follows:

Young Adults: 18-35 Years

Middle Aged Adults: 35- 50 Years

Geriatrics: 50 Years And Above.

Study Design:

Observational Questionnaire Based Study

Sample Size:

Sampling Formula : $Z_{\alpha/2}P(1-P)/e^2$

$(Z_{\alpha/2} \rho(1-\rho))/e^2$

$Z_{\alpha} = 1.96$ at 95% C.I

$\rho = 0.50$ (50%)

$e =$ allowable error

$e = 10\%$, $n = 96$

Sample Size = 96 individuals diagnosed with GERD

Study Period:

10 months (Nov 2023-Sep 2024)

Inclusion Criteria:

Participants will be diagnosed with pre dominant GERD symptoms by a specialized Gastroenterologist and Otorhinolaryngologist and then only will be included for the study. Individuals included will have no associated swallowing problems and will not be under any medications for any other associated condition whatsoever. Participants have to be literate in order to self rate the questionnaire

Method Of Collection Of Data:

An informed consent was taken from the participants of the study. The statistical analysis was performed using chi-square test. The study protocol was Approved By The Ethical Committee Of Sri Siddhartha Medical College And Hospital, Tumkur.

1. Patient will be instructed to be seated comfortably.
2. Demographic data will be obtained accordingly.
3. The nine point self rated questionnaire will be given to the client and the scores will be calculated by the speech language pathologist.
4. Analysis of the data.
5. Tabulation of the data

RESULTS

Figure 1. The gender-based distribution of RSI severity for the young adult category shows that all females reported only mild scores on the

RSI. In contrast, males displayed a mix of moderately severe and severe scores, with results spread across the moderate classification. This suggests that voice symptoms associated with GERD are present in young adults, with females being mildly affected and males experiencing more significant symptoms. The reason for this pattern may be linked to factors such as irregular eating habits, stress related to education, and disrupted sleep cycles due to unpredictable study routines, all of which could contribute to GERD episodes.

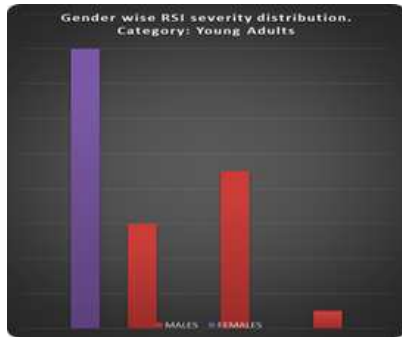


Figure 1: Depicts the gender wise RSI severity distribution for the young adults category

Figure 2: The gender-based distribution of RSI severity for the middle-aged category shows that females reported a range of severity across all classified categories based on the RSI score. In contrast, males exhibited scattered results within the moderate, moderately severe, and severe classifications. This suggests that voice symptoms related to GERD in middle-aged adults tend to be more severe, which may be linked to factors such as mid-life work-related stress and poor eating and hydration habits.

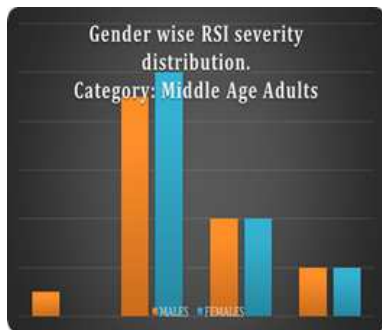


Figure 2: Depicts the gender wise RSI severity distribution for the middle age category

Figure 3: Depicts the gender wise RSI severity distribution for the geriatrics category. All females and males reported only mild scores on the RSI. This result noted indicates that voice symptoms associated with GERD are observed to be relatively mild in old aged individuals. The reason for this result could be suggestive of well timed diets, healthier eating options, reduced stress levels, longer and well timed sleep cycles.

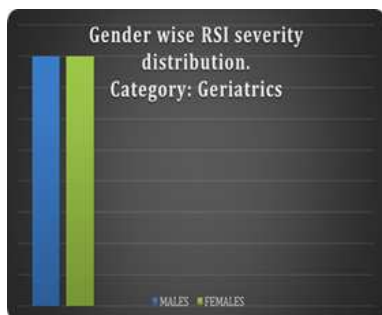


Figure 3: Depicts the gender wise RSI severity distribution for the geriatrics category

Figure 4: The RSI severity distribution across age groups highlights the variation in scores across different categories. The overall results show how the severity of RSI scores is distributed across the various age ranges included in the study. Dietary modifications are found to

play a crucial role in influencing GERD episodes, with other contributing factors such as irregular meal times, stress, and inadequate hydration also playing a part in the recurrence of GERD. Voice problems are common symptoms that arise after multiple GERD episodes. Notably, the distribution of RSI severity is most pronounced in middle-aged adults, with a significant presence of symptoms compared to both geriatric and young adult groups.

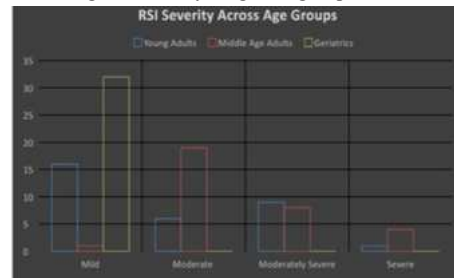


Figure 4: Depicts the RSI severity across age groups and it's distribution across categories

DISCUSSION

Our study focuses on measuring the severity of gastroesophageal reflux (GERD) using reflux symptom index which is a nine point rating scale. This reflux happens due to the weakening of the lower esophageal sphincter (LES) a valve for the esophagus and stomach hence the reflux of the gastric contents of the stomach to esophagus occur. Domination of classic symptoms such as heart burn and acid regurgitation contribute to the diagnosis of GERD. Swallowing difficulties, breathing difficulties, voice problems and annoying cough have been reported in such individuals. The RSI scores assess and depends on the severity of these symptoms. Our study included 96 individuals who were diagnosed having GERD and RSI was administered on them. Participants were divided in 3 age ranges. Individuals who falls under 18 to 35 years of age were put under young adults, middle aged adults were considered from the age of 36 to 50 years and anyone above 50 was considered in the group of geriatrics. Within each groups female and male population were considered separately. The individuals were given RSI and were asked to self administer the questionnaire on themselves. Maximum score obtained was 45. Scores >13 was considered as abnormal. Scores from 14 to 20, 21 to 27, 28 to 35 and 36 to 45 was considered as mild, moderate, moderately severe and severe respectively.

CONCLUSION

RSI is a self-administered nine-item tool used for the assessment of the initial symptoms and the efficacy of treatment of LPR/ GERD patients. Our study reported that this easily administered tool was highly reproducible, with a good construct based and criterion-based validity. It was not only able to account for the severity in tandem with the severity of GERD diagnosed but was also significant in highlighting the GERD symptoms of prime importance. In the context of a non systematized utilization of pH monitoring reliable clinical tools need to be developed for the diagnosis and follow-up of GERD/LPR. As a result, RSI when administered can help identify symptoms and it should be extensively used in patients diagnosed with GERD/ LPR to monitor the need for associated symptom based rehabilitation. Future studies can focus on developing the Reflux Severity Index in the regional languages to facilitate better treatment outcomes in patients with GERD/LPR who do not follow English as a medium of instructions

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