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Assessment of Severity of Gastroesophageal Reflux Using Reflux Symptom Index

Dr Blessy B Prabha[1], Jacqueline B Fernandes[2], Dr Savita Lasrado[3]

[1]PG Resident, Department of Otorhinolaryngology, Father Muller Medical College Hospital, Kankanady, Mangalore, Karnataka, India

[2]Assistant Professor, Department of Audiology & Speech Language Pathology, Father Muller College of Speech and Hearing (Mangalore University), Mangalore Karnataka, India
ISHA Lifetime Membership No: L- 13092206

[3]Assistant Professor, Department of Otorhinolaryngology, Father Muller Medical College Hospital, Kankanady, Mangalore, Karnataka, India

Abstract: ***Introduction: The reflux of gastric contents from the stomach to the esophagus is referred to as gastroesophageal reflux (GER). This reflux happens due to the weakening of the lower esophageal sphincter (LES) a valve for the esophagus and stomach. Domination of classic symptoms such as heart burn and acid regurgitation contribute to the diagnosis of GERD.Several questionnaires have been devised to screen individuals with GERD and their quality of life. Materials and methods: Reflux Symptom Index is one such self assessment tool that can be utilized in accounting for the quality of life in individuals with GERD. It is a nine item self rated questionnaire used in monitoring the severity of gastro esophageal reflux (GERD) and its effects of day to day functioning.. Its an Observational Questionnaire Based Study on 96 individuals diagnosed with GERD,done by Non random convenient sampling. Results: 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. 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.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: GERD, LPR, RSI, VOICE DISORDERS, LES

1. Introduction

The reflux of gastric contents from the stomach to the esophagus is referred to as gastroesophageal reflux (GER). Esophageal or extra esophageal complications can be evident in Gastro esophageal reflux disease (GERD).As a consequence of the repetitive process or direct inflammation due to a reflux may result in these complications.

This reflux happens due to the weakening of the lower esophageal sphincter (LES) a valve for the esophagus and stomach. 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. While many patients self-diagnose, self-treat and do not seek medical attention for their symptoms, others suffer from more severe disease with esophageal damage ranging from erosive to ulcerative esophagitis.

Several questionnaires have been devised to screen individuals with GERD and their quality of life. They can be used in order to keep a check on the severity of GERD. A few of these focus the voice and swallowing related quality of life of the individuals with GERD.

Reflux Symptom Index is one such self assessment tool that can be utilized in accounting for the quality of life in individuals with GERD. It is a nine item self rated questionnaire used in monitoring the severity of gastro esophageal reflux (GERD) and its effects of day to day functioning. RSI can be completed in less than one minute. The scale for each individual item ranges from 0(no problem) to 5(severe problem), with a maximum score of 45.

A dearth of studies in noting how the quality of life of an individual diagnosed with GERD is disrupted is the main reason for the need of a study of this kind. Moreover, there has been no strong documentation of Reflux Severity index and its contributions in accounting for GERD related voice and swallowing disorders.

2. Methodology

Study design:
Observational Questionnaire Based Study.

Sampling size:
96 individuals diagnosed with GERD

Sampling formula: $Z\alpha^2P(1-P)\ e^2$

$$\frac{z_\alpha^2 \rho(1-\rho)}{e^2}$$

$Z_{\alpha=}$ 1.96 at 95% C.I
ρ =0.50 (50%)
e =allowable error
e = 10% , n = 96

Statistical Analysis
Type of sampling: Non random convenient sampling.
Study location: Father Muller Medical College Hospital
Study duration: September 2017 –July 2018

Participants:
Participants will be divided in the age range as follows
Young Adults: 18 – 35 Years
Middle Aged Adults: 35 - 50 Years
Geriatrics: 50 Years And Above.

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.

Instrumentation:
Reflux Symptom Index Questionnaire.

Procedure:
An informed consent will be taken from the participants of the study. Ethical clearance was obtained from the institutional ethical committee prior to the initiation of the study.
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.

3. Results

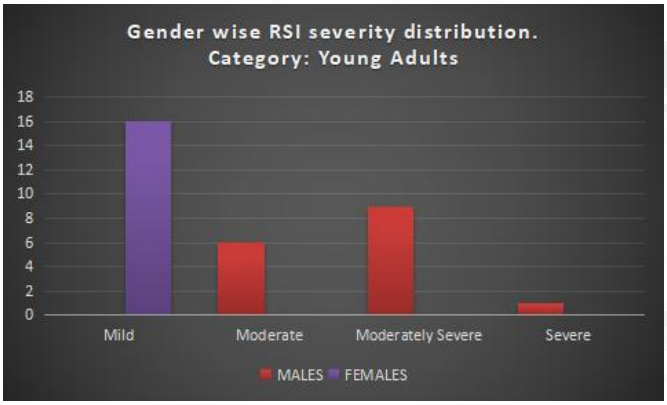

Figure 1: Depicts the gender wise RSI severity distribution for the young adults category

All females reported only mild scores on the RSI. Males exhibited a scattered result among moderate, moderately severe and severe classifications.

This result noted indicated that voice symptoms associated with GERD are observed in **young adults** wherein females are mildly affected while the males seem to be more affected. The reason for this result could be suggestive of rather oddly timed diet patterns, education related stress that tend to cause GERD episodes, improper sleep cycles affected due to erratic study routines.

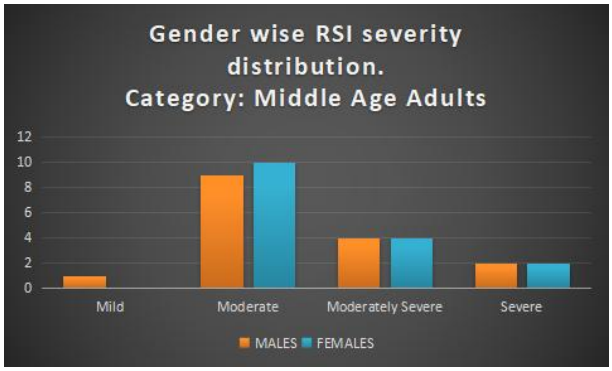

Figure 2: Depicts the gender wise RSI severity distribution for middle age category

Females reported a distributed severity across all classified categories base on the RSI score. Males exhibited a scattered result among moderate, moderately severe and severe classifications only.

This result noted indicated that voice symptoms associated with GERD that are observed in **middle aged adults** are mainly in the increasing severity category indicative of mid life work related stress and poor eating and hydration habits.

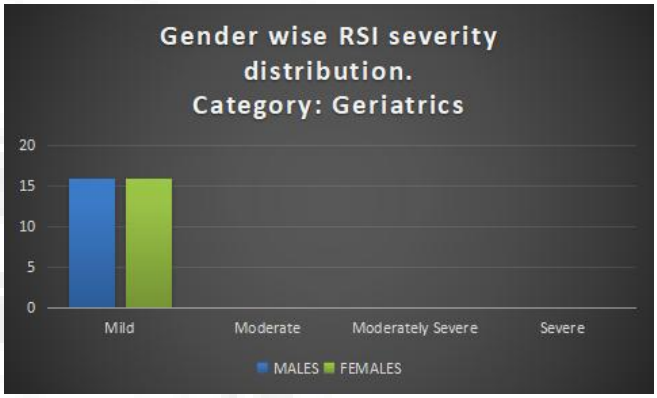

Figure 3: Depicts the gender wise RSI severity distribution for the old age category

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.

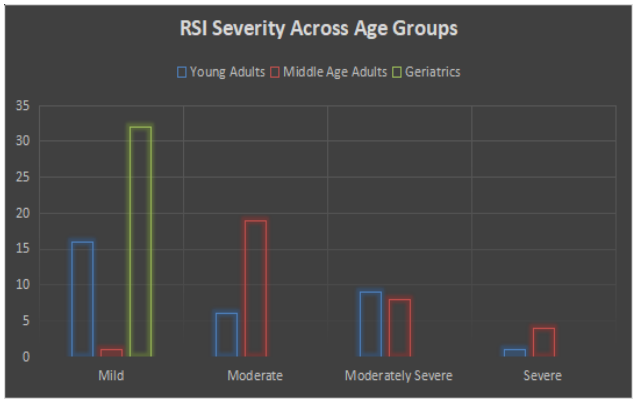

Figure 4: Depicts the RSI severity across age groups and it's distribution across categories.

The **overall result noted indicates the distribution of RSI score severity across the age ranges taken for the study**. Dietary modifications are noted to play a vital role in influencing episodes of GERD. Other factors that contribute to the repeated occurrence of GERD include improper meal times, stress and poor hydration. Voice problems are associated symptomatic changes that occur post multiple GERD episodes. The distribution is noted across all the severity categories in the middle aged adults most significantly when compared to geriatrics and young adults.

4. 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 instruction. Moreover, developing in different languages will help the patient to account for their symptoms with more clarity.

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