



Journal Homepage: -[www.journalijar.com](http://www.journalijar.com)

## INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/18371

DOI URL: <http://dx.doi.org/10.21474/IJAR01/18371>



### RESEARCH ARTICLE

#### QUALITY OF LIFE IN PATIENTS WITH STABLE CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN A TERTIARY CARE CENTRE- A HOSPITAL-BASED STUDY

Dr. Padmini C., Dr. Binoo Divakar, Dr. Manoj D.K and Dr. Rajani M.

#### Manuscript Info

##### Manuscript History

Received: 05 January 2024

Final Accepted: 09 February 2024

Published: March 2024

##### Key words:-

COPD, ST George Questionnaire,  
Spirometry

#### Abstract

**Background:** Chronic obstructive pulmonary disease (COPD) is a major and increasing global health problem. Analyzing the mental, physical and social aspects of this disease is necessary to improve the quality of life (QOL) of COPD patients.

**Methodology:** This study was carried out in 100 stable COPD patients. Detailed history, general and systemic examination were done. Routine blood investigations, Chest x-ray and spirometry were done. Patients were asked to complete St. George's Respiratory Questionnaire for COPD patients (SGRQ-C) (simple Malayalam version) as honestly as they can. Statistical analysis: Descriptive statistical tools like mean, standard deviation, median was used.

**Result:** A total of 100 COPD patients with a mean age of 66.91 years and a standard deviation of 7.93 years were included in the study in which 95% were males. Study showed significant difference between the mild and moderate groups ( $p < 0.001$ ), mild and severe groups ( $p < 0.001$ ), mild and very severe groups ( $p < 0.001$ ). No significant difference between moderate and severe groups, moderate and very severe groups and between severe and very severe groups was found. So we can conclude that the median SGRQ score in the mild COPD group was significantly less compared to all the other groups and that there was no significant difference between the other groups.

Copy Right, IJAR, 2024., All rights reserved.

#### Introduction:-

Chronic obstructive pulmonary disease (COPD) is a major and increasing global health problem <sup>[1]</sup>. The Global Initiative for Obstructive Lung Disease (GOLD) describes Chronic Obstructive Pulmonary Disease (COPD) as a heterogeneous lung condition characterized by chronic respiratory symptoms (dyspnea, cough, sputum production and/or exacerbations) due to abnormalities of the airways (bronchitis, bronchiolitis) and/or alveoli (emphysema) that cause persistent, often progressive, airflow obstruction. <sup>[2]</sup>

COPD is one of the major preventable and one of the leading non-communicable causes of death globally, as well as in India <sup>[3-5]</sup> COPD is also a major cause of chronic morbidity. The risk factors for COPD in India are air pollution, followed by tobacco use and occupational exposure <sup>[4]</sup>.

The Global Initiative for Chronic Obstructive Lung Disease (GOLD) guidelines have identified the goals of treatment for patients with COPD, these include the patients' goals of improved exercise tolerance and emotional

function (health-related quality of life) and also important clinical goals such as prevention of disease progression and minimization of symptoms<sup>[6]</sup>

Analyzing the mental, physical and social aspects of this disease is necessary to improve the quality of life (QOL) of COPD patients. Health-related quality of life (HRQOL) is a unique that is different from physiological measures or survival and has domains that are related to physical, mental, emotional and social functioning. The St. George's Respiratory Questionnaire (SGRQ) has been used widely and extensively as an instrument for assessing HRQOL in patients with respiratory ailments<sup>[7]</sup>. The St. George's Respiratory Questionnaire C (SGRQ-C) is a shorter version derived from the original version of the SGRQ which has been explicitly designed to measure health impairment in patients with COPD<sup>[8]</sup>

COPD impairs quality of life, by preventing people with the condition from socializing and enjoying their hobbies. It also makes many feel frustrated and angry about not being able to do the things they want to<sup>[9]</sup>. Quality of life (QOL) is an important domain for measuring the impact of chronic disease. Both general and disease-specific instruments have been used to measure QOL in patients with COPD<sup>[10,11]</sup>. Among the disease specific questionnaires frequently used to evaluate the QOL of pulmonary patients is St. George's Respiratory Questionnaire (SGRQ), and the new version of the SGRQ, the SGRQ-C specific only to COPD<sup>[12]</sup>. Keeping in mind the high burden of COPD and the impact the disease can have on the QOL of an individual suffering from it, this study was aimed to study quality of life in COPD patients and to examine its relationship with the severity of the disease.

### Methodology:-

This study was carried out in 100 stable COPD patients, attending the outpatient department of Respiratory medicine, Academy of medical science, Pariyaram (now GOVT MEDICAL COLLEGE, Kannur). Study duration was 1 year (January 1<sup>st</sup> 2016 to December 31<sup>st</sup> 2016). After taking the written informed consent, diagnosed stable COPD patients were included in the study. Patients with significant cardiac illness, any psychiatric illness, neuromuscular disease or skeletal deformities, hemodynamic instability, patients in acute exacerbation & other lung diseases were excluded. Detailed history, general and systemic examination were done. Routine blood investigations, Chest x-ray and spirometry were done. Patients were asked to complete St. George's Respiratory Questionnaire for COPD patients (SGRQ-C) (simple Malayalam version) as honestly as they can.

Statistical analysis: Descriptive statistical tools like mean, standard deviation, median was used. To see if there is significant difference in the median scores among the different grades of COPD, we performed Kruskal Wallis test and the post hoc pairwise test to see which groups were significantly different.

### Result:-

A total of 100 COPD patients were included in the study in which 95% were males.

Characteristics of the studied population: Age – ranged from 50 to 85 years, with a mean of 66.91 years and a standard deviation of 7.93 years. Sex – 95% of the study population were males.

**Table 1:-** Severity of COPD by Spirometry.

severity of COPD	Frequency	Percent
mild	20	20
moderate	22	22
severe	18	18
very severe	40	40
Total	100	100

**Table 2:-** SGRQ-C scores for different grades of COPD:

severity of COPD		SGRQ-C score (symptoms)	SGRQ-C score (activity)	SGRQ-C score (impact)	SGRQ-C score (total)
mild	Mean	36.97	34.57	24.57	28.67
	Std. Deviation	20.93	23.27	16.47	14.66

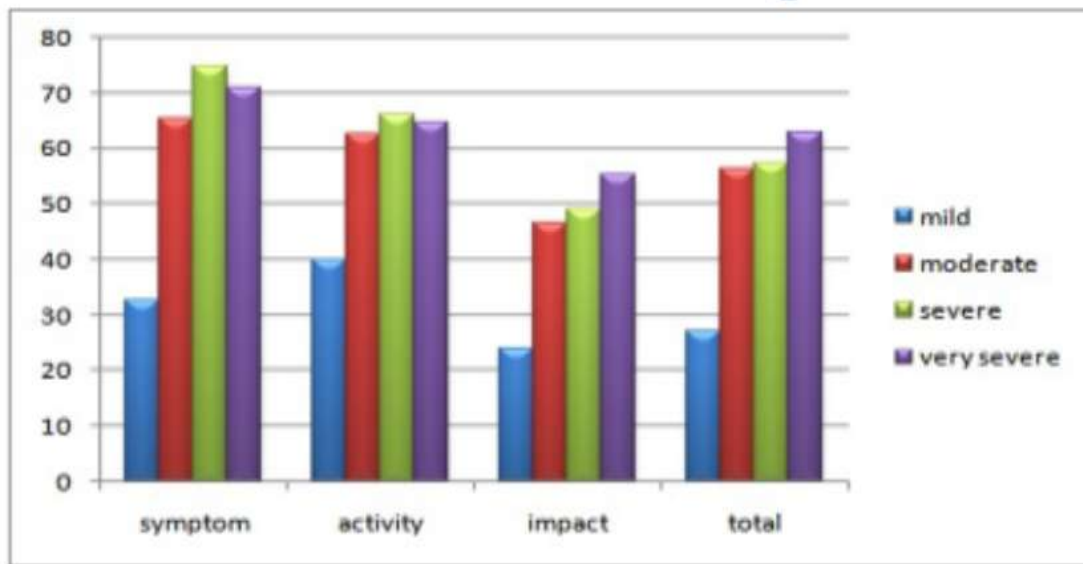
	Median	32.76	39.91	23.75	27.11
moderate	Mean	64.80	63.25	49.50	56.53
	Std. Deviation	14.19	19.12	18.24	14.61
	Median	65.37	62.60	46.46	56.33
severe	Mean	73.32	62.23	52.16	59.62
	Std. Deviation	13.39	17.59	15.18	11.61
	Median	74.55	66.08	49.04	57.17
very severe	Mean	71.41	65.52	58.61	63.27
	Std. Deviation	14.25	20.68	21.50	14.71
	Median	70.77	64.66	55.09	63.50

The Kruskal Wallis test gave the p value as <0.001, for all the 4 domains. So, there is a significant difference in the SGRQ scores in all 4 grades of COPD. To see where the actual difference lies, we did the pairwise post hoc test.

Post hoc test found significant difference between the mild and moderate groups (p <0.001), mild and severe groups (p <0.001), mild and very severe groups (p <0.001). No significant difference between moderate and severe groups, moderate and very severe groups and between severe and very severe groups was found.

So we can conclude that the median SGRQ score in the mild COPD group was significantly less compared to all the other groups and that there was no significant difference between the other groups.

## RESULT –SGRQ C



**Discussion:-**

In this study, the mean age of the patients was 66.9. In the present study, 95 patients were males. The high prevalence in males is due to higher prevalence of smoking in males, they are more exposed to smoking [13,14] and more frequent occupational exposures than females [15].

In our study, the mean total SGRQ-C score for mild COPD was found to be 28.67±14.66 and in very severe COPD was 63.27± 14.71.

In the present study, mild COPD patients differed significantly from other grades of COPD in their total SGRQ-C score, symptoms score, activity score and impact score ( $p < 0.001$ ). This is in favour of the study done by Muhammed et al.<sup>[13]</sup>. Our study found significant difference between the mild and moderate groups ( $p < 0.001$ ), mild and severe groups ( $p < 0.001$ ), mild and very severe groups ( $p < 0.001$ ) in all four domains of SGRQ-C score. No significant difference between moderate and severe groups, moderate and very severe groups and between severe and very severe groups was found.

So we can conclude that the median SGRQ-C score in the mild COPD group was significantly less compared to all the other groups and that there was no significant difference between the other groups.

With respect to the different domains of the SGRQ-C, Battle and Esther<sup>[16]</sup> found that patients showed higher scores in the impact domain than in the symptoms or activity domains; the impact domain was also strongly associated with anxiety (alone or with depression). But in our study impact score in all the grades of COPD were smaller than other domains.

Although spirometry is traditionally seen as the most important determinant of the diagnosis and severity of COPD, the relation between health status and all spirometric values mainly FEV1 is weak. This shows that assessment of COPD severity could benefit from the additional measurement of health status<sup>[17]</sup>.

### Conclusion:-

Quality of life is impaired in patients with COPD and it deteriorates with increasing severity of disease. Increasing severity of COPD is associated with increase in SGRQ-C score. All COPD patients should be evaluated with measurement of QOL besides pulmonary function tests.

### References:-

- [1] A. Buist, M. McBurnie, W. Vollmer, et al., International variation in the prevalence of COPD (the BOLD Study): a population-based prevalence study, *Lancet* 370 (2007) 741–750.
- 2 Global Initiative for Chronic Obstructive Lung Disease; 2023
- 3.. GBD 2015 Chronic Respiratory Disease Collaborators. Global, regional, and national deaths, prevalence, disability-adjusted life years, and years lived with disability for chronic obstructive pulmonary disease and asthma, 1990-2015: A systematic analysis for the Global Burden of Disease Study 2015. *Lancet Respir Med* 2017; 5 : 691-706.
4. India State-Level Disease Burden Initiative Collaborators. Nations within a nation: Variations in epidemiological transition across the states of India, 1990-2016 in the global burden of disease study. *Lancet* 2017; 390 : 2437-60.
5. Indian Council of Medical Research, Public Health Foundation of India, and Institute for Health Metrics and Evaluation. India: Health of the Nation's States — The India State-Level Disease Burden Initiative. New Delhi, India: ICMR, PHFI, and IHME; 2017.
6. R. Pauwels, A. Buist, P. Calverley, et al., The GOLD Scientific Committee. Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease. NHLBI/ WHO Global Initiative for Chronic Obstructive Lung Disease (GOLD) workshop summary, *Am. J. Respir. Crit. Care Med.* 163 (5) (2001) 1256–1276
7. Ferrer M, Villasante C, Alonso J, Sobradillo V, Gabriel R, Vilagut G, et al. Interpretation of quality of life scores from the St George's respiratory questionnaire. *Eur Respir J* March 2002; 19 : 405-13.
8. Meguro M, Barley EA, Spencer S, Jones PW. Development and validation of an improved, COPD-specific version of the St. George respiratory questionnaire. *Chest* 2006; 132 : 456-63.
9. H. Rob, Chronic obstructive pulmonary disease (COPD). Retrieved from [http://www.bbc.co.uk/health/physical\\_health/conditions](http://www.bbc.co.uk/health/physical_health/conditions)
- 10.R. Deyo, The quality of life, research, and care (editorial), *Ann. Intern. Med.* 114 (1991) 695–697.
- 11.G. Guyatt, D. Feeny, D. Patrick, Measuring health-related quality of life, *Ann. Intern. Med.* 118 (1993) 622–629.
- 12- L. Griffith, M. Jaeschker, A comparison of the original chronic respiratory questionnaire with a standardized version, *Chest J.* 124 (2003) 1421–1429.
- 13-Mohammed A. Zamzam , Nourane Y. Azab , Rabab A. El Wahsh , \*, Afaf Z. Ragab , Enas M. Allam , Quality of life in COPD patients, *Egyptian Journal of Chest Diseases and Tuberculosis* 61(2012)281-289
- 14- S. Postma, A. Kerstjens, Epidemiology and natural history of chronic obstructive pulmonary disease, in: G. Gibson, G. John, B. Corrin (Eds.), *Respiratory Medicine*, Saunders, 2003, pp. 1109–1120 (Chapter 11).

- 15-R. Kenneth, Gender bias in the diagnosis of COPD, *Chest J.* 119 (6) (2001) 1691–1695.
- 16- J. Batlle, R. Esther, Factors affecting the relationship between psychological status and quality of life in COPD patients, *Health Qual. Life Outcomes* 8 (2010) 108–110.
- 17- I. Tsiligiannia, K. Janwillem, Factors that influence diseasespecific quality of life or health status in patients with COPD: a systematic review and meta-analysis of Pearson correlations, *Prim. Care. Respir. J.* 20 (3) (2011) 257–268.