

Factors Affecting the Quality of Life Among Patients with Chronic Rhinosinusitis: An Integrative Review

L. Thone¹, Neethu Paul², Sreenivas V³, Bindhu Mathew⁴, Shreemayee Panda⁵

¹MSc Nursing Student, Department of Medical Surgical Nursing, St. John's College of Nursing, Bangalore, India, 560034

²Assistant Professor, Department of Medical Surgical Nursing, St. John's College of Nursing, Bangalore, India, 560034

³Professor, Department of ENT, St. John's Medical College Hospital, Bangalore, India, 560034

⁴Professor, Department of Medical Surgical Nursing, St. John's College of Nursing, Bangalore, India, 560034

⁵Tutor, Department of Medical Surgical Nursing, St. John's College of Nursing, Bangalore, India, 560034

Corresponding Author: L. Thone

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ABSTRACT

Chronic rhinosinusitis, a very common inflammatory disease, is known to have a high symptom burden from nasal as well as extra-nasal symptoms, which have a detrimental effect on the quality of life amongst patients with Chronic Rhinosinusitis. Patients with chronic rhinosinusitis experience a low quality of life, which is affected by several factors.

The aim of this study is to summarize the various factors affecting the quality of life of patients with chronic rhinosinusitis. 21 articles were referred, which were obtained from PubMed, Google Scholar, and Research Gate databases (search of terms "chronic rhinosinusitis", "CRS," "Quality of life," or "QoL" separately or combined) and is limited to articles published in English.

This review found that the health-related quality of life among patients with Chronic Rhinosinusitis is affected by various factors such as the severity of its symptoms, the presence of any other co-morbidities, depression symptoms, socio-economic status, environmental factors, gender, and age.

Keywords: Chronic rhinosinusitis, quality of life

INTRODUCTION

Chronic rhinosinusitis (CRS) is a complex, diverse inflammatory illness of the Sino nasal mucosa with numerous nasal and extra-nasal symptoms [1]. Chronic rhinosinusitis has a high prevalence and affects about 134 million Indians, making it even more prevalent than other conditions that are prominent in the country like diabetes and coronary heart disease [2]. 1 in 8 Indians suffer from chronic rhinosinusitis, out of whom 5–15% are from urban areas [3]. A rhinosinusitis consensus group congregated to define Chronic Rhinosinusitis, and came to the conclusion that there are three primary clinical phenotypes of CRS: allergic fungal rhinosinusitis (AFRS), CRS without nasal polyps (NP), and CRS with nasal polyps (CRSwNP). Acute exacerbations of Chronic Rhinosinusitis, the only recognised form of infectious Chronic Rhinosinusitis, are frequently linked to bacterial or viral infections [1].

Chronic rhinosinusitis is a syndrome that can be brought on by a variety of aetiologies that are complex and poorly understood. Chronic rhinosinusitis is predisposed by ciliary dysfunction, allergies, asthma,

increased sensitivity to aspirin, immunocompromised, genetic, pregnancy, and endocrine factors, as well as local factors specific to the patient (host), biofilm-producing microorganisms, environmental factors, iatrogenic factors, *Helicobacter pylori*, laryngopharyngeal reflux, and osteitis [6].

Studies have shown that physiological and mental health-related quality of life is significantly low among patients with chronic rhinosinusitis, and a number of variables could contribute to the decline of the same. The goal of this review is to determine the various factors affecting the quality of life of patients with Chronic Rhinosinusitis.

QUALITY OF LIFE OF CRS PATIENTS:

Given that a sizable section of the population is afflicted by chronic rhinosinusitis (CRS), the disease is burdensome for both those who experience it personally and the population as a whole [7]. The decrease in quality of life (QoL) linked with Chronic Rhinosinusitis has become increasingly alarming. From the patient's point of view, the way Chronic Rhinosinusitis affects daily life is significantly greater than the results of medical investigations such as CT scans. Health-related Quality of Life, which comprises of an individual's physical, social, and psychological aspects of illness, has been frequently employed as a key indicator for quantifying the intensity of symptoms and evaluating the efficacy of Chronic Rhinosinusitis therapy [10].

FACTORS AFFECTING QUALITY OF LIFE:

The quality of life among patients with Chronic Rhinosinusitis is known to be low, which may be affected by different factors, which are discussed below:

1. Symptomatology:

Chronic rhinosinusitis patients experience various nasal and extra-nasal symptoms such as rhinorrhoea, sneezing, loss of smell,

nasal congestion, ear and facial pain, post-nasal drips, headache, irritability, dizziness, etc., all of which have a detrimental effect on physical and mental health-related quality of life, including sleep. Those with polyps are more likely to experience nasal blockage, hyposmia, and anosmia, whereas those without polyps are more likely to experience facial pain, pressure, and headaches [7]. In terms of intensity and prevalence, nasal obstruction or congestion, altered taste or odour, and the need to blow one's nose are the top three symptoms [8]. Several studies have revealed that the severity of CRS-specific symptoms as a whole is correlated with lower overall health-related Quality of life. The greatest contributor to the quality of life impairment associated with chronic rhinosinusitis is its symptoms [11].

Olfactory dysfunction is the major symptom experienced by patients with chronic rhinosinusitis. Normal olfactory function is vital not just for protection (for example, identifying defective foods or occupational hazards, etc.), but also for the social, functional, and emotional well-being of a person. Hence, the effect of Chronic Rhinosinusitis on olfaction limits the quality of life among patients with the disease [12]. Patients with Chronic Rhinosinusitis not only experience discomfort due to the rhinological symptoms, but they also report problems in the other subscales, such as functional, sleep, emotional, ear, and face which indicates that chronic rhinosinusitis impacts a person in numerous ways, thereby impairing their health-related quality of life [13]. After nasal symptoms, the domains that most affect the quality of life are ear and face symptoms, sleep, and emotional symptoms [14]. Those individuals with controlled symptoms experience a higher or better quality of life.

2. Co-morbidities:

Compared to chronic rhinosinusitis patients without nasal polyps, those with nasal polyps were reported to experience a higher symptom burden and a greater severity of

the disease, which have an extensive impact on their health-related quality of life.^[9] The existence of comorbid conditions such as asthma, COPD, allergic rhinitis, gout, etc. can have a significant impact on the clinical burden and, hence, the quality of life of chronic rhinosinusitis patients. Intolerance to NSAIDs and bilateral eosinophilic Chronic Rhinosinusitis with Nasal Polyps are frequent co-morbidities of Chronic Rhinosinusitis. Among patients with Chronic Rhinosinusitis with Nasal Polyps, asthma, and NSAID-exacerbated respiratory diseases, increased disease severity associated with type 2 inflammation is additionally characterised by recurrence of nasal polyps, higher rates of revision surgery, systemic corticosteroid (SCS) dependence, and poor asthma control, hence, poorer quality of life^[9,15]. Co-morbid anxiety is also shown to have an effect on the decrease in quality of life^[1].

It has been shown that Chronic Rhinosinusitis with Nasal Polyps and the severity of Autonomic Nervous System (ANS) dysfunction symptoms are positively correlated. The most typical dysautonomia symptoms included postural dizziness, an excessive sensation of fullness after eating, excessively dry eyes, and an excessively dry mouth. Sleep issues, post-nasal drip, excessive coughing, and psychological stress were all directly related to how severe Autonomic Nervous System (ANS) dysfunction was^[16].

3. Depression:

Depression affects 10-16% of the general population of patients suffering from chronic rhinosinusitis, and it is frequently linked to increased symptom severity of the illness^[12]. According to a study done in Missouri, 25% of patients with Chronic Rhinosinusitis were actively treated for depression, which is greater than in the general population.

Patients with Chronic Rhinosinusitis who has depression exhibits a poorer mean preoperative Health Related Quality of Life and quality-of-life scores compared to

patients with Chronic Rhinosinusitis who does not have depression^[17]. Chronic rhinosinusitis has a negative impact on many elements of a patient's life, including employment productivity, resulting in a significant socioeconomic burden which is may be affected by disease-related depression symptoms, missed workdays, and treatment requirements^[1].

4. Socioeconomic status:

Chronic rhinosinusitis is significantly associated with lower income and/or socioeconomic status. The link is substantial and is evidenced by an increase in the severity of the illness with poorer social and economic standing^[18]. When compared to other income groups, patients with a higher household income had a greater chance of seeing a clinically relevant improvement in Quality of Life after surgery^[19].

5. Environmental factor:

Environmental factors have an adverse effect on the severity of chronic rhinosinusitis. Small inhalant pollutants may trigger non-allergic manifestations in patients with and without nasal polyposis, which may result in treatment failure due to undiagnosed allergic or non-allergic rhinitis (NAR). This has been demonstrated to be true even in the absence of rhinitis, particularly in patients with Chronic Rhinosinusitis without Nasal Polyps, highlighting the enormous burden air pollutants place on the condition's severity and progression, as well as on the quality of life^[1].

It has been observed that the living and working environment and location all have a direct relationship with Chronic Rhinosinusitis symptoms. Poor housing quality, moisture at home, living in a crowded setting, using air conditioning in the summer, or having a pet at home may contribute to the disease's severity^[18].

6. Gender

Women with Chronic Rhinosinusitis reported a higher level of symptom burden

compared to males despite having a similar or less severe condition, and this may be because of a structural variation in response patterns. Significantly lower Health related Quality of life was found in female patients regardless of Chronic Rhinosinusitis phenotype, particularly in the anxiety/depression domain, with significantly greater findings in the Chronic Rhinosinusitis with Nasal Polyps subgroup [1].

Despite the gender disparities in the incidence and prevalence of Chronic Rhinosinusitis, no clear causes have been found but only speculations. From a sociological perspective, women have historically been seen to be more prone to report symptoms and to give a lower self-evaluation of health, which may bias self-reported statistics towards more disease prevalence in women and a bigger influence of Chronic Rhinosinusitis on quality of life [20]. Physical function and emotional function impairments were reported to be higher among females than males [10].

7. Age

The effect of Chronic Rhinosinusitis on physical function, role function, and bodily pain is higher among the elderly population [10]. The elderly population often presents with other comorbidities, disabilities, and frailty, which have a huge impact on the equality of life of the population [21]. The baseline olfactory function was seen to be worse among patients aged more than 50 years. It is also found that the symptom severity score tends to be higher as age increases [19].

CONCLUSION

This review aimed to outline the various factors affecting the quality of life of patients with chronic rhinosinusitis. Based on the data collected, factors such as the severity of its symptoms, the presence of any other co-morbidities, depression symptoms, socio-economic status, environmental factors, gender, and age have a major impact on the quality of life among patients with chronic rhinosinusitis.

Olfactory dysfunction is the major symptom experienced by patients with chronic rhinosinusitis. The presence of depression symptoms was also found to be one of the factors affecting the quality of life of patients with Chronic Rhinosinusitis. Individuals with lower socioeconomic status tend to have a higher level of symptom severity, which in turn decreases their quality of life.

The result of this literature review will help the nurses understand the different factors that affect the quality of life of patients with Chronic Rhinosinusitis and provide a foundation for nursing interventions in their daily clinical practice. It can also help motivate nurses to conduct interventional research studies pertaining to the various factors affecting quality of life, so as to enhance the quality of life among patients with chronic rhinosinusitis.

Declaration by Authors

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