Journal of Nursing Science
Journal homepage: www.jns.vn

Quality of life among patients with chronic rhinosinusitis at Hadong general Hospital

Nguyen Thi Mai Huong[1], Nguyen Thi Minh Chinh[2], Tran Thi Hong Hanh[2], Do Thi Thu Hien[3]
[1]Hadong General Hospital, [2]Nam Dinh University of Nursing;
[3]Hai Duong Medical Technical University

ABSTRACT

***Objective**: To describe the quality of life among patients with chronic rhinosinusitis at Hadong General Hospital in 2025. **Participants and Methods**: A cross-sectional descriptive study was conducted on 156 patients with chronic rhinosinusitis who were treated at Hadong General Hospital from February to May 2025. The study used the SNOT-22 questionnaire to assess patients' quality of life. **Results**: All patients experienced mild impairment in quality of life, with a mean SNOT-22 score of 64.63 ± 17.17. The highest mean score was observed in nasal and sinus symptoms (26.21 ± 6.24), followed by ear and facial symptoms (10.38 ± 3.21), sleep-related symptoms (12.04 ± 7.50), and psychological symptoms (16.01 ± 6.36). **Conclusion**: Chronic rhinosinusitis significantly affects patients' quality of life. Comprehensive nursing interventions are necessary to alleviate symptoms and provide psychological support.*

***Keywords:** Quality of life; Chronic rhinosinusitis; SNOT-22.*

INTRODUCTION

Chronic rhinosinusitis (CRS) is an inflammatory condition of the nasal and paranasal sinus mucosa, characterized by the persistence of at least two major symptoms-nasal obstruction, anterior or posterior nasal discharge, facial pain or pressure, and loss of smell-for a minimum duration of 12 weeks [1]. This common condition affects approximately 5%–12% of the global population [1]. The prevalence of CRS varies across regions, affecting 5.2% of the population in Canada [2], 11.9% in the United States [3], and 8% in China [4].

To date, several studies have evaluated the quality of life (QoL) in patients with CRS, examining health status, disease severity, treatment methods, and the socioeconomic burden of the disease. CRS significantly reduces patients' QoL in terms of physical well-being, sleep quality, work or study performance, and mental health [5]. It is associated with a heavy symptom burden, decreased olfactory function, and reduced productivity-effects comparable to other chronic, non–life-threatening illnesses that severely impair daily functioning [6].

In Vietnam, CRS poses a substantial burden by reducing patients' quality of life and, if untreated, may lead to long-term complications. A study by Ho Minh Tri [7] assessing the impact of sinonasal disease

Cor. author: Nguyen Thi Minh Chinh
Email: nguyenminhchinhsdh@gmail.com
DOI: 10.54436/jns.2025.05.1075
Received: Aug 18, 2025
Accepted: Oct 23, 2025
Published: Oct 24, 2025

on QoL using the SNOT-22 questionnaire reported a median score of 18.00 ± 17.19, with mild severity accounting for 58.1% of patients and moderate severity for 35.5%. Hadong General Hospital is a first-class hospital under the Hanoi Department of Health and one of the major tertiary healthcare facilities in the western area of the capital. The hospital's Otorhinolaryngology Department receives approximately 40–70 CRS patients each month for examination and treatment. However, no study has yet been published evaluating the QoL of CRS patients at this hospital. Therefore, this study was conducted with the objective: To describe the quality of life of patients with chronic rhinosinusitis treated at Hadong General Hospital in 2025.

PARTICIPANTS AND METHODS

Study participants: Patients with chronic rhinosinusitis receiving outpatient treatment at Hadong General Hospital.

Inclusion criteria: Patients aged 18 years or older, diagnosed with chronic rhinosinusitis, receiving treatment at Hadong General Hospital, able to respond to the questionnaire, and willing to participate in the study.

Exclusion criteria: Patients with severe physical or psychological disorders or those not adhering to the prescribed treatment regimen.

Study period: From December 2024 to August 2025.

Study setting: Department of otorhinolaryngology, Hadong General Hospital

Study design: A descriptive cross-sectional study design was applied. The sample size was calculated based on the formula for cross-sectional descriptive studies.

$$n = Z^2_{(1-\alpha/2)} \frac{p(1-p)}{d^2}$$

In which: n: Minimum required sample size. Z: Z-value derived from the standard normal distribution, obtained from the reference table = 1.96 (corresponding to α = 0.05). α: Level of statistical significance, selected as α = 0.05. d: Desired absolute precision, selected as d = 0.04. p: The proportion of patients with severely impaired quality of life due to chronic rhinosinusitis from the study by Ho Minh Tri [7] was 6.4%.

By substituting these values into the formula, the minimum sample size required was 144 participants. To compensate for potential data loss, an additional 10% was added, resulting in a final sample size of 156 patients, all of whom met the inclusion criteria and agreed to participate in the study during the data collection period from February to May 2025.

Research Instrument: The study used the Sino-Nasal Outcome Test (SNOT-22) to assess patients' quality of life. The instrument had been translated into Vietnamese and validated in the study by Nguyen Nhu Dua [8], demonstrating strong reliability with Cronbach's alpha values greater than 0.8 for all subscales.

The questionnaire included two sections:

Part A: General information about participants such as age, gender, education level, and occupation.

Part B: Assessment of patients' quality of life through 22 items divided into four domains covering health issues experienced over the past two weeks.

Scoring: Each question was rated on a 6-point Likert scale: "No problem," "Very

mild problem," "Mild problem," "Moderate problem," "Severe problem," and "Very severe problem," with scores ranging from 0 to 5. The SNOT-22 scale consisted of the following domains:

Nasal and sinus symptoms (8 items): B1, B2, B3, B4, B5, B6, B21, B22 (need to blow nose, sneezing, runny nose, cough, postnasal drip, thick nasal discharge, loss of smell/taste, nasal blockage); score range: 0–40.

Ear and facial symptoms (4 items): B7, B8, B9, B10 (ear fullness, dizziness, ear pressure, facial pain); score range: 0–20.

Sleep symptoms (4 items): B11, B12, B13, B14 (difficulty falling asleep, waking at night, poor sleep quality, waking up tired); score range: 0–20.

Psychological symptoms (6 items): B15, B16, B17, B18, B19, B20 (fatigue during the day, reduced productivity, poor concentration, frustration/restlessness, sadness/depression, irritability); score range: 0–30.

The total score represents the overall impact on quality of life, ranging from 0 to 110. Higher scores indicate poorer quality of life. Classification of QoL impairment:

No impairment: SNOT-22 = 0

Mild impairment: SNOT-22 < 20

Severe impairment: SNOT-22 = 20–110

Data analysis: Collected data were reviewed, cleaned, coded, and analyzed using SPSS version 20.0. Quantitative variables were presented as mean ± standard deviation (SD), and categorical variables as frequency (N) and percentage (%).

Ethical considerations: This study was conducted after obtaining ethical approval from the Ethics Committee of Nam Dinh University of Nursing (Approval No. 577/GCN-HDDD dated March 5, 2025) and authorization from Hadong General Hospital. All participants were clearly informed about the study's purpose, and confidentiality of personal information was ensured. Participation was voluntary, and those who agreed signed an informed consent form before joining the study.

RESULTS

The study included 156 patients with an average age of 43.03 ± 17.61 years (ranging from 18 to 86 years). The 20–40 age group accounted for the highest proportion (50.0%), while those under 20 years represented the lowest (8.3%). Female patients made up 55.8%, higher than males (44.2%).

Table 1. Quality of life scores on nasal and sinus symptoms among participants (n = 156)

Content	Mean ± SD	Min – Max
Need to blow nose	2.99 ± 1.27	1 – 4
Sneezing	2.60 ± 1.20	1 – 4
Runny nose	3.01 ± 1.27	1 – 4
Cough	3.81 ± 1.47	1 – 4
Postnasal drip	3.41 ± 1.36	1 – 4

Content	Mean ± SD	Min – Max
Thick nasal discharge	2.60 ± 1.02	1 – 4
Olfactory/taste disturbance	3.60 ± 1.02	1 – 4
Nasal obstruction/congestion	4.20 ± 0.40	1 – 4
Main nasal and sinus symptoms	**26.21 ± 6.24**	**14 – 31**

The mean total quality of life score for the nasal and sinus symptom domain was 26.21 ± 6.24 (ranging from 14 to 31 points). Among individual symptoms, nasal obstruction/congestion had the highest mean score (4.20 ± 0.40), followed by cough, olfactory/gustatory dysfunction, and postnasal discharge.

Table 2. Quality of life scores on ear and facial symptom domain among participants (n = 156)

Content	Mean ± SD	Min – Max
Middle ear effusion	3.38 ± 1.37	1 – 5
Dizziness/vertigo	2.01 ± 1.42	0 – 4
Ear pain (due to pressure)	2.39 ± 1.63	0 – 4
Facial pain	2.59 ± 1.36	1 – 4
Ear and facial symptom domain	**10.38 ± 3.21**	**7 – 15**

The mean total quality of life score for the ear and facial symptom domain was 10.38 ± 3.21. The highest mean score was observed for middle ear effusion (3.38 ± 1.37), followed by facial pain and ear pain due to pressure, while dizziness/vertigo showed the lowest mean score (2.01 ± 1.42).

Table 3. Quality of life scores on sleep symptom domain among participants (n = 156)

Content	Mean ± SD	Min – Max
Difficulty falling asleep	3.01 ± 2.10	0 – 5
Night awakenings	3.01 ± 2.10	0 – 5
Poor sleep quality	3.01 ± 2.10	0 – 5
Waking up tired	3.00 ± 1.40	1 – 5
Sleep domain	**12.04 ± 7.50**	**2 – 20**

The mean total quality of life score for the sleep domain was 12.04 ± 7.50. Sleep disturbances were generally moderate, with nearly equivalent mean scores for difficulty falling asleep, night awakenings, and poor sleep quality (approximately 3.01 ± 2.10). The symptom waking up tired was also quite common (3.00 ± 1.40).

Table 4. Quality of life scores on psychological domain among participants (n = 156)

Content	Mean ± SD	Min – Max
Daytime fatigue	3.60 ± 1.50	1 – 5
Reduced work productivity	2.20 ± 1.60	0 – 4
Decreased concentration	2.40 ± 1.35	1 – 4
Irritability / frustration / restlessness	2.61 ± 1.36	1 – 4
Sadness / depression	2.60 ± 1.50	1 – 5
Social discomfort / embarrassment	2.60 ± 1.02	1 – 4
Psychological domain	**16.01 ± 6.36**	**6 – 23**

The mean total quality of life score for the psychological domain was 16.01 ± 6.36. The most prominent symptom was daytime fatigue, with the highest mean score (3.60 ± 1.50). Other symptoms such as irritability, frustration, restlessness, sadness, or social discomfort showed lower mean scores.

Table 5. Classification of quality of life among participants (n = 156)

Content	Frequency (N)	Percentage (%)
Unimpaired quality of life	0	0
Mildly impaired quality of life	156	100
Severely impaired quality of life	0	0

All patients (100%) experienced mild impairment in quality of life, with no cases of normal or severely impaired quality of life recorded.

DISCUSSION

Before treatment, the mean total score for the main nasal and sinus symptoms among patients with chronic rhinosinusitis was 26.21 ± 6.24 (ranging from 14 to 31). This result indicates a high level of symptom severity, clearly reflecting the symptom burden before medical intervention. Among these, nasal obstruction/congestion had the highest mean score (4.20 ± 0.40). Compared with the study by Nguyen Nhu Dua [8], the total nasal-sinus symptom score was 11.01 ± 5.84 (ranging from 1-27), which was considerably lower than in the present study. The difference may be attributed to variations in participant characteristics and study settings. Since this research was conducted at the pre-treatment stage, the higher scores are reasonable and accurately reflect the clinical reality. According to DeConde [9], prolonged nasal symptoms not only cause physical discomfort but also lead to sleep disturbance, lack of concentration, reduced work productivity, and psychological distress. This highlights the strong relationship between symptom severity and quality of life (QoL), emphasizing the importance of comprehensive symptom

assessment prior to treatment, not only to determine disease severity but also to monitor treatment outcomes and tailor appropriate interventions.

The mean total score for ear and facial symptoms was 10.38 ± 3.21 (ranging from 7 to 15). This domain reflects secondary or adjacent effects resulting from inflammation spreading from the nasal sinuses to the middle or inner ear and facial sensory nerves. These findings suggest that chronic rhinosinusitis affects not only the nasal area but may also extend to surrounding structures, including the middle ear and facial nerves. The frequent reporting of such symptoms explains the notable decline in patients' quality of life, especially in communication, hearing, or facial sensation. The average score was higher than that reported by Nguyen Nhu Dua (5.54 ± 3.93; range: 0-17) [8]. Early identification and evaluation of these ear and facial symptoms are essential for comprehensive treatment, preventing overlooked complications, and improving QoL among CRS patients. Therefore, Hadong General Hospital should strengthen integrated management and close monitoring to improve patient outcomes.

Before treatment, the mean score for the sleep domain was 12.04 ± 7.5 (ranging from 2 to 20), reflecting noticeable sleep disturbances with moderate to severe effects. The identification of such sleep disorders provides a foundation for comprehensive interventions addressing both local symptoms and systemic consequences such as sleep and mental health problems. Nurses can help improve patients' sleep through emotional support, maintaining a quiet and clean ward environment, and encouraging adherence to treatment regimens.

The mean total score for the psychological domain was 16.01 ± 6.36 (ranging from 6 to 23). Among the psychological symptoms, daytime fatigue was the most prominent (3.60 ± 1.5), indicating that patients often experienced tiredness and low energy in daily activities. This is a common consequence of chronic inflammatory diseases, especially those associated with sleep disruption, pain, or prolonged discomfort. Other symptoms, such as irritability, frustration, restlessness (2.61 ± 1.36), sadness (2.60 ± 1.5), and social discomfort (2.60 ± 1.02), also reflect the emotional and social impact of the disease. Although not severe, these long-lasting psychological disturbances can gradually and silently degrade quality of life. Studies have shown that CRS patients have a higher risk of depression and anxiety, ranging from 20–30%, particularly among those with prolonged symptoms affecting sleep, work, or social life. These effects may form a vicious cycle in which CRS induces psychological distress, which in turn exacerbates the disease's progression [10]. Therefore, psychological evaluation is crucial in building a comprehensive treatment strategy. Beyond symptomatic therapy, patients should receive psychological counseling and emotional support to enhance overall treatment effectiveness and quality of life. Nurses and healthcare professionals should integrate depression and anxiety screening into the treatment process, especially for patients with persistently low QoL or recurrent symptoms.

The results showed that 100% of patients with chronic rhinosinusitis at Hadong General Hospital in 2025 had mildly impaired quality of life, with no cases of normal or severely impaired QoL. This contrasts sharply with the findings of Hilaire K. Kalala [11] in a study conducted in Kinshasa, Democratic Republic of the

Congo, where 95.6% of patients had severely impaired QoL and only 4.45% had mild impairment. Such differences may result from variations in population characteristics and healthcare systems between the two settings. At Hadong General Hospital, early access to care, adherence to standardized medical protocols, and timely counseling likely contributed to symptom control and improved QoL. In contrast, delayed healthcare access or prior treatment failure in Kinshasa could have led to more severe QoL deterioration.

LIMITATIONS: This study was conducted at a single hospital with a limited sample size; therefore, it may not fully represent all CRS patients. It also did not analyze associated factors or compare patient groups by demographic characteristics. Future research should adopt multi-center designs, longitudinal or controlled approaches, to more accurately assess the impact of chronic rhinosinusitis on quality of life among Vietnamese patients.

CONCLUSIONS

The study found that all patients (100%) had mildly impaired quality of life, with a mean SNOT-22 score of 64.63 ± 17.17. The mean scores by domain were as follows: nasal and sinus symptoms: 26.21 ± 6.24, ear and facial symptoms: 10.38 ± 3.21, sleep symptoms: 12.04 ± 7.5, and psychological symptoms: 16.01 ± 6.36. To detect early QoL deterioration and provide appropriate support, nurses should comprehensively assess patients' symptoms, sleep, and psychological conditions, not just nasal manifestations. They should also proactively provide health education to patients and families about disease characteristics, symptom monitoring, nasal hygiene, and proper medication use to promote treatment adherence and improve overall outcomes.

REFERENCES

1. Fokkens W., Lund V., Hopkins C., Hellings P.W., et al. European Position Paper on Rhinosinusitis and Nasal Polyps 2020. Rhinology. 2020;29:1-464. doi: 10.4193/Rhin20.600.

2. Canada DeConde, Soler Z.M. Chronic Rhinosinusitis: Epidemiology and Burden of Disease. American Journal of Rhinology and Allergy. 2016;30:134-139. doi:doi.org/10.2500/ajra.2016.30.4297

3. Hirsch A., Stewart W., Sundaresan A., Young A., et al. Nasal and Sinus Symptoms and Chronic Rhinosinusitis in a Population-Based Sample. Allergy. 2017;72:274-281. doi: 10.1111/all.13042.

4. Shi J.B., Fu Q.L., Zhang H., Cheng L., al. e. Epidemiology of Chronic Rhinosinusitis: Results from a Cross-Sectional Survey in Seven Chinese Cities. Allergy. 2015;70: 533-539. doi: 10.1111/all.12577.

5. Pham L.D., Vo TQ, Nguyen HB, Pham AT, et al. Assessment of Cost of Illness and Quality of Life in Chronic Rhinosinusitis Patients with Surgical Treatment. Health Economics and Community-Oriented Practice in Vietnam. 2019;69:10-19.

6. Klonaris D, Doulaptsi M, Karatzanis A, Velegrakis S, et al. Assessing Quality of Life and Burden of Disease in Chronic Rhinosinusitis: A Review. Rhinology Online. 2019;2:6-13. DOI:10.4193/RHINOL/18.067

7. Ho Minh Tri, Vu Doan Minh Nhat, Hoang Kieu Giang. Evaluation of nasal symptoms and quality of life in patients with nasal septal deviation and inferior turbinate hypertrophy using the SNOT-22 and NOSE questionnaires. Journal of Clinical Medicine. 2024;16(7). DOI: 10.38103/jcmhch.16.7.17.

8. Nguyen Nhu Dua. Study on the current situation of chronic rhinosinusitis among coal industry workers at Nam Mau Coal Company, Uong Bi, Quang Ninh, and evaluation of intervention effectiveness [Doctoral dissertation]. Hanoi Medical University. 2021.

9. DeConde, Mace. Characterization of facial pain associated with chronic rhinosinusitis using validated pain evaluation instruments. International Forum of Allergy & Rhinology. 2015;5(8):682–691. doi: https://doi.org/10.1002/alr.21533

10. Rodney J Schlosser, Kristina Storck, Bernadette M Cortese. Depression in chronic rhinosinusitis: A controlled cohort study. Am J Rhinol Allergy. 2016;30(2):128–133. doi:10.2500/ajra.2016.30.4290

11. Hilaire K. Kalala, Patricia K. Kakobo, Honore NY, Lievin K. Mvita, Léon N. Muamba. Evaluation of the Quality of Life of Patients Suffering from Chronic Rhinosinusitis in a Hospital Setting in Kinshasa. International Journal of Otolaryngology and Head & Neck Surgery. 2024;13(1). DOI: 10.4236/ijohns.2024.131005