sciendo

DOI: 10.2478/rjr-2025-0015

Romanian Journal of Rhinology, Volume 15, No. 59, July - September 2025

EDITORIAL

The psychological impact of sinonasal pathology

Raluca Enache

ENT Sarafoleanu Medical Clinic, Bucharest, Romania

Sinonasal pathology, including rhinosinusitis with or without nasal polyps, rhinitis, nasal septal deviations, or sinonasal tumors, is commonly encountered in otorhinolaryngological practice. Historically, their assessment has focused predominantly on physical manifestations such as nasal obstruction, rhinorrhea, facial pain, olfactory deficits, or breathing impairment. However, an emerging body of evidence highlights that rhinosinusal pathology can have a significant impact on the psychological status of these patients. The associated emotional and mental health consequences warrant further attention and integration into our clinical paradigm.

Is there a strong association between sinonasal pathology and psychologic problems?

Recent literature increasingly supports the bidirectional relationship between sinonasal pathology and psychological well-being. Patients with persistent nasal and sinus symptoms or recurrent infections often report decreased quality of life (QoL), poor sleep, and cognitive fatigue. These physical symptoms, in turn, contribute to or exacerbate psychiatric symptoms including anxiety, depressed mood, irritability, and social withdrawal.

Meta-analytic evidence reveals that depression afflicts 24.7% of chronic rhinosinusitis (CRS) patients (95%CI, 21.3% to 28.1%), while anxiety affects nearly 29.7% (95%CI, 19.3% to 40.2%), with higher prevalence rates observed in clinical cohorts relative to community samples (higher rates in female patients with 36.1% (95%CI, 25.3% to 46.9%) and in patients without nasal polyps 26.2% (95%CI, 21.9% to 30.5%))[1]. A large Korean nationwide cohort study including 21,707 patients with CRS and 86,828 controls demonstrated a higher incidence of depression in the CRS group when compared to controls (9.8% vs 5.2%, $p < 0.001$; adjusted hazard ratio of 1.41, 95% CI 1.33–1.48)[2]. Notably, CRS without nasal polyps (CRSsNP) exhibited higher psychiatric risk than CRS with nasal polyps (CRSwNP), suggesting phenotype-specific psychosocial profiles[1-3].

The same link was observed between allergic and non-allergic rhinitis and depression or anxiety. Different studies have shown that it is not the persistence or seasonality of symptoms that creates psychological discomfort, but their severity[4-6]. A cross-sectional analysis of 4,320 participants revealed a 42% higher incidence of depression among patients with rhinitis compared with those without (OR 1.42; 95% CI 1.03–1.95, $p = 0.04$), the incidence being twice as high in patients with non-allergic rhinitis (OR 1.99; 95% CI 1.34–2.96, $p = 0.002$)[6]. In a nationwide longitudinal study, Chen et al.[7] reported that of 9,506 adolescents with allergic rhinitis (AR) and 38,024 controls, the AR adolescents presented a higher risk of developing bipolar disorder (0.17 vs 0.18 per 1,000 persons, $p < 0.001$; hazard ratio 4.62, 95% CI 3.17 to 6.75).

Nasal obstruction and sinonasal inflammation often precipitate sleep fragmentation, with repercussions for mood, cognitive acuity, and emotional regulation. Sleep impairment in CRS is strongly associated with both depression and anxiety[8]. When evaluating the impact of sinonasal disease on sleep duration among US adults, Zhou et al.[9] found that both patients with allergic rhinitis and sinusitis had fewer mean hours of sleep per night compared to controls (7.02 vs 7.14 hours, $p < 0.01$; 6.98 vs 7.14 hours, $p < 0.001$, respectively). The authors also reported an important influence upon the mean workdays missed (4.60 vs 3.41 days, $p < 0.01$, for AR; 5.87 vs 3.41 days, $p < 0.001$, for sinusitis).

On the other hand, facial pain and pressure not only diminish QoL but also contribute to chronic pain syndromes, known risk factors for depressive and anxious states[10].

Olfactory dysfunction, frequently encountered in patients with sinonasal pathology, may have severe psychological effects, increasing isolation, loss of pleasure, emotional

Corresponding author: Raluca Enache, MD, PhD, ENT Sarafoleanu Medical Clinic, 1 Lt. Av. Iuliu Tetrat Street, District 1, Bucharest, Romania
ORCID: https://orcid.org/0000-0002-2841-6265
E-mail: r.enache@rinologie.ro
Received for publication: June 10, 2025 / **Accepted:** June 17, 2025

detachment, being an independent risk factor for major depressive disorder.

Can psychological symptoms in rhinology patients be assessed?

Validated instruments such as the 22-item Sino-Nasal Outcome Test (SNOT-22) have consistently shown that rhinologic symptom severity correlates with psychological distress scores. SNOT-22 is a subjective tool used to evaluate the impact of chronic rhinosinusitis (as well as other sinonasal conditions) on patients' QoL[4,11]. It consists of 22 items, each representing a specific symptom impact covering specific areas including nasal symptoms, ear/facial symptoms, sleep dysfunction, psychological/emotional impact. The higher the score, the greater the impact upon patients' QoL, with a direct relationship between worse SNOT-22 scores and selection for surgery[12,13].

The Hospital Anxiety and Depression Scale (HADS) is a screening tool for both anxiety and depression in patients with different sinonasal disorders[4,14]. It consists of 14 items, 7 for anxiety and 7 for depression, and is useful in cases where somatic (psychological) symptoms may overlap with physical ones.

There are other questionnaire tools available for direct evaluation of mental health status, which can be used by otorhinolaryngologists in patients with different sinonasal pathologies: the Olfactory Disorders Questionnaire (ODQ), the Beck Depression Inventory (BDI), the Generalized Anxiety Disorder 7 (GAD-7), the Patient Health Questionnaire-9 (PHQ-9), the Montreal Cognitive Assessment (MoCA)[4].

It is recommended to implement screening preoperatively, at diagnosis in chronic cases, and periodically during follow-up, especially in patients reporting severe sleep disruption, facial pain, anosmia, or incongruent symptom severity.

Reality in clinical practice and further considerations

Unfortunately, in day-to-day practice, psychological screening remains a rare habit in rhinology despite the above-mentioned associations. Mental health concerns may be perceived as secondary or unrelated to the nasal complaint, leading to delays in diagnosis and treatment of preexisting comorbid conditions.

An interdisciplinary collaboration between otorhinolaryngologists, primary care physicians, allergologists, and mental health professionals can improve patient outcomes and optimize treatment strategies. This integrative approach is particularly relevant in surgical decision-making, where expectations regarding postoperative quality of life must consider emotional and psychosocial outcomes alongside physiological benefits.

As practitioners, we should adopt a more holistic model of care and address not only the physical nasal and associated symptoms but also the psychological impact of sinonasal disorders. The psychological impact of disease on our patient is real and can be measurable and clinically significant.

Funding: None.
Conflict of interests: None.
Financial discloser: None.

REFERENCES

1. Fan H, Han Z, Gong X, Wu Y, Fu Y, Zhu T, et al. Prevalence and predictors of depression and anxiety in patients with chronic rhinosinusitis: a systematic review and meta-analysis. BMJ Open. 2024;14(3):e079273. DOI: 10.1136/bmjopen-2023-079273.
2. Choi HG, Hong SJ, Han J, Park CH, Lee JS. Increased the risk of depression in patients with chronic rhinosinusitis without polyp: A longitudinal follow up study using a national sample cohort. Medicine (Baltimore). 2020;99(22):e20277. DOI: 10.1097/MD.0000000000020277.
3. Schlosser RJ, Hyer JM, Smith TL, Mace JC, Cortese BM, Uhde TW, et al. Depression-specific outcomes after treatment of chronic rhinosinusitis. JAMA Otolaryngol Head Neck Surg. 2016;142(4):370-6. DOI: 10.1001/jamaoto.2015.3810.
4. Soltani ZE, Elahi M. Psychological impact of rhinology disorders. In: Al-Qudah M. Rhinology conditions - Contemporary topics. IntechOpen; 2024. Available from: https://www.intechopen.com/chapters/1190213.
5. Mou YK, Wang HR, Zhang WB, Zhang Y, Ren C, Song XC. Allergic rhinitis and depression: Profile and proposal. Front Psychiatry. 2022;12:820497. DOI: 10.3389/fpsyt.2021.820497.
6. Roxbury CR, Qiu M, Shargorodsky J, Woodard TD, Sindwani R, Lin SY. Association between rhinitis and depression in United States adults. J Allergy Clin Immunol Pract. 2019;7(6):2013-20. DOI: 10.1016/j.jaip.2019.02.034.
7. Chen MH, Lan WH, Hsu JW, Huang KL, Chen YS, Li CT, et al. Risk of bipolar disorder among adolescents with allergic rhinitis: A nationwide longitudinal study. J Psychosom Res. 2015;79(6):533-6. DOI: 10.1016/j.jpsychores.2015.08.009.
8. Alt JA, Smith TL. Chronic rhinosinusitis and sleep: A contemporary review. Int Forum Allergy Rhinol. 2013;3(11):941-9. doi:10.1002/alr.21208
9. Zhou S, Hur K, Shen J, Wrobel B. Impact of sinonasal disease on depression, sleep duration, and productivity among adults in the United States. Laryngoscope Investig Otolaryngol. 2017;2(5):288-94. DOI: 10.1002/lio2.87.
10. De La Rosa JS, Brady BR, Ibrahim MM, Herder KE, Wallace JS, Padilla AR, et al. Co-occurrence of chronic pain and anxiety/depression symptoms in U.S. adults: prevalence, functional impacts, and opportunities. Pain. 2023;165(3):666-73. DOI: 10.1097/j.pain.0000000000003056.
11. Hopkins C, Gillett S, Slack R, Lund VJ, Browne JP. Psychometric validity of the 22-item sinonasal outcome test. Clin Otolaryngol. 2009;34(5):447-54. DOI: 10.1111/j.1749-4486.2009.01995.x.
12. DeConde AS, Bodner TE, Mace JC, et al. SNOT-22 quality of life domains differentially predict treatment modality selection in chronic rhinosinusitis. Int Forum Allergy Rhinol. 2014;4(12):972-9. DOI:10.1002/alr.21387
13. Soler ZM, Rudmik L, Hwang PH, Mace JC, Schlosser RJ, Smith TL. Patient-centered decision making in the treatment of chronic rhinosinusitis. Laryngoscope. 2013;123(10):2341-6. DOI: 10.1002/lary.24027.
14. Rodrigues J, Pinto JV, Alexandre PL, Sousa-Pinto B, Pereira AM, Raemdonck K, et al. Allergic rhinitis seasonality, severity, and disease control influence anxiety and depression. Laryngoscope. 2023;133(6):1321-7. DOI: 10.1002/lary.30318.