Vietnam Journal of Community Medicine, Vol. 66, English version No. 2, 59-64

PREVALENCE AND OCCUPATIONAL CORRELATES OF TRADITIONAL MEDICINE SYNDROMES AMONG PATIENTS WITH CHRONIC RHINOSINUSITIS: A CROSS-SECTIONAL STUDY

Vo Kieu My[1], Nguyen Thai Duong[1,2], Nguyen Thanh Hung[2], Ly Chung Huy[1,2*]

[1]University of Medicine and Pharmacy at Ho Chi Minh City - 217 Hong Bang, Cho Lon Ward, Ho Chi Minh City, Vietnam
[2]Le Van Thinh Hospital, 130 Le Van Thinh, Binh Trung Ward, Ho Chi Minh City, Vietnam

Received: 14/08/2025
Revised: 16/09/2025; Accepted: 19/12/2025

ABSTRACT

Objective: To investigate the prevalence of Traditional Medicine (TM) syndromes and their association with occupation in patients with chronic rhinosinusitis (CRS) at Le Van Thinh Hospital.

Methods: An analytical cross-sectional study was conducted at Le Van Thinh Hospital from December 2024 to April 2025.

Results: Among 384 patients with chronic rhinosinusitis, six syndromes and one special pattern were identified. The most common were Lung meridian constrained by heat (29.17%), followed by Lung Qi Deficiency (27.60%) and Qi Stagnation with Blood Stasis (17.97%). The least common were Spleen Qi Deficiency with Dampness Retention (3.91%) and Kidney Yang Deficiency (3.65%). The Phlegm-Turbidity Obstructing the Lung syndrome was significantly associated with female gender ($p < 0.05$).

Conclusion: In patients with chronic rhinosinusitis, the common TM syndromes include Lung Lung meridian constrained by heat (29.17%), Lung Qi Deficiency (27.6%), Qi Stagnation with Blood Stasis (17.97%), and Phlegm-Turbidity Obstructing the Lung (16.15%). There is an association between Phlegm-Turbidity Obstructing the Lung and Lung Qi Deficiency with occupation.

Keywords: Chronic rhinosinusitis, traditional medicine syndrome, TM, Lung meridian constrained by heat, Lung Qi Deficiency, Qi Stagnation with Blood Stasis, Phlegm-Turbidity Obstructing the Lung.

1. INTRODUCTION

Chronic rhinosinusitis (CRS) is a significant public health concern in otorhinolaryngology, both in Vietnam and worldwide. It is clinically defined as a persistent inflammatory process involving the nasal and paranasal sinus mucosa lasting at least 12 consecutive weeks, with or without nasal polyps. Although extensive research has been undertaken, the etiology and pathogenesis of CRS remain incompletely elucidated. Common symptoms include nasal obstruction, persistent nasal discharge, and facial pain or pressure. In Vietnam, the prevalence of CRS has also been increasing, from 2–5% of the population in 2003 [1] to nearly 15% in recent years. CRS is closely related to occupational and workplace environmental factors. According to Traditional Medicine (TM), CRS falls within the category of "chronic Bi Yuan," characterized by persistent nasal obstruction, purulent nasal discharge, and prolonged headaches. TM attributes the disease to pathogenic wind-cold, toxic heat, and turbid phlegm obstructing the lung, spleen, liver, and kidney meridians, resulting in impaired qi flow [2]. Currently, modern medical (MM) treatments such as intranasal corticosteroids, antibiotics, systemic corticosteroids, and surgery provide certain therapeutic benefits. Still, they are associated with side effects, high costs, and a significant risk of recurrence [3]. In contrast, TM is gaining increasing attention due to its comprehensive therapeutic approach, minimal side effects, and its ability to improve patients' quality of life and clinical symptoms. However, effective TM treatment fundamentally requires accurate syndrome differentiation according to each patient's constitutional pattern. At present, there are very few systematic studies investigating the distribution of TM syndromes among patients with CRS. Particularly at primary healthcare facilities, integration between MM and TM in diagnosing and treating this condition remains limited.

*Corresponding author
Email: lychunghuy@ump.edu.vn **Phone**: (+84) 989974868 **DOI:** 10.52163/yhc.v66i8.3237

The lack of practical evidence in the classification of TM syndrome poses challenges to accurate pattern diagnosis, thereby affecting treatment outcomes. This study was conducted to provide preliminary data on the prevalence of TM syndromes in patients with CRS and their association with occupational factors at Le Van Thinh Hospital. The findings aim to support clinicians in selecting appropriate treatment regimens, enhancing treatment efficacy, and reducing prevention and recurrence. Furthermore, the results serve as an initial basis for developing integrated MM–TM treatment protocols at the primary healthcare level.

2. SUBJECTS AND METHODS

2.1. Study Design

Analytical cross-sectional study.

2.2. Study Population

Patients with chronic rhinosinusitis presenting to the Otorhinolaryngology Department, Le Van Thinh Hospital.

2.3. Study Setting and Period

Setting: Otorhinolaryngology Department, Le Van Thinh Hospital (130 Le Van Thinh Street, Binh Trung Ward, Ho Chi Minh City, Vietnam).

Study period: December 2024 – June 2025.

2.4. Sample Size and Sampling Method

Convenience random sampling was applied. Patients diagnosed with chronic rhinosinusitis who met the inclusion criteria and attended the outpatient clinic of the Otorhinolaryngology Department at Le Van Thinh Hospital from December 2024 to April 2025 were recruited.

- Inclusion criteria: All patients diagnosed with chronic rhinosinusitis according to the EPOS 2020 criteria (disease duration ≥ 12 weeks with ≥ 2 symptoms, one of which must be nasal discharge or nasal obstruction, ± facial pain/pressure, ± reduction/loss of smell). Age ≥ 18 years and willingness to participate in the study.

- Exclusion criteria: Acute rhinosinusitis; allergic fungal rhinosinusitis, allergic rhinitis, other acute diseases, and other otorhinolaryngological conditions (pharyngitis, bronchitis, tonsillitis, etc.). Patients with severe systemic diseases, autoimmune diseases, immunodeficiency disorders, or psychiatric disorders. Patients with speech disorders, impaired consciousness, or dementia who could not communicate with the physician or follow instructions; those unable to independently complete the questionnaire; and uncooperative patients.

2.5. Study Variables

2.5.1. Independent variables

- Age group: Recorded from the patient's national identification card. Sex: Male or female, recorded from the patient's national identification card. Occupation: The patient's primary occupation. Occupations with exposure to animals, such as veterinarians, pet groomers, etc. Occupations with exposure to smoke, paper dust, wood dust, metal dust, chemicals, insects, latex, cleaning agents, disinfectants, and pharmaceuticals, such as printing workers, etc. Culinary occupations using cooking methods involving charcoal, firewood, etc. Other occupations (e.g., office workers, writers, editors, teachers, programmers, artists, graphic designers, consultants, etc.)

2.5.2. Dependent variable

Variable Definition/Classification

Traditional Medicine (TM) Syndromes Phlegm-turbidity obstructing the Lung: White, turbid, copious, foul-smelling nasal discharge; nasal obstruction; dizziness; edematous nasal mucosa with abundant secretion. May present with productive cough, chest oppression, pale-red tongue with white greasy coating, and slippery pulse [4]

Lung meridian constrained by heat: Thick yellow nasal discharge, scanty in amount, possibly dripping down the throat; nasal obstruction; erythematous nasal mucosa. May present with headache, itchy throat, productive cough with yellow sputum, red tongue with thin yellow coating, and rapid, forceful pulse [4]

Lung qi deficiency: White, sticky, odorless, copious nasal discharge; nasal obstruction; hyposmia; susceptibility to colds; edematous nasal mucosa. May present with aversion to cold, spontaneous sweating, productive cough with white sputum, pale-red tongue with white coating, and weak pulse [4].

Spleen qi deficiency with dampness retention: White, sticky, odorless nasal discharge; marked nasal obstruction; dizziness; possible nasal polyps. May present with poor appetite, loose stools, fatigue, sallow complexion, pale and enlarged tongue, and slow, weak pulse [4].

Spleen qi deficiency with dampness retention: White, sticky, odorless nasal discharge; marked nasal obstruction; dizziness; possible nasal polyps. May present with poor appetite, loose stools, fatigue, sallow complexion, pale and enlarged tongue, and slow, weak pulse [4]

Qi stagnation with blood stasis: Thick white or yellow nasal discharge; recurrent, prolonged headache; dark-red nasal mucosa; copious purulent discharge; radiologic evidence of sinus mucosal thickening. May present with dark-red or purplish tongue with petechiae, and choppy pulse [4]

Special pattern: No distinctive nasal/sinus symptoms, and tongue–pulse signs inconsistent with the above patterns

2.6. Data Collection Procedure

Eligible patients were selected from the

Otorhinolaryngology Department at Le Van Thinh Hospital from December 2024 to April 2025. The study objectives and procedures were clearly explained to each patient, who was then guided to sign an informed consent form, followed by direct completion of a screening questionnaire.

Data was collected using a pre-validated survey form. The classification of Traditional Medicine (TM) syndromes was performed by three licensed TM physicians using the Delphi method. All data were entered, coded, verified, and analyzed.

2.7. Data Processing and Analysis Tools

Data were entered using Microsoft Excel 2019 and subsequently analyzed with STATA version 17. Qualitative variables were described using absolute frequencies (numbers) and percentages (%). Associations were determined using the Chi-square test when the expected frequency was greater than 5, and Fisher's exact test when the expected frequency was less than or equal to 5. Statistical significance was set at $p \leq 0.05$; results with $p > 0.05$ were considered not statistically significant.

2.8. Ethical Considerations

The study was approved by the Ethics Committee in Biomedical Research, University of Medicine and Pharmacy at Ho Chi Minh City, approval number 3903/HĐĐĐ-ĐHYD, dated November 28, 2024.

3. RESEARCH RESULTS

3.1. Characteristics of the Study Sample

The study surveyed 384 patients with chronic rhinosinusitis at the Otorhinolaryngology Department, Le Van Thinh Hospital, Thu Duc City, from December 2024 to April 2025

Table 1. Characteristics of the Study Sample

Characteristics	Frequency (n=384)	Percentage (%)
Age group (n=384)		
≥18 – <30 years	33	8.59
≥30 – <45 years	122	31.77
≥45 – <60 years	124	32.29
≥60 years	105	27.34
Sex (n=384)		
Male	170	44.27
Female	214	55.73
Occupation (n=384)		
Exposure to animals	32	8.33
Exposure to dust/ chemicals	37	9.64
Exposure to charcoal/ wood smoke	26	6.77
Other occupations	289	75.26

Comment: In this study, the age distribution of participants showed that the majority were between 30 and 60 years of age. Specifically, the 45–<60-year group accounted for the highest proportion at 32.29%, followed by the 30–<45-year group at 31.77%. The 18–<30-year group had the lowest proportion at 8.59%. These results indicate that middle-aged individuals predominated in the study sample. The mean age of the study population was 48.9 ± 14 years. The proportion of female patients with chronic rhinosinusitis was higher than that of male patients (female: 55.73%, male: 44.27%), representing a 1.25-fold difference. Regarding occupation, most patients were in the "other occupations" category (75.26%), while occupations with exposure to animals, dust/chemicals, or charcoal/wood smoke each accounted for less than 10% of the sample.

3.2. Proportion of Traditional Medicine Syndromes in the Study Sample

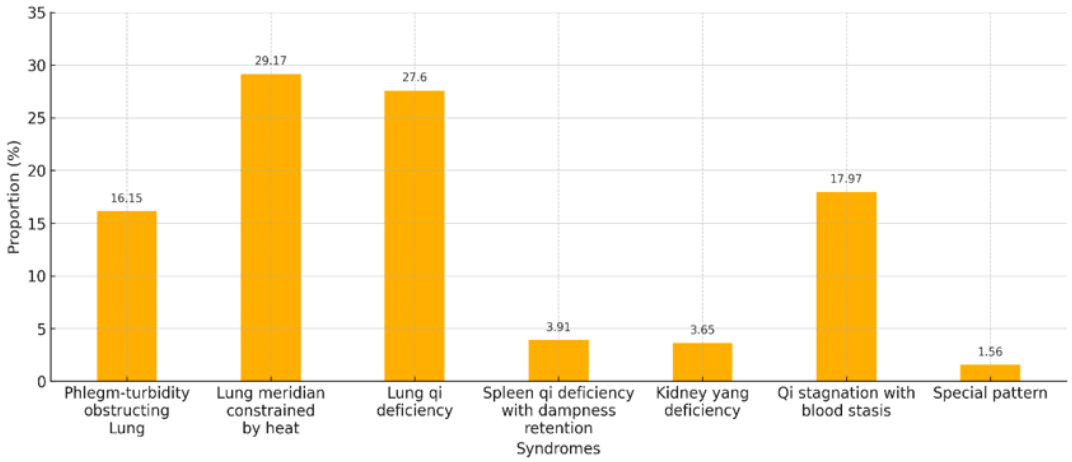

Figure 1. Proportion of Traditional Medicine Syndromes in Patients with Chronic Rhinosinusitis

Comment: In the study sample, the "Lung meridian constrained by heat" syndrome accounted for the most significant proportion (29.17%, one-third of patients), commonly observed when pathogenic heat stagnates in the Lung, causing thick yellow nasal discharge, nasal obstruction, headache, and dry throat. The high prevalence suggests a prominent role of pathogenic heat and exogenous factors (such as dust exposure and hot, humid climate) in the disease mechanism. "Lung qi deficiency" ranked second (27.60%). In addition, "Spleen qi deficiency with dampness retention" and "Kidney yang deficiency" had the lowest proportions, at 3.91% and 3.65%, respectively. Cases in which the syndrome could not be classified - special pattern accounted for 1.56%.

3.3. Correlation between clinical syndromes and occupational exposure.

Table 2. Association between the distribution of traditional medicine syndromes and occupational categories within the study population

TM Syndrome	Total (n=384)	Occupation				p-value
		Exposure to animals	Exposure to dust / chemicals	Exposure to char-coal /wood smoke	Other occupations	
Phlegm-turbidity obstructing the lung	62	8	6	6	43	0.336*
The lung meridian is constrained by heat	112	10	19	7	80	0.038*
Lung qi deficiency	106	7	4	6	89	0.022*
Spleen qi deficiency with dampness retention	15	2	2	2	9	0.346**
Kidney yang deficiency	14	2	1	0	11	0.795**
Qi stagnation with blood stasis	69	4	5	5	56	0.734*
Special pattern	6	2	1	1	2	0.055**

** Chi-square test; ** Fisher's exact test*

Comment: The "Lung meridian constrained by heat" and "Lung qi deficiency" syndromes showed statistically significant differences among occupational groups ($p < 0.05$). The four syndromes: Phlegm-turbidity obstructing Lung, Spleen qi deficiency with dampness retention, Kidney yang deficiency, Qi stagnation with blood stasis, and the special pattern showed no statistically significant differences among occupational groups ($p > 0.05$).

4. DISCUSSION

4.1. Characteristics of the Study Sample

In this study, the mean age of patients was 48.9 ± 14 years (range: 18–87 years). The 45–59 age group had the highest proportion (32.29%), while the 18–30 age group had the lowest proportion (8.59%), indicating that the disease is less common among younger individuals. This result differs from that of Do Hoang Quoc Chinh (2024) [5], who reported a mean age of 37.8 ± 10.6 years. According to modern medicine, middle-aged individuals experience a decline in immune function and respiratory capacity, leading to retention of nasal secretions and creating favorable conditions for bacterial growth. From the perspective of traditional medicine, aging results in the decline of the Lung, Spleen, and Kidney functions, as well as a reduction in defensive qi, making individuals more susceptible to invasion by wind, cold, and dampness. Yin–blood deficiency can generate internal heat, deplete body fluids, dry the nasal mucosa, and prolong inflammation [3]. The proportion of female patients was higher than that of male patients, in contrast to some previous studies. Regarding occupation, the "other occupations" group (including office workers, laborers, students, homemakers, etc.) accounted for 75.26%, which is three times the combined proportion of those exposed to animals, dust, or charcoal/wood smoke.

4.2. Prevalence of Traditional Medicine Syndromes in the Study Sample

The study identified six common Traditional Medicine (TM) syndromes in patients with chronic rhinosinusitis, with the most prevalent being Lung meridian constrained by heat (29.17%) and Lung qi deficiency (27.60%), followed by Qi stagnation with blood stasis (17.97%) and Phlegm-turbidity obstructing Lung (16.15%). Less common syndromes included Spleen qi deficiency with dampness retention (3.91%) and Kidney yang deficiency (3.65%). In addition, 1.56% of cases could not be classified into any syndrome. Most patients presented with a single syndrome (85.94%), while 12.5% had multiple coexisting syndromes. These findings are partly consistent with the study by Nguyen Thi Kim Phuong and Nguyen Thi Bay (2001) [6], which reported high proportions of excess patterns such as wind-heat and

Qi stagnation with blood stasis, reflecting an acute or recurrent nature. In contrast, Yue Linjie (2019) [7] found Spleen qi deficiency as the predominant syndrome (48.3%), which differs markedly from the low proportion observed in the present study, likely attributable to differences in geography, patient constitution, and classification criteria.

Syndrome classification in this study was based on nasal–sinus symptoms combined with findings on the tongue and pulse (>50%) to ensure specificity. However, many patients presented with overlapping features due to the physiological interconnections between the Lung, Spleen, and Kidney, as well as the interaction between upright qi and pathogenic qi, which complicates diagnosis and necessitates standardized classification tools. Furthermore, the 1.56% of unclassified cases were attributed to the absence of apparent symptoms, potentially masked by prior modern medical treatment. This highlights the differences in diagnostic approaches between TM and modern medicine and underscores the importance of clinical studies that cross-reference both medical systems. Analyzing TM syndromes, both single and combined, is valuable for diagnosing and treating chronic rhinosinusitis.

4.3. Association Between Traditional Medicine Syndromes and Occupation

The study results showed a statistically significant association between occupation and the syndromes Lung meridian constrained by heat ($p = 0.038$) and Lung qi deficiency ($p = 0.022$). Approximately 25% of patients had a history of exposure to external pathogenic factors such as dust, chemicals, animals, or charcoal/wood smoke - agents that can easily invade the Lung through the nasal–sinus route, generating heat, accumulating phlegm, and impairing Lung qi. These findings are consistent with international studies by Wen-Xiang Gao (2016) [9] and Feras M. Alkholaiwi (2022) [10], which confirmed that occupational exposure to polluted environments is an independent risk factor for chronic rhinosinusitis (CRS), while also reinforcing the Traditional Medicine (TM) perspective on the role of external pathogens in disease mechanisms.

Today, the proportion of workers with prolonged exposure to polluted environments is increasing, especially among factory workers, construction laborers, individuals working in areas with heavy traffic, and livestock or poultry farmers. In TM theory, these factors correspond to wind, heat, dryness, or dampness pathogens that invade the Lung via the nose, gradually depleting upright qi, impairing qi transformation, leading to phlegm-turbidity accumulation, and obstructing the flow of blood vessels. From a modern medicine perspective, delicate particulate matter, chemicals, and microbial pollutants cause chronic inflammation of the nasal-sinus mucosa, disrupting ciliary function and immune barrier integrity. This theoretical concordance between TM and modern medicine highlights the potential for integrating both systems in the prevention, diagnosis, and treatment of CRS. Identifying TM syndromes in relation to occupation enables risk stratification and individualized treatment: for workers exposed to dust and chemicals, priority should be given to therapeutic measures that clear heat, detoxify, resolve phlegm, and tonify Lung qi, alongside workplace interventions to reduce exposure

4.4. Study Limitations

This study has several limitations. First, the lack of comparative literature and the classification based solely on single syndromes may not fully capture the multi-syndrome complexity of Traditional Medicine (TM). Second, sampling error and the grouping of diverse occupations into broad categories (e.g., the “other occupations” group, which included “manual labor,” “agriculture,” and “office work”) may have obscured differences in workplace environments and levels of exposure to risk factors, potentially obscuring the true associations. Third, the study did not analyze syndrome interactions or their relationship with disease severity and treatment response. Furthermore, the cross-sectional design does not allow for assessment of changes in syndromes over time. Lastly, the short study duration and the single healthcare facility limit both the representativeness of the sample and the generalizability of the findings.

5. CONCLUSION

Among 384 patients with chronic rhinosinusitis, six syndromes and one special pattern were identified. The most common was Lung meridian constrained by heat, followed by Lung qi deficiency, and Qi stagnation with blood stasis in third place. The syndromes Spleen qi deficiency with dampness retention and Kidney yang deficiency had the lowest prevalence.

ACKNOWLEDGMENTS

We want to express our sincere gratitude to the Faculty of Traditional Medicine at the University of Medicine and Pharmacy at Ho Chi Minh City and Le Van Thinh Hospital for their support and dedicated assistance throughout the completion of this study.

REFERENCES

[1] Pham Khanh Hoa. Otorhinolaryngology. Ministry of Health; 2010: 64-72.

[2] 刘蓬. 中医耳鼻咽喉科学 [M]. 第4版. 北京: 中国中医药出版社, 2016: 35, 111-112.

[3] Rudmik L, Smith TL. Quality of Life in Patients with Chronic Rhinosinusitis. Curr Allergy Asthma Rep. 2011;11(3):247–252.

[4] Nguyen Thi Bay, Nguyen Thai Linh. Otorhinolaryn-

gology in Traditional Medicine. Ho Chi Minh City Medical Publishing House; 2024: 60-76.

[5] [5] Do Hoang Quoc Chinh, Nguyen Thi Khanh Van. Clinical characteristics of chronic rhinosinusitis in adults at the National Otorhinolaryngology Hospital of Vietnam. Vietnam Medical Journal. 2024;539(1B).

[6] [6] Nguyen Thi Bay, Nguyen Thi Kim Phuong. Identification of clinical patterns of anterior group rhinosinusitis patients according to Traditional Medicine. Master's Thesis in Traditional Medicine. University of Medicine and Pharmacy at Ho Chi Minh City, 2001.

[7] 岳琳杰，苗明三，白明．基于中西医 临 床病 证特点的慢性鼻窦炎动物模型分析[J/OL].中药药理与临床. https://doi.org/10.13412/j.cnki.zyyl.20230320.001.

[8] Ference EH, Tan BK, Hulse KE, et al. Commentary on gender differences in prevalence, treatment, and quality of life of patients with chronic rhinosinusitis. Allergy Rhinol. 2015;6(2):e82–e88.

[9] Gao W-X, Ou C-Q, Fang S-B, et al. Occupational and environmental risk factors for chronic rhinosinusitis in China: a multicentre cross-sectional study. Respir Res. 2016;17:54.

[10] Alkholaiwi FM, Almutairi RR, Alrajhi DM, et al. Occupational and environmental exposures are associated with chronic sinusitis. Saudi Med J. 2022;43(2):125–131.