ANXIETY AND QI STAGNATION CHARACTERISTICS BASED ON TRADITIONAL MEDICINE IN MEDICAL STUDENTS

Phan Minh Duc[1], Nguyen Thi Ngoc Huyen[1]
Vu Thi Thuy Linh[2], Le Dinh Khiet[3] and Vu Ha My[1,✉]
[1]VNU University of Medicine and Pharmacy
[2]Dai Nam University
[3]TueTinh Institute of Medical and Pharmaceutical Research

This cross-sectional study investigated the prevalence of anxiety and its association with Qi stagnation constitution among medical students at VNU University of Medicine and Pharmacy. Using the Zung Self-Rating Anxiety Scale (SAS) and the Constitution in Chinese Medicine Questionnaire (CCMQ), 263 students were assessed. The prevalence of anxiety (SAS > 40) was 30.04%, mostly mild. Qi stagnation or a tendency toward Qi stagnation was present in 61.6% of students and was more frequent among those with anxiety (70.89%). In multivariable logistic regression, Qi stagnation was independently associated with higher odds of anxiety (aOR = 8.61; 95% CI: 3.56 – 20.82; p < 0.001). Two protective factors were identified: engaging in physical activity more than twice per week (aOR = 0.45; 95% CI: 0.24 – 0.83; p = 0.010) and regular communication/sharing with family members (aOR = 0.50; 95% CI: 0.25 – 0.99; p = 0.046). Financial difficulty was associated with increased odds of anxiety (aOR = 1.99; 95% CI: 1.07 – 3.68; p = 0.029). These findings support the relevance of considering Traditional Medicine constitution in student mental-health screening and suggest that integrating constitution-oriented and modern approaches may be promising for future prevention and support programs.

Keywords: Anxiety, medical students, Qi stagnation constitution, Traditional Medicine, Zung (SAS).

I. INTRODUCTION

Anxiety represent a significant mental health issue, affecting approximately 4.05% of the global population (equivalent to 301 million individuals), with a more than 55% increase in prevalence between 1990 and 2019. This trend reflects a continuous rise and a substantial contribution to the global burden of disease.[1] Among medical students, a population uniquely exposed to academic and social stressors, the global prevalence of anxiety has been estimated at 33.8% according to a meta-analysis.[2] In Vietnam, studies on anxiety among medical students have reported a wide range of prevalence from 28.1% to 77.7% depending on study context and methodology.[3,4] Several associated factors have been identified in this population, including individual vulnerability, financial difficulty, personality traits, academic pressure, family history, and social relationships.[2,3,5,6]

In Traditional Medicine (TM), body constitution is regarded as a fundamental concept reflecting the coordination between physiological functions, physical morphology, and psychological state.[7-9] Constitution affects emotions, behaviors, and responses to pathogenic factors, thereby explaining differences in disease risk and manifestations among individuals. Qi is considered a vital element in sustaining life and regulating mental

Corresponding author: Vu Ha My
VNU University of Medicine and Pharmacy
Email: hamyvu96@gmail.com
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activity according to TM theory. The movement of Qi in the body follows specific principles, and when disrupted or blocked, it can lead to Qi stagnation or constraint, impairing physiological functions and potentially contributing to disease onset.[10] Obstructed Qi flow (referred to as Qi stagnation or constraint) may cause disharmony in the internal organ systems and result in emotional and psychological disturbances.

Although previous studies have reported associations between Qi stagnation constitution and conditions such as depression or fatigue among university students,[11,12] no research to date has examined its relationship with anxiety. In the current context of integrating Traditional and Modern Medicine in disease diagnosis, prevention, and treatment, this study was conducted to determine the prevalence of anxiety using the Zung Self-Rating Anxiety Scale (SAS) and to investigate the association between Qi stagnation constitution and anxiety symptoms among students at the VNU University of Medicine and Pharmacy.

II. MATERIALS AND METHODS

1. Subjects

The study population consisted of undergraduate students enrolled at the VNU University of Medicine and Pharmacy.

Inclusion criteria

Students who were actively attending in-person classes at the university and voluntarily agreed to participate in the study.

Exclusion criteria

Students who had taken academic leave or submitted incomplete responses in the survey form.

2. Methods

Study Design

Cross-sectional descriptive study.

Study period

From December 2024 to May 2025.

Study location

Vietnam National University - University of Medicine and Pharmacy.

Sample Size

The sample size was calculated using the formula for estimating a population proportion:

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

n: Required sample size.

p: The estimated prevalence of anxiety was set at 30%, based on the study by Le Thi Vu Huyen.[3]

$Z_{1-\alpha/2}$: Standard normal deviate corresponding to the desired confidence level, with $\alpha = 0.05$, the 95% confidence level corresponds to $Z_{1-\alpha/2} = 1,96$.

Δ: Acceptable absolute margin of error, set at 0.05.

Using this formula, the minimum required sample size was calculated to be 225 students. The study involved 263 student participants.

Sampling Method

Convenience sampling was applied. Students who met the inclusion criteria were enrolled consecutively until the required sample size was achieved. Each student was included only once during the data collection period.

+ *Data Collection Tools and Technique:* Data were collected through an online self-administered structured questionnaire. Participants provided electronic informed consent before beginning the survey.

+ *Data Processing and analysis:* Data were entered and processed using Microsoft Excel and analyzed using SPSS software, version 26.0.

Study Variables

Clinical characteristics: Age, gender.

Anxiety status: Anxiety was assessed using the Zung (SAS), which consists of 20 self-

reported items with a total score ranging from 20 to 80. Anxiety levels were classified as follows: no anxiety (≤ 40), mild anxiety (41 – 50), moderate anxiety (51 – 60), severe anxiety (61 – 70), and very severe anxiety (71 – 80).[13] In this study, participants were categorized into two groups: those with anxiety (SAS > 40) and those without anxiety (SAS ≤ 40).

Psychosocial factors: Assessed variables included financial difficulty, academic retake, concern about graduation, physical activity > 2 sessions/week, communication with family, and experience of being bullied or socially isolated (all coded as Yes/No).

Qi stagnation constitution assessment: Qi stagnation constitution was evaluated using the Constitution in Chinese Medicine Questionnaire (CCMQ), developed by Professor Wang in 2005. The CCMQ comprises 60 items, with the Qi stagnation constitution determined by specific questions related to emotional and psychological states such as sadness, worry, chest fullness, and throat obstruction. Each item is rated on a 5-point Likert scale (never – rarely – sometimes – often – always). The score for each constitution type was standardized on a scale from 0 to 100 using the original scoring formula. Standardized score = (Total score − Number of items) / (Number of items × 4) Classification of Qi stagnation constitution: Qi stagnation constitution was classified as follows: "Having Qi stagnation" (standardized score ≥ 40), "Tendency toward Qi stagnation" (score between 30 and 39), and "No Qi stagnation" (score < 30).[9]

For the purpose of analysis in this study, participants were grouped into two categories: those with Qi stagnation or a tendency toward Qi stagnation (standardized score ≥ 30), and those without Qi stagnation (score < 30).

The CCMQ was translated into Vietnamese and demonstrated high reliability, with Cronbach's alpha coefficients ranging from 0.70 to 0.83 and test–retest stability ranging from 0.63 to 0.90 across constitution types.[9,14]

Statistical analysis

The association between Qi stagnation constitution and anxiety was assessed using multivariable logistic regression, adjusting for potential confounders such as gender and psychosocial factors.

3. Research ethics

All participants provided electronic informed consent prior to participation. Responses were anonymous, and all student information was kept strictly confidential and used solely for scientific purposes. Data were collected honestly and processed accurately.

III. RESULTS

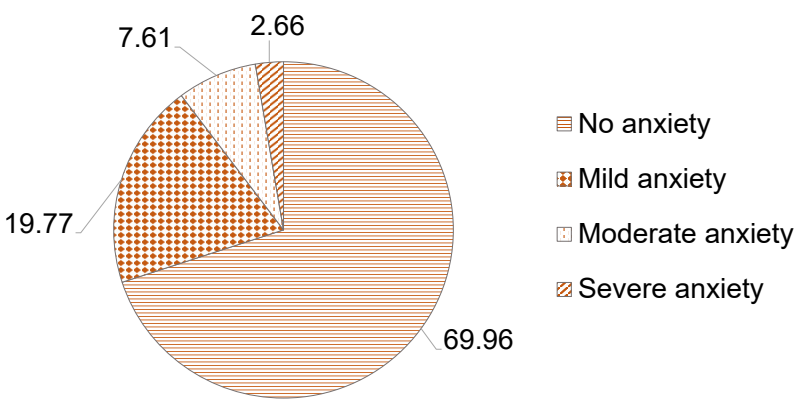

Chart 1. Proportion of students with anxiety based on Zung SAS

The proportion of students with anxiety was 30.04%, including 2.66% with severe anxiety. These findings highlight anxiety as a notable mental health issue among medical students, consistent with trends reported in international studies.

Table 1. Distribution of Qi Stagnation Constitution by Anxiety Level

Qi Stagnation Constitution	No anxiety (n = 184)	Mild anxiety (n = 52)	Moderate anxiety (n = 20)	Severe anxiety (n = 7)	Total (n = 263)
No Qi stagnation	94 (35.74%)	7 (2.66%)	0 (0%)	0 (0%)	101 (38.40)
Tendency/ Presence of Qi stagnation	90 (48.91)	45 (86.54)	20 (100)	7 (100)	162 (61.60)

Students with anxiety were more likely to exhibit a Qi stagnation or Qi stagnation-prone constitution. Notably, no case of moderate or severe anxiety was found among students without Qi stagnation. This distribution suggests a qualitative association between Qi stagnation and anxiety severity.

Table 2. Mean Scores of Qi Stagnation Characteristics

Characteristic	With Anxiety (Mean ± SD)	Without Anxiety (Mean ± SD)	p-value
Depression mood	3.35 ± 0.85	2.49 ± 0.95	< 0.001
Tension	3.44 ± 0.90	2.42 ± 0.94	< 0.001
Sensitivity	3.65 ± 1.08	2.74 ± 1.34	< 0.001
Easily frightened	3.18 ± 0.93	2.02 ± 0.88	< 0.001
Chest tightness	2.29 ± 1.03	1.52 ± 0.80	< 0.001
Frequent sighing	2.85 ± 1.10	2.44 ± 0.99	< 0.001
Throat obstruction	2.18 ± 1.06	1.63 ± 0.88	0.003

Students with anxiety had significantly higher mean scores ($p < 0.05$) across all Qi stagnation-related characteristics, including depressed mood, tension, sensitivity, fearfulness, chest tightness, frequent sighing, and throat obstruction. These results support the theoretical association between Qi stagnation constitution and anxiety manifestations from the perspective of Traditional Medicine.

Table 3. General Characteristics and Their Association with Anxiety

Characteristic	Total (n = 263)	With Anxiety (n,%) (n = 79)	Without Anxiety (n,%) (n = 184)	p-value
Age (mean ± SD)	20.69 ± 1.74	21.03 ± 1.81	20.54 ± 1.69	0.614
Male gender	76 (28.9)	23 (30.26)	53 (69.74)	0.96

Characteristic	Total (n = 263)	With Anxiety (n,%) (n = 79)	Without Anxiety (n,%) (n = 184)	p-value
Exercise	168 (63.88)	38 (22.62)	130 (77.38)	< 0.001
Financial difficulty	110 (41.83)	47 (42.73)	63 (57.27)	< 0.001
Exam/retake	23 (8.75)	8 (34.78)	15 (65.22)	0.603
Worry about graduation	240 (91.25)	73 (30.42)	167 (69.58)	0.665
Part-time job	99 (37.64)	28 (28.28)	71 (71.72)	0.63
Communication with family	204 (77.57)	45 (22.06)	159 (77.94)	< 0.001
Bullied/Isolated	35 (13.31)	12 (34.29)	23 (65.71)	0.56

Several psychosocial and behavioral factors differed significantly between students with and without anxiety, including physical activity, financial difficulties, and family communication ($p < 0.05$). Other factors such as gender, retaking exams, and part-time work did not show statistically significant differences.

Table 4. Multivariate Logistic Regression Results with Anxiety

Independent variable	OR (95% CI)	aOR (95% CI)	p-value
Qi stagnation	10.743 (4.69 - 24.59)	8.61 (3.56 - 20.82)	< 0.001
Male gender	1.015 (0.57 - 1.82)	0.66 (0.33 - 1.35)	0.257
Exercise > twice/week	0.385 (0.22 - 0.66)	0.45 (0.24 - 0.83)	0.010
Financial difficulty	2.82 (1.64 - 4.85)	1.99 (1.07 - 3.68)	0.029
Exam/retake	1.27 (0.52 - 3.13)	1.08 (0.37 - 3.13)	0.895
Worry about graduation	1.24 (0.47 - 3.27)	1.182 (0.38 - 3.71)	0.774
Part-time job	0.874 (0.51 - 1.51)	0.97 (0.51 - 1.82)	0.917
Sharing with family	0.208 (0.11 - 0.39)	0.498 (0.25 - 0.99)	0.046
Bullied/Isolated	1.25 (0.59 - 2.66)	0.73 (0.31 - 1.72)	0.47

After adjusting for potential confounders, Qi stagnation constitution remained an independent and strong predictor of anxiety (aOR = 8.61; 95% CI: 3.56 – 20.82; $p < 0.001$). Additionally, regular physical activity and family communication showed protective associations. Other variables, including gender, exam retakes, graduation concerns, and part-time jobs, were not significantly associated with anxiety.

IV. DISCUSSION

According to our findings, the prevalence of anxiety among students at the VNU University of Medicine and Pharmacy was 30.04%, with the majority of cases classified as mild (19.77%).

This result is consistent with report from Le Thi Vu Huyen (2024), and aligns closely with the global average of 33.8% reported in a meta-analysis among medical students.[2,3] However, it is lower than the prevalence reported by Vu Thai Phuong Nam (2022) at the same institution, which may be attributed to the timing of that study during the 2021 – 2022 academic year when Vietnam was still experiencing significant impacts from the COVID-19 pandemic, a factor that may have negatively affected students' mental health.[15]

Physical activity is widely recognized as a protective factor for mental well-being. Our data show that students who engaged in physical activity more than twice per week had a 55% lower odd of experiencing anxiety compared to those who exercised less frequently (aOR = 0.45; 95% CI: 0.24 – 0.83; p = 0.010). This finding is supported by Anderson Elizabeth et al., who reported that adults engaging in regular physical activity exhibited fewer symptoms of depression and anxiety and advocated for exercise as a protective factor against the development of mental health disorders.[6] Financial difficulty was associated with a higher likelihood of anxiety disorders (aOR = 1.99; 95% CI: 1.07–3.68; p = 0.029), whereas regular communication and sharing with family members acted as a protective factor, reducing the odds of anxiety by approximately 50% (aOR = 0.50; 95% CI: 0.25 – 0.99; p = 0.046). These associations are consistent with previously reported findings.[2,5]

Anxiety are characterized by excessive, prolonged, and difficult-to-control worry that typically persists for months. Anxiety symptoms may appear as normal physiological responses to stress, as features of certain personality traits, or in association with other psychiatric conditions. In our sample, among the 79 students with anxiety, the proportion of those with Qi stagnation constitution reached 70.89%, higher than the non-anxiety group (48.91%). Mean scores for hypersensitivity, irritability, tension, and fearfulness were significantly higher in the anxiety group compared to the non-anxiety group (all $p < 0.01$).

A recent study by Yang et al. (2025) investigated the relationship between traditional medicine constitutions and mental health status among 2,441 participants, including 251 individuals with psychiatric symptoms (e.g., anxiety, obsessive-compulsive disorder, depression). The findings showed that Qi stagnation constitution accounted for only 4.3% in the healthy group but up to 31.9% in the symptomatic group, the highest proportion among the nine constitution types, with a statistically significant difference ($p < 0.001$). Although the proportion reported by Yang et al. was lower than in our study, both results confirm the higher prevalence of Qi stagnation among individuals with neuropsychiatric conditions.[11]

In our study, the mean scores of Qi stagnation symptoms also differed markedly between groups. Specifically, hypersensitivity (mean 3.65 ± 1.08) and tension (mean 3.44 ± 0.90) were the highest-scoring symptoms in the anxiety group, with $p < 0.001$ for all indicators. This reflects a notable parallel between Traditional and Modern Medicine, as anxiety, hypersensitivity, and tension are core indicators included in several clinical tools such as the Zung (SAS).

While no prior research has directly explored anxiety, multiple studies have linked Qi stagnation to depression, a closely related condition. A meta-analysis of 13 studies by Yap et al. (2022) confirmed this association across clinical and non-clinical populations.[16] Similarly, Liu et al. (2020) demonstrated a significant

positive association between Qi stagnation and depression among 1,200 female university students and suggested that this constitution type could serve as a predictive factor for depression within one year.[17]

Previous research has also confirmed associations between Qi stagnation constitution and psychiatric conditions, especially depression. For example, Vo Trong Tuan (2024) applied multivariable regression to demonstrate this relationship, while Wang Xinzhu (2024) reported a Pearson correlation coefficient of r = 0.618 between Qi stagnation and depression.[18,19] However, no prior study had specifically examined the association between anxiety and Qi stagnation constitution.

Furthermore, according to Wang Qi (2006), the Qi stagnation constitution is influenced by various factors, including congenital predisposition, emotional stress, and prolonged unmet psychological needs, leading to the development of distinct personality traits. Individuals with this constitution tend to be introverted but emotionally unstable, prone to sadness, worry, suspicion, and hypersensitivity.[9]

According to Traditional Medicine, Essence (Tinh), Qi (Khí), and Spirit (Thần) are the three fundamental elements that sustain life. When Qi becomes stagnant or constrained for a prolonged period, it may disrupt the regulation of the Spirit, leading to emotional imbalances.[10] When Essence and Qi are abundant and flowing harmoniously, the Spirit is well nourished, resulting in emotional stability. In contrast, deficiency or dysfunction of Essence and Qi may lead to various psychological disturbances such as anxiety, depression, and impaired concentration. Qi stagnation constitution, although not equivalent to a clinical disease state, reflects a form of internal imbalance. It may significantly increase susceptibility to certain conditions, particularly psychological disorders, and can influence treatment outcomes and prognosis. Individuals with a Qi stagnation constitution, often emotionally sensitive, introverted, and mentally vulnerable, are more likely to experience prolonged stress, which in turn further impairs the dynamic balance among Essence, Qi, and Spirit, ultimately affecting both mental and physical health.[10,20] The classic medical text Danxi's Mastery of Medicine emphasizes: "When Qi and Blood are in harmony, there is no disease; when there is stagnation and constraint, illness arises." This principle underscores the close relationship between Qi stagnation constitution and emotional disorders, particularly anxiety and depression.[10]

Study limitations

This study was conducted through an online survey distributed to students, which may have resulted in imbalanced participation across academic years and faculties. Furthermore, some respondents may have completed the survey hastily or without sufficient attention, potentially compromising data reliability. In addition, the concept of Traditional Medicine constitution is relatively unfamiliar to students outside of the Traditional Medicine major, which could influence the accuracy of responses. To address these limitations, the research team selected a validated and culturally adapted version of the Traditional Medicine questionnaire that has been standardized for use in Vietnam. Detailed instructions were provided at the beginning of the survey, including an explanation of its purpose and the importance of answering truthfully and carefully. Moreover, to enhance response reliability, the questionnaire was designed with reverse-worded items interspersed throughout, enabling internal consistency

checks for each respondent's answers. Given the cross-sectional design and self-reported measures, causal inference is not possible and misclassification is possible around the SAS cut-off. Convenience sampling from a single university may limit generalizability. Residual confounding cannot be ruled out.

V. CONCLUSION

The study found that the prevalence of anxiety among students at the VNU University of Medicine and Pharmacy was 30.04%, with the majority of cases classified as mild. Qi stagnation constitution, as defined by Traditional Medicine, was significantly and independently associated with anxiety. Students with Qi stagnation or a tendency toward Qi stagnation had 8.6 times higher odds of anxiety compared to those without this constitution. In multivariable analysis, engaging in physical activity more than twice per week and regular communication with family showed protective associations, whereas financial difficulty was associated with higher odds of anxiety.

These findings highlight the importance of considering Traditional Medicine constitution in student mental health. Integrating constitution-based interventions with modern approaches may help reduce anxiety and provide a valuable framework for preventive strategies. Moreover, epidemiological research on body constitution contributes both to practical applications in student care and to strengthening the academic foundation of Traditional Medicine.

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