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THE PREVALENCE OF ANXIETY DISORDERS IN CARDIOVASCULAR PATIENTS IN SOC SON DISTRICT, HANOI IN 2023

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ABSTRACT

Objective: This study aimed to describe the prevalence of anxiety disorders among patients with cardiovascular diseases in Soc Son District, Hanoi, in 2023.

Methods: A cross-sectional study was conducted on 418 patients diagnosed with cardiovascular diseases who attended seven commune health stations in Soc Son District from June to July 2023. Anxiety symptoms were assessed using the DASS-21 scale.

Results: The prevalence of anxiety symptoms was 32.1%, with 35.1% classified as mild, 44.8% moderate, 14.9% severe, and 5.2% extremely severe. Common physical manifestations included dry mouth (11.5%), noticeable heartbeat (9.8%), and excessive sweating (9.6%).

Conclusion: Anxiety disorders are common among patients with cardiovascular diseases at the primary healthcare level. Early screening and appropriate interventions are crucial for improving treatment outcomes and enhancing patients' quality of life.

Keywords: Anxiety disorders; Cardiovascular diseases; Soc Son district.

1. INTRODUCTION

Cardiovascular diseases (CVDs) represent a global health issue, encompassing a range of disorders affecting the heart and blood vessels, such as coronary artery disease, stroke, and hypertension... [1]. CVDs are the leading cause of mortality worldwide. In Vietnam, non-communicable diseases account for 70% of all deaths, with approximately 200,000 deaths annually attributed to cardiovascular diseases, representing 25% of total national mortality [2]. In addition to physical symptoms such as chest pain and shortness of breath, patients with cardiovascular diseases often exhibit signs of mental health disorders. After receiving a diagnosis of cardiovascular disease, patients may experience depression, anxiety, or post-traumatic stress, which can subsequently contribute to the development of heart failure, stroke, or myocardial infarction [3]. Among cardiovascular patients, anxiety disorders may exacerbate the condition by increasing heart rate, blood pressure, and triggering arrhythmias, thereby worsening the prognosis and reducing treatment effectiveness. Notably, there is considerable symptom overlap between anxiety and cardiovascular diseases, including chest pain, palpitations, tachycardia, dizziness, and nausea... [4]

A previous study reported that anxiety disorders were present in 26% of patients with cardiovascular diseases [4]. In a survey conducted by Nguyen Huy Ngoc and colleagues at Phu Tho General Hospital, 22.5% of cardiovascular patients exhibited symptoms of anxiety disorders, including 10.6% with mild anxiety, 8.8% with moderate anxiety, and 3.1% with severe anxiety [5]. Similarly,

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research by Tran Tuan Viet and associates on patients undergoing cardiac surgery at the Cardiovascular Surgery Department of Bach Mai Hospital found that up to 51% of patients experienced symptoms of severe anxiety disorders [6]. However, studies on anxiety disorders among cardiovascular patients receiving outpatient treatment at primary healthcare facilities remain limited. Therefore, we conducted this study to describe the prevalence of anxiety disorders among cardiovascular patients in Soc Son District, Hanoi, in 2023. The findings are expected to provide scientific evidence to inform the development of effective and timely intervention strategies.

2. METHODS

2.1. Study population

This study was conducted among patients diagnosed with cardiovascular diseases who attended routine outpatient visits at commune health stations in Soc Son District, Hanoi, Vietnam.

- *Inclusion criteria:* Patients who had been previously diagnosed with cardiovascular conditions (e.g., hypertension, heart failure) and were receiving outpatient treatment at the health station. Eligible patients were those attending periodic follow-up visits or medication refill appointments under the national health insurance scheme and were present at the time of data collection.

- *Exclusion criteria:* Patients with cognitive or communication impairments that interfered with questionnaire completion, as well as those who declined to participate in the study, were excluded from the analysis.

2.2. Study setting and duration

The study was conducted at seven commune health stations in Soc Son District, Hanoi, including Phu Cuong, Minh Phu, Hien Ninh, Tan Dan, Quang Tien, Minh Tri, and Thanh Xuan communes. The research period extended from June 2023 to May 2024, with data collection conducted between June and July 2023.

2.3. Study design

A cross-sectional descriptive study was employed.

Sample size and sampling method: A combination of probability and non-probability sampling techniques was used. First, simple random sampling was applied to select 7 out of 26 commune health stations and regional polyclinics in Soc Son District. Subsequently, all eligible patients with cardiovascular diseases who visited these seven selected commune health stations during the data collection period (June to July 2023) were included in the study. A total of 418 participants were ultimately recruited for the study.

Data collection instrument: The Depression Anxiety Stress Scale-21 (DASS-21) was utilized to assess anxiety symptoms. The anxiety subscale consists of 7 items, each rated on a 4-point Likert scale from 0 ("Did not apply to me at all") to 3 ("Applied to me very much or most of the time"). The total score for the seven anxiety items was doubled and interpreted according to standardized severity cutoffs.

Level severity	Anxiety
Normal	0-7
Mild	8-9
Moderate	10-14
Severe	15-19
Extremely severe	≥ 20

Data Collection Method: Data were collected through face-to-face interviews using the standardized DASS-21 questionnaire.

Step 1: A comprehensive list of 26 commune health stations and regional polyclinics in Soc Son District was compiled.

Step 2: Simple random sampling was performed by drawing lots to select seven communes for the study, based on the research team's resource capacity. The selected communes were Phu Cuong, Minh Phu, Hien Ninh, Tan Dan, Quang Tien, Minh Tri, and Thanh Xuan.

Step 3: Approval was obtained from the leadership of the Soc Son District Health Center and the selected commune health stations. Data collection was conducted among patients with cardiovascular disease visiting and receiving treatment at these seven stations from June to July 2023, using a pre-designed questionnaire.

Step 4: After each data collection session, questionnaires were reviewed for completeness, and incomplete responses were excluded.

Step 5: Data entry and cleaning were performed to ensure accuracy before analysis. 2.4. Variables and Study Indicators

- Sociodemographic variables: age group, ethnicity, religion

- Anxiety symptom variables: dry mouth, breathing disturbances, sweating, panic-related anxiety, apathy, awareness of heartbeat, and unexplained fear

- Study indicators: prevalence of anxiety disorders and severity levels of anxiety 2.5. Data Analysis

Data were initially entered into Epidata version 3.0 and then exported to SPSS version 20.0 for analysis. Descriptive statistical methods were applied to generate frequency tables on general information and anxiety symptoms, pie charts illustrating anxiety prevalence, and bar charts depicting anxiety severity levels

2.6. Research Ethics

The study received approval from the leadership of the Soc Son District Health Center and the involved commune health stations. Participants were fully informed about the study objectives and were free to withdraw at any time. All participant information was treated confidentially and used solely for research purposes.

3. RESULTS

Table 1. General Characteristics of Study Participants (n=418)

Characteristic	Frequency	Percentage (%)
Age group		
≤ 45 years	14	3,3
46 - 60 years	125	29,9
> 60 years	279	66,8
Ethnicity		
Kinh	376	90
Others	42	10
Religion		
None	383	91,6
Yes	35	8,4

The results presented in the table indicate that the majority of study participants (66.8%) were aged 60 years or older. Additionally, the data show that most participants belonged to the Kinh ethnic group (90%) and the vast majority reported no religious affiliation (91.6%).

Table 2. Anxiety symptoms among study participants (n=418)

Symptoms		
Did not apply to me at all (n,%)	Applied to me to some degree (n,%)	Applied to me to a considerable degree (n,%)
I was aware of the dryness of my mouth.		
221 (52,9%)	149 (35,6%)	48 (11,5%)
I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion).		
262 (62,7%)	129 (30,9%)	27 (6,5%)
I experienced trembling (e.g., in the hands).		
219 (52,4%)	159 (38,0%)	40 (9,6%)
I was worried about situations in which I might panic and make a fool of myself.		
343 (82,1%)	73 (17,5%)	2 (0,5%)
I felt I was close to panic.		
364 (87,1%)	42 (10,0%)	12 (2,9%)
I was aware of the beating of my heart in the absence of physical exertion (e.g., a sense of increased heart rate, a missed heartbeat).		
272 (65,1%)	105 (25,1%)	41 (9,8%)
I felt scared for no good reason.		
325 (77,8%)	86 (20,6%)	7 (1,7%)

The results indicate that 1.7% of the study participants reported experiencing fear without reason; 11.5% reported dryness of mouth; 9.8% were aware of their heartbeat despite no physical exertion; 2.9% felt close to panic; 0.5% were anxious about situations where they might panic or be ridiculed; 9.6% experienced excessive sweating; and 6.5% reported breathing difficulties.

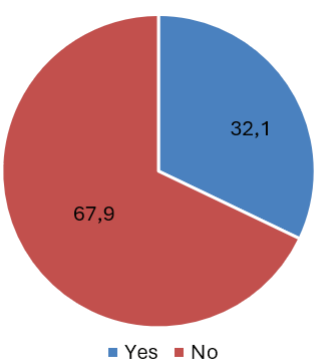

Figure 1. Prevalence of anxiety symptoms among study participants (n=418)

The analysis results indicate that 32.1%, corresponding to 134 participants, exhibited symptoms of anxiety ranging from mild to extremely severe

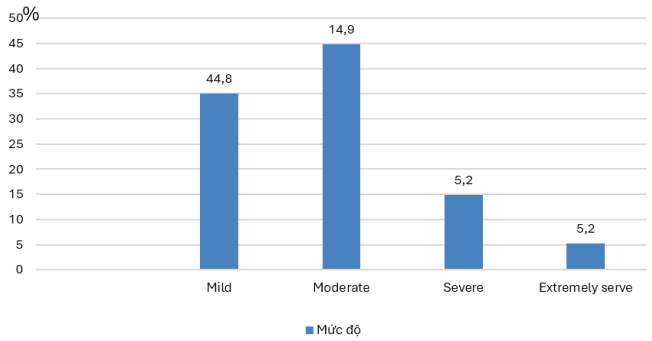

Figure 2. Severity levels of anxiety among study participants with anxiety symptoms (n=134)

Among the 134 participants exhibiting anxiety symptoms, 35.1% presented with mild anxiety, while moderate anxiety accounted for 44.8%. Severe and extremely severe anxiety were observed in 14.9% and 5.2% of the participants, respectively.

4. DISCUSSION

Our study results showed that anxiety disorders represent a significant mental health concern among cardiovascular patients, warranting attention to improve treatment outcomes. We observed that 32.1% of the study participants exhibited symptoms of anxiety, ranging from mild to extremely severe.

Based on the symptom prevalence data from our study, physical manifestations such as dry mouth, respiratory irregularities, and sweating accounted for a substantial proportion among patients with cardiovascular disease. Specifically, 11.5% of patients reported pronounced dry mouth, 6.5% experienced respiratory disturbances (such as shortness of breath or rapid breathing without exertion), and 9.6% had notable sweating. These symptoms likely reflect sympathetic nervous system activation during anxiety episodes [7]. However, the prevalence of panic symptoms (2.9%) and anxiety related to feared situations (1.7%) was relatively low, suggesting that severe anxiety is less common in this patient group. Such presentations are commonly observed in patients with cardiovascular disease, potentially related to beta-blocker or diuretic therapy. Prolonged symptoms may negatively impact the sympathetic nervous system, increasing the risk of cardiovascular events and hindering post-treatment recovery [7].

In our outpatient study of 418 cardiovascular patients attending primary healthcare centers, 32.1% were identified with anxiety symptoms. This prevalence aligns with previous literature, indicating that anxiety is a common but often underrecognized issue in cardiovascular care. Among those with anxiety symptoms, 35.1% had mild anxiety, 44.8% moderate anxiety, and 14.9% and 5.2% exhibited severe and very severe anxiety, respectively. These findings suggest that the majority of patients experience mild to moderate anxiety, although the severe categories cannot be overlooked due to their association with adverse cardiovascular outcomes. Our prevalence is higher than that reported by Nguyen Huy Ngoc et al., who found a 22.5% anxiety rate among 160 outpatient cardiovascular patients at Phu Tho General Hospital, with mild, moderate, and severe anxiety rates of 10.6%, 8.8%, and 3.1%, respectively [5]. Conversely, Tran Tuan Viet et al. reported a higher prevalence (51%) of severe anxiety

symptoms among 100 post-cardiac surgery patients at Bach Mai Hospital using the GAD-7 screening tool [6]. The difference in the prevalence of anxiety disorders between our study and other studies may be attributed to several factors, including characteristics of the study population, location, timing, and assessment tools. In our study, the prevalence of anxiety disorders was 32.1%, which was higher than that reported by Nguyen Huy Ngoc et al [5]. (22.5%). This discrepancy may be due to differences in sample size and population characteristics: our study included 418 patients recruited from primary healthcare stations, where a diverse range of cardiovascular patients with varying disease severities are managed.

Whereas the study conducted at Phu Tho Provincial General Hospital surveyed only 160 patients, who may have been more selectively included based on their clinical status and access to medical care

In contrast, the prevalence of anxiety disorders in our study was significantly lower than that reported by Tran Tuan Viet et al [6]. (51%). Notable differences in the clinical characteristics of the study populations may explain this discrepancy. While our study assessed cardiovascular patients receiving outpatient care in general, the survey by Tran Tuan Viet focused on post-cardiac surgery patients—a group with more severe disease conditions, greater risk of complications, psychological distress, and a higher likelihood of developing anxiety disorders. Additionally, the screening instruments differed: our study employed the DASS-21 scale, whereas Tran Tuan Viet [6] and Nguyen Huy Ngoc [5] used the GAD-7, which places greater emphasis on generalized anxiety symptoms and may be more sensitive in detecting moderate to severe anxiety.

The prevalence of anxiety disorders in our study (32.1%) was higher than the global average reported in a systematic review and meta-analysis of 93 studies involving 36,687 outpatients with cardiovascular disease, which indicated a global anxiety prevalence of 28.9% [8]. This discrepancy may be attributed to several factors. First, our study was conducted at primary healthcare stations, where psychological support services may be limited or routine anxiety screening programs may not yet be implemented, potentially leading to higher detection rates when systematic assessment is conducted. Second, differences in population characteristics, socioeconomic factors, disease burden, and access to healthcare services may also contribute to varying anxiety levels. Moreover, variations in screening tools and diagnostic criteria among studies represent another critical factor. Our study utilized the DASS-21 scale, whereas the studies included in the meta-analysis employed a range of instruments, from self-report questionnaires to standardized clinical interviews, which may result in differences in the detection of anxiety.

Based on the analysis mentioned above, anxiety disorder appears to be a prevalent yet underrecognized mental health issue among cardiovascular outpatients managed at the primary healthcare level. The notable prevalence of anxiety identified in our study, along with accompanying somatic symptoms, underscores the substantial impact of this condition on patients' overall health status and recovery potential. Comparison with previous studies indicates that variations in anxiety prevalence may be attributable to differences in population characteristics, disease severity, and assessment tools. Nevertheless, a consistent finding across studies is the detrimental influence of anxiety on clinical prognosis, including increased risk of mortality, cardiovascular-related hospitalizations, and impaired quality of life [9]. Therefore, systematic screening, early identification, and timely intervention for anxiety disorders in cardiovascular patients—particularly at the primary care level—are essential for improving health outcomes and minimizing adverse cardiovascular events.

5. CONCLUSION

Anxiety disorder is a noteworthy concern among cardiovascular patients at the primary healthcare level. Among 418 patients with cardiovascular diseases surveyed in Soc Son district, 32.1% exhibited symptoms of anxiety ranging from mild to extremely severe. While the majority of cases were classified as mild to moderate, a substantial proportion (20.1%) presented with severe to extremely severe anxiety, posing potential risks to prognosis and quality of life. These findings highlight the need for routine screening and early intervention for anxiety disorders in the management of cardiovascular diseases.

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