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Stress among clinical nurses and affecting factors at Military Hospital 120, Tien Giang Province, year 2023

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ABSTRACT

Objectives: This study aims to determine the degree of work-related stress among clinical nurses and analyze some factors affecting clinical nursing stress at Military Hospital 120, Tien Giang province, in 2023.

Methods: This study employed a cross-sectional design with quantitative and qualitative research. The quantitative research is conducted by surveying 159 clinical nurses using the validated DASS-21 scale. The qualitative study was conducted through 04 in-depth interviews and 1 focus group discussion with stakeholders to analyze the factors affecting nursing stress.

Results: 17.6% of clinical nurses suffered from stress, with breakdowns indicating 9.4% experiencing mild, 3.8% moderate, and 4.4% severe stress levels. Notably, departments such as the Emergency Department, Psychiatry, and Intensive Care exhibit higher rates of nurses displaying signs of stress. Factors such as elevated work pressure, unclear job assignments, and work instability were associated with negative impacts on stress levels. Conversely, the hospital's salary and welfare policies, as well as planning and staff development strategies, displayed positive influences on the stress experiences of clinical nurses.

Conclusions: Addressing the specific needs of female, elderly, and underprivileged nurses, particularly those in high-stress departments like Emergency, Intensive Care, and Psychiatry, is crucial. It is recommended that the hospital continues its initiatives related to salary and incentives, and staff planning while implementing tailored human resource strategies to optimize workforce allocation, clarify job roles, and organize work assignments logically and promptly.

Keywords: *Clinical nurses, hospital, mental health, stress.*

INTRODUCTION

Stress is a prevalent mental health issue among members of the medical profession, particularly nurses, who are tasked with fulfilling intricate job responsibilities and facing high expectations, excessive duties, and limited authority (1,2). It has been observed that work-related stress not only poses significant health risks but also compromises nurses' capacity to manage job demands, consequently impeding the quality and effectiveness of healthcare provision (3,4).

Numerous studies conducted globally have employed the DASS 21 scale to assess stress levels, revealing a considerable prevalence of stress among nurses (5, 6). For example, research by Sharma Parul and colleagues (2014) in India indicated that up to 42% of nurses experience moderate to severe stress

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(5). Similarly, findings by author Yohannes Baye (2020) reported a work stress rate of 66.2% among nurses (6). Furthermore, a study carried out in Iran highlighted that 7.4% of nurses were absent weekly due to mental or physical exhaustion stemming from work-related issues, a rate 80% higher than in other professional cohorts (7). These studies identify various factors such as excessive workloads, inadequate preparation (e.g., lack of training), interpersonal dynamics with physicians, unsafe working conditions, and compensation policies as contributors to nurses' work-related stress (5-7).

Military Hospital 120, a level 2 general hospital operating under the purview of the Department of Logistics within Military Region 9, is tasked with assessing, administering emergency interventions, and providing medical care to military personnel and civilians residing in the Tien River area. This hospital boasts a bed capacity of 400 beds, 23 specialized faculties and departments, and a staff complement totaling 444 individuals, among whom 159 are dedicated nurses. The facility accommodates an average daily inpatient load of 490 patients, resulting in nurses attending to an average of 3.08 patients per day (8). Recent challenges faced by nurses, including patient overcrowding, inadequate staffing levels, mounting patient care demands, negative patient and family member behaviors, heightened administrative burdens, health insurance-related financial pressures, have collectively contributed to heightened levels of stress among nurses, precipitating an uptick in resignation rates (8). To systematically identify stressors, propose stress mitigation strategies, enhance care quality, and ensure patient well-being, this study aims to determine the degree of work-related stress among clinical nurses and analyze some factors affecting clinical nursing stress at Military Hospital 120, Tien Giang province, in 2023.

METHODS

Research design: A cross-sectional study that combines qualitative and quantitative methods, where the quantitative phase was conducted first to assess the stress levels of clinic nurses and the qualitative phase was carried out afterwards to further explain the factors influencing the current state of stress of nurses.

Study Subjects

- Quantitative component: clinical nurses working at least 9 months at the clinical departments of Military Hospital 120, Logistics Department - Military Region 9. Excluded participants: nurses who went to long-term school or taken a leave of absence.

- Qualitative component: Hospital leader, head of the nursing department, clinical nurses, representative of the trade union executive committee, and staff at the social work division.

Study site and time: the research was conducted from August 2022 to March 2023, at Military Hospital 120, Tien Giang Province, Vietnam.

Sample size and sampling method

- Quantitative research: Selecting all 159 clinical nurses at the Hospital.

- Qualitative research: using the proposed sampling method. Conducting 04 in-depth interviews (IDIs) (including 01 hospital leader, 01 head of the nursing department, 01 representative of the trade union executive committee, and 01 staff at the social work division) and 01 focus group discussion (FGD) with 8 clinical nurses.

Research tools

- Quantitative research: including 3 parts: (1). General information of research subjects; (2). Nurses' assessment of work pressure, work

environment, workplace relationships, work organization and hospital incentive policies. (3). Stress scale contains 7 stress-related items in the DASS-21 (Depression, Anxiety and Stress Scale - 21 Items), including "I found it hard to wind down, I tended to over-react to situations, I felt that I was using a lot of nervous energy, I found myself getting agitated, I found it difficult to relax; I was intolerant of anything that kept me from getting on with what I was doing, and I felt that I was rather touchy. The rating scale is as: 0 - Did not apply to me at all; 1 - Applied to me to some degree, or some of the time; 2 - Applied to me to a considerable degree or a good part of the time; and 3 - Applied to me very much or most of the time. The total score then was multiplied by 2 to calculate the final score. The recommended cut-off final scores for conventional severity labels of stress are as follows: 0–14: Normal; 15-18: Mild; 19-25: Moderate; 26-33: Severe; and 34+: Extremely severe.

- Qualitative research: In-depth interview/ group discussion instructions are established as per main subjects including risk factors and protection factors to the stress situation of the clinical hospital (including individual factors, hospital factors, and policy/social factors, etc.).

Data collection and data analysis

- With the quantitative survey, descriptive analysis was applied to describe the stress levels of clinical nurses, and analytical statistics (Chi-square test) was used to determine statistical differences between groups with a significance level of 95%. All analyses were conducted using SPSS, version 20.

- Information processing analysis: Recordings of in-depth interviews/group discussions are converted into Word files and then encoded and analyzed by themes.

Ethical approval: The research is approved by the Research Ethics Committee of the Hanoi University of Public Health (Decision No. 446/2022/YTCC-HD3).

RESULTS

General information of participants

Table 1. Characteristics of the nurses involved in the research (n=159)

	Content	Frequency (n)	Percentage (%)
Age	<=40	138	86.8
	> 40	21	13.2
	Mean: 34.0; min: 24; max: 53		
Gender	Male	53	33.3
	Female	106	66.7
Marital status	Single	52	32.7
	Married	102	64.2
	Separated, divorced or widow	5	3.1
Number of children	Not yet	52	32.7
	1-2	102	64.2
	Over 2	5	3.1
Main income in the family	Yes	96	60.4
	No	63	39.6

	Content	Frequency (n)	Percentage (%)
Income	From 5 million and below	74	46.5
	Over 5 million	85	53.5
Working seniority	Below 10 years	74	46.5
	From 10 years and above	85	53.5
Type of labor	Out of payroll	19	11.9
	On payroll	140	88.1
Educational level	Vocational school or college	140	88.1
	Undergraduate	19	11.9

The study involved 159 clinical nurses from the hospital. Regarding participants' age demographics, the age range varied from 24 to 53 years, with an average age of 34.0 years. The predominant age group was 40 years and below, constituting 86.8% of the cohort. The female gender represented two-thirds of the total participants, totaling 66.7%. The majority of nurses were married with 1-2 children, comprising 64.2% of the sample. Additionally, 60.4% of nurses were identified as the main earners for their families. The average monthly income among participants at the hospital exceeded 5 million VND, making up 53.5% of the group, with the highest reported income reaching 15 million/month. Notably, a significant proportion of nurses (53.5%) had ten or more years of seniority. The majority held permanent positions and possessed intermediate or college-level educational qualifications, accounting for 88.1% of the cohort.

Stress among nurses

Table 2. Expression of stress among nurses (n=159)

Statement	Rating scale (n (%))			
	0	**1**	**2**	**3**
I found it hard to wind down	64 (40.3)	64 (40.3)	29 (18.1)	2 (1.3)
I tended to over-react to situations	105 (66.0)	45 (28.3)	9 (5.7)	0
I felt that I was using a lot of nervous energy	60 (37.7)	**80 (50.3)**	13 (8.2)	6 (3.8)
I found myself getting agitated	90 (56.6)	59 (37.1)	8 (5.0)	2 (1.3)
I found it difficult to relax	69 (43.4)	69 (43.4)	19 (11.9)	2 (1.3)
I was intolerant of anything that kept me from getting on with what I was doing	64 (40.3)	74 (46.5)	19 (11.9)	2 (1.3)
I felt that I was rather touchy	93 (58.5)	57 (35.8)	9 (5.7)	0

Note: 0 - Did not apply to me at all; 1 - Applied to me to some degree, or some of the time; 2 - Applied to me to a considerable degree or a good part of the time; and 3 - Applied to me very much or most of the time.

Table 2 presented findings illustrating the spectrum of responses among nurses regarding the absence of the seven stress-related indicators, with percentages ranging from 37.7% to 66.0%. Among the respondents,

those who provided partially accurate responses exhibited the highest frequency for the item "a lot of nervous energy" at 50.3%. In contrast, predominantly accurate responses were most prevalent for the category "difficult to relax" at 18.1%. Notably, responses categorized as entirely accurate were most pronounced for the expression "a lot of nervous energy," representing 3.8% of the total responses.

Table 3. Percentage of nurses suffering from stress by levels (n=159)

Variables	Frequency (n)	Percentage (%)
Normal	**131**	**82.4**
Stress	**28**	**17.6**
Mild	15	9.4
Moderate	6	3.8
Severe	7	4.4
Extremely severe	0	0

Table 3 results show that 17.6% of clinical nurses are stressed. In which, the rate of mild stress accounted for 9.4%, moderate stress accounted for 3.8%, and severe stress accounted for 4.4%.

Table 4. Percentage of nurses suffering from stress by departments

Department	Total number of nurses	Stress (n)	Percentage (%)
Emergency	19	12	63.2
Mentality	15	5	33.3
Resuscitation	20	5	25.0
General surgery	11	2	18.2
Cardiovascular medicine	7	1	14.3
General medicine	9	1	11.1
Traditional medicine	10	1	10.0
Blood filtration	20	1	5.0
Other*	48	0	0%

*Note: *: Includes departments: Neurosurgery, Trauma Surgery, Infectious Diseases, Gastroenterology - Endocrinology - Hematology, Specialty Surgery*

Table 4 displayed the prevalence of stress among nurses across various departments, revealing that the Emergency Department exhibited the highest percentage of nurses displaying signs of stress at 63.2%. Following this, the Psychiatric Department and Resuscitation Department reported percentages of 33.3% and 25.0%, respectively. Conversely, no nurses in the departments of Neurosurgery, Trauma Surgery, Infectious

Diseases, Gastroenterology-Endocrinology-Hematology, and Specialized Surgery manifested signs of stress.

Some factors affecting clinical nursing stress

Individual factors

Table 5. Association between individual factors and stress of clinical nurses (n=159)

Factor	Content	Stress status		OR (95%CI)	p
		Yes n (%)	No n (%)		
Gender	Male	6 (11.3)	47 (88.7)	0.48 (0.2 – 1.3)	0.14
	Female	22 (20.8)	84 (79.2)		
Marital status	Divorced, widow/single	09 (25.0)	27 (75.0)	1.8 (0.7-4.5)	0.19
	Married	19 (15.4)	104 (84.6)		
Children	Without children	12 (23.1)	40 (76.9)	1.7 (0.7-3.9)	0.21
	With children	16 (15.0)	91 (85.0)		
Working seniority	Below 10 years	17 (23.0)	57 (77.0)	2.0 (0.9-4.6)	0.09
	From 10 years and above	11 (12.9)	74 (87.1)		
Income	$\leq$ 5 million/month	15 (20.3)	59 (79.7)	1.4 (0.6- 3.2)	0.41
	> 5 million/month	13 (15.3)	72 (84.7)		

Quantitative analysis findings indicated a lack of statistically significant correlation between individual variables and nursing stress (p>0.05). However, qualitative insights suggested that older female nurses facing challenging family circumstances are particularly susceptible to stress.

"The older the nurses are, the lower their tolerance for work and pressure is because their health is not as good as that of younger people and long-term pressures that affect their health are not guaranteed." (Clinical nurses FGD).

"Women have weaker health than men, so heavy work such as carrying sick people and moving oxygen tanks is very difficult and their ability to endure pressure is lower than that of men. Female nurses at the hospital are mostly at an age with young children, work at the hospital and also have to take care of family work, so they often make mistakes and then get angry" (IDI 4).

"Economic conditions also affect the level of completion of nurses, for example, those who are in difficult circumstances are busy with many works, not only at the hospital, so it partly affects their work and thereby leads to stress" (Clinical nurses FGD).

Working/hospital factor

Table 6. Association between working/hospital factors and stress of clinical nurses (n=159)

Factor	Content	Stress		OR (95%CI)	P
		Yes n (%)	No n (%)		
Relationship with the senior	Not good	10 (17.5)	47 (82.5)	0.99 (0.4-2.3)	0.98
	Good	18 (17.6)	84 (82.4)		
Support by the senior	Not regular	14 (16.1)	73 (83.9)	0.8 (0.4-1.8)	0.58
	Regular	14 (19.4)	58 (80.6)		
Relationship with colleagues	Not good	11 (20.8)	42 (79.2)	1.4 (0.6-3.2)	0.46
	Good	17 (16.0)	89 (84.0)		
Number of patients cared per day	≥ 10	16 (15.1)	90 (84.9)	0.6 (0.2-1.4)	0.23
	< 10	12 (22.6)	41 (77.4)		
Overtime work	Yes	15 (14.2)	91 (85.8)	0.5 (0.2-1.2)	0.11
	No	13 (24.5)	40 (75.5)		
Work outside function and task	Yes	23 (19.8)	93 (80.2)	1.9 (0.7-5.3)	0.22
	No	5 (11.6)	38 (88.4)		
Work stress	Yes	23 (24.2)	72 (75.8)	9.7 (1.4-10.5)	**0.008**
	No	5 (7.8)	59 (92.2)		
Assignment by profession	Unsuitable	16 (19.3)	57 (80.7)	1.3 (0.6-2.9)	0.56
	Suitable	12 (15.8)	64 (84.2)		
Work clarity	Unclear	23 (25.0)	69 (75.0)	4.1 (1.5-11.5)	**0.004**
	Clear	5 (7.5)	62 (92.5)		
Work stability	Unstable	23 (23.5)	75 (76.5)	3.4 (1.2-9.6)	**0.01**
	Stable	5 (8.2)	56 (91.8)		
Fairness in labor achievement evaluation	Unfair	8 (27.6)	21 (72.4)	2.1 (0.8-5.4)	0.12
	Fair	20 (15.4)	110 (84.6)		
Learning opportunity	Many opportunities	23 (19.0)	98 (81.0)	1.5 (0.5-4.4)	0.41
	None/few opportunities	5 (13.2)	33 (86.8)		

The quantitative findings of this study indicated a significant correlation between various work-related factors - including work pressure, work clarity, and job stability - and the stress of clinical nurses, with statistical significance at p <0.05. Specifically,

clinical nurses facing high levels of work pressure, lacking clear work assignments, or experiencing instability in their work environment (e.g., frequent rotations between departments) are at substantially elevated risk of stress, with respective risk ratios of 9.7, 4.1, and 3.4 when compared to their counterparts. Other variables examined did not exhibit a statistically significant association with the stress of nurses.

Moreover, the qualitative analysis revealed several factors that positively influence stress reduction among nurses, such as the implementation of effective salary policies, provision of bonuses, availability of benefits, strategic staff planning, and the development policies adopted by the hospital.

"The current increase in income compared to the general average of hospitals is also slightly higher, especially on holidays such as: Traditional Tet, 30 April - 01 May, 02 September, etc. Such income also partly improves the lives of nurses. That makes nurses want to be committed and dedicated to their work, reducing stress with the hospital." (Clinical nurses FGD). This statement highlights the direct correlation between financial incentives and job satisfaction. The increased income, particularly during culturally significant holidays, not only improves the nurses' financial well-being but also enhances their overall morale and dedication to their roles, which are crucial for reducing stress.

"Hospital leaders have also made certain recognition of the achievements of units and individuals in the hospital over the past few years through rewarding collectives and excellent individuals. During staff meetings, comments were paid attention to and shared by hospital leaders." (IDI 03). This underscores the significance of recognition and validation in the workplace. Acknowledging achievements helps build a

positive organizational culture, fostering a sense of belonging and motivating nurses to excel in their roles, ultimately contributing to a reduction in occupational stress.

"The hospital always focuses on planning and staff development; creating conditions for nurses to improve their professional qualifications such as researching at college, university, and the hospital has a policy of fully supporting tuition fees for participating students." (IDI 01). This reflects the hospital's commitment to continuous improvement and career advancement for its staff. By investing in the professional growth of nurses, the hospital not only enhances the skills and expertise of its workforce but also demonstrates an investment in their futures, which can alleviate feelings of stagnation or burnout.

DISCUSSION

The research findings revealed that 17.6% of clinical nurses exhibit symptoms of stress. This rate is comparable to Nguyen Van Tuyen's study (2015) at Binh Dinh Provincial General Hospital, which reported an 18% prevalence (9), but lower than recent investigations in Vietnam, such as Duong Thanh Hiep's study (2014) at Nguyen Dinh Chieu Hospital, Ben Tre province, which identified a 56.9% prevalence (10), Bach Nguyen Ngoc's research (2015) at Gia Lai Provincial General Hospital with a 25.2% prevalence (11), and Trinh Xuan Quang's study in 2018 with a 21.5% prevalence (12). The observed variations may be attributed to the unique characteristics of the research setting: the Military Hospital falls under the Department of Logistics rather than the Ministry of Health, providing medical care to military officers, government officials, and other distinct populations who receive specialized training, potentially enhancing

their resilience to work-related pressures compared to staff in civilian hospitals.

Moreover, the research highlights varying stress levels among nurses across different clinical departments. Notably, departments with higher stress rates include the Emergency Department (63.2%), followed by Psychiatry (33.3%), and Intensive Care (25.0%). Conversely, departments like Neurosurgery, Trauma Surgery, Infectious Diseases, Gastroenterology - Endocrinology - Hematology, and Specialized Surgery reported no instances of stress among nurses. These findings align with global medical literature and emphasize the demanding nature of patient care in settings such as Emergency and Intensive Care, as well as the challenges posed by patients in the Psychiatric Department (1, 5-7). Consequently, targeted policies and interventions are needed to alleviate work pressures and provide support and motivation for nurses in high-stress departments.

While the quantitative analysis did not establish a significant relationship between personal factors and the stress status of clinical nurses, qualitative insights indicate that variables like age, gender, and family circumstances influence nurses' stress levels. Specifically, older age, female gender, and challenging family situations were associated with a higher stress risk compared to other groups. These observations align with existing research in Vietnam, such as studies by Trinh Xuan Quang (12), Nguyen Thi Huong (13), as well as international research (5-7). The results emphasize the importance for hospital leaders and unions to focus on supporting and encouraging older, female nurses facing difficult life circumstances, facilitating their resilience and well-being.

The findings of the quantitative research established a relationship between work pressure, clarity, and stability in the workplace, and the stress levels experienced by clinical nurses. This discovery resonates with previous studies conducted at Thai Binh Children's Hospital (2019) (14), by Nguyen Van Tuyen (9), and various international research endeavors (5-6, 15). Hospital leaders are therefore urged to address issues pertaining to balanced, transparent, and organized work allocation and assignment at an early stage to mitigate stress among clinical nurses.

Moreover, the study identifies certain hospital policy factors, including salary and welfare policies, as well as planning and staff development policies, that exhibit a positive influence on the stress levels of clinical nurses. These aspects should be sustained and further developed to promote a conducive work environment.

Nevertheless, the research is subject to several limitations concerning sample size and methodology. Firstly, the cross-sectional nature of the study solely captures the prevalence and job characteristics of nurses at a specific point in time, precluding the establishment of causal relationships. Furthermore, the research was restricted to Military Hospital 120, thus offering insights solely into the stress landscape within that unit and not necessarily reflective of other healthcare facilities. Limited resources and time constraints led to the exclusion of paraclinical and administrative sectors from the study. Additionally, the utilization of the DASS 21 Scale provided indicative screening outcomes rather than definitive pathological diagnoses.

CONCLUSION

The prevalence of stress among clinical nurses at the hospital stands at 17.6%, with breakdowns indicating 9.4% experiencing mild stress, 4.4% severe stress, and 3.8% moderate stress levels, while no cases reported

very severe stress. Notably, departments such as the Emergency Department (63.2%), Psychiatry (33.3%), and Intensive Care (25.0%) exhibit higher rates of nurses displaying signs of stress. Factors such as advanced age, female gender, challenging personal circumstances, elevated work pressure, unclear job assignments, and work instability were associated with negative impacts on stress levels. Conversely, the hospital's salary and welfare policies, as well as planning and staff development strategies, displayed positive influences on the stress experiences of clinical nurses.

Addressing the specific needs of female, elderly, and underprivileged nurses, particularly those in high-stress departments like Emergency, Intensive Care, and Psychiatry, is crucial. It is recommended that the hospital continues its initiatives related to salary and benefits, and staff planning while implementing tailored human resource strategies to optimize workforce allocation, clarify job roles, and organize work assignments logically and promptly.

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