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Final dissertation

**Causes of occupational stress of healthcare workers in
Vietnam: A literature review**

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ABSTRACT

Psychological stress among medical staff is a global problem, seriously affecting their health and quality of work. Studies have shown that medical staff are at high risk of stress largely from local objective factors, such as intense workload, time pressure and high responsibility, accompanied by factors related to the nature of their work such as exposure to illness, witnessing patients and family members experiencing physical and mental health crises. Recently, the research trend on occupational stress among healthcare workers has shifted to studying the impact and consequences of the COVID-19 epidemic on the mental health of healthcare workers. In Vietnam, there is not much research on occupational stress among physicians, and a large amount of existing research on this topic was conducted during the COVID-19 epidemic. In general, the COVID-19 pandemic has a significant impact on the mental health of doctors and nurses, consistent with the results of research abroad. This is a literature review of research from Vietnam as well as relevant foreign researchers, attempting to identify and categorize the causes of occupational stress in healthcare workers, during and outside the duration of COVID-19 pandemic.

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INTRODUCTION

Research indicates that compared to the general population, resident physicians may have greater levels of stress and depression related to their work. Stress-related anxiety and burnout affect a large percentage of doctors and medical students, which raises the risk of medical errors, increases absenteeism and disability, and decreases patient satisfaction.

This paper is a literature review on professional stress of healthcare workers. The scope of the paper covers a theoretical definition for stress and an overview of published studies of stress in physicians. The overview is then divided into three parts, the prevalence of physician stress, the impact of said stress on performance and mental health, and factors that affect stress levels. In each subcategory, literature from international as well as Vietnamese sources are chosen and analyzed.

Theoretical basis and definition of stress and professional stress

Concept of psychological stress

Before becoming a term used in everyday as well as in psychological contexts, the term “stress” was used by engineers to explain the forces that can cause strain on a structure. In 1936, Hans Selye borrowed the term “stress” from the field of engineering and studied stress as a syndrome that appears after an individual experiences painful stimuli. Over the years, Selye experimented with various conditions (e.g., fasting, extreme cold, surgical trauma, and drug use) that could produce physical changes in the body that represented a reaction. stress reactions, such as adrenal hypertrophy, thymic atrophy, and gastric ulcers. In Selye's view, the determinants of the stress response are nonspecific. Therefore, many nonspecific

conditions can stress the body and lead to illness, just as many nonspecific conditions can stress a piece of metal and break it like glass.

The American Psychological Association offers a definition that: “ *Stress is the physiological or psychological response to internal or external stressors .*” Stress involves changes that affect almost every system of the body, affecting how people feel and behave. For example, it may be manifested by palpitations, sweating, dry mouth, difficulty breathing, restlessness, rapid speech, increased negative emotions (if ever experienced) and periods of fatigue due to stress. Stress lasts longer. Severe stress is manifested by general adaptation syndrome. By causing psychological and physical changes, stress directly contributes to psychological and physiological disorders and diseases, while also affecting mental and physical health, reducing the quality of life. Later research on psychological stress approaches three main directions: epidemiological approach, biological approach and psychological approach (Cohen, Gianaros and Manuck, 2016).

Biological approach (also known as stress response theory according to Qiu et al., 2021)

According to Chrousos (2009), stress syndrome is a relatively stereotypical instinctive response that has evolved to coordinate homeostasis and protection of the body during times of acute stress. Accordingly, stress factors include a variety of effects that can be detrimental to the individual physically or emotionally. The level and chronicity of stressors both determine the activation of compensatory responses in the individual's homeostatic system equivalent to the stressor.

In the central nervous system, the stress response includes processes that support time-limited emergency adaptive pathways (e.g., vigilance, attention, aggression); At the same time, it inhibits transmission pathways that have vegetative functions (eg, eating, growing, and reproducing). In addition, the central nervous system also activates regulatory feedback loops to respond appropriately to the situation.

The peripheral nervous system functions to increase oxygenation and nutrition for the brain, heart, muscles, and bones to coordinate the "fight or fly" response. In particular, sleep is also affected, specifically sleep is inhibited and excitement (activity) of the individual is stimulated due to the rapid metabolism that releases the energy of the stress response, leading to confusion. sleep disorder. When stressed, the stomach is inhibited through the vagus nerve, whereas the large intestine is stimulated through the sacral parasympathetic system, leading to digestive problems (Chrousos, 2009). The chronic stress response also disrupts the body's autoimmune function and increases the risk of certain infections. (Chrousos, 2009). Although the stress response helps the body adapt to unpleasant environmental stimuli, acute stress levels that are large and/or prolonged will lead to disruption of the stress system, thereby causing The body's organs and systems become dysfunctional and become less immune to fight certain diseases. (Qiu et al., 2021; Chrousos, 2009). For example: fear, anxiety, anorexia, increased muscle tone, hypertension, cardiovascular diseases, pain syndrome, fatigue syndrome.... (Carroll et al., 2017; Chrousos, 1992; Phillips & Hughes, 2011; Chrousos, 2009).

In short, this approach posits that the effects of stressors are mediated by perturbations of physiological systems that are essential for homeostasis and metabolic control (Cohen et al, 2016), thereby leading to temporary disorders of some body functions.

Epidemiological approach (also known as stress arousal theory according to Qiu et al., 2021)

The epidemiological approach holds that external stimuli can cause individuals to develop physiological responses such as stress and fear (Holmes & Rahe, 1967). Thomas Holmes and Richard Rahe believed that individuals' neurological responses stem from stimuli in the external environment, specifically stressors. These are life events such as: changing living environment, working, enrolling in school, graduating, failure, changing jobs, birth/death dates of family members, etc. are

described. The description is based on the Psychophysiological theory initiated by Adolph Meyer (Holmes & Rahe, 1967). In short, stressful stimuli are changes in the individual's current stable state. This approach emphasizes the impact of stress on human psychology on human physical and mental health (Qiu et al., 2021) and a specific life event that creates equivalent levels of stress for all individuals (Cohen, Gianaros, and Manuck, 2016).

Initially, Thomas Holmes and Richard Rahe (1967) suggested that the greater the stress associated with a life event, the greater the variability in the individual's adaptation to that event. That is, after each negative change event, stress will accumulate and increase the overall adaptation burden for the individual. In addition, studies following the epidemiological approach also regularly measure the effects of single stimulating events such as: unemployment, divorce, care for chronically ill people, etc. Thereby proving a hypothesis. posit that certain types of events can still pose significant levels of threat to individuals, primarily related to primary social roles and the integrity of interpersonal relationships (Cohen, Gianaros et al. Manuck, 2016). And that stress is often chronic because the triggering event or the effects of that event often persist over long periods of time.

In short, the epidemiological approach identifies events with specific negative impacts mainly by taking the opinions of subjects and then synthesizing them and assessing their actual impact on the individual. Therefore, this approach has been relatively successful in predicting the incidence of some diseases, disease progression and mortality (Cohen, Janicki-Deverts and Miller, 2007).

Psychological approach

Different from the epidemiological approach, the psychological approach assumes that each individual will experience stress differently from a potentially stressful life event.

According to Lazaus and Folkman, stress should be based on the individual's assessment of: the threat level of the events and the resources needed to cope with them. More specifically, the assessment of the threat level of events will be based on the influence of the level of future vulnerability, the intensity and duration of the event, the ability to control the event, and people's beliefs. individuals about themselves, their environment, their values and commitments, and their personality tendencies. The assessment of coping resources will be based on direct actions aimed at changing the threatening event as perceived by the individual and the existence of thoughts or actions aimed at changing emotional and behavioral responses. vi for that event. And so, when an individual evaluates a threat without believing that he or she has effective coping responses available, the individual will be considered to be experiencing stress and will lead to emotional reactions such as anxiety. nervousness, fear (Lazarus, 1966; Lazarus & Folkman, 1984).

Some studies following this approach focus on letting subjects self-assess and perceive their own level of stress based on their perception of a threatening event and their ability to control it. relative to that event. (Cohen, Janicki-Deverts and Miller, 2007) In addition, some studies have assessed the general level of stress over a specified period of time independent of the event based on the subject's experience. (Cohen, Janicki-Deverts and Miller, 2007) Thus, according to this approach, stress is defined as an experience that occurs when individuals both evaluate an event as threatening to themselves and believe that their coping resources are insufficient (Cohen, Janicki -Deverts and Miller, 2007). In summary, drawing from previous studies, stress is defined as an individual's physical and psychological reactions to threatening external stimuli.

Overview of research on healthcare workers' professional stress

Prevalence of stress in medical staff

Psychological stress among medical staff is a global problem, seriously affecting their health and quality of work. Studies have shown that medical staff are at high risk of stress largely from local objective factors such as large and intense workload, time pressure and high responsibility. Accompanied by factors related to the nature of work such as exposure to illness, witnessing patients and family members experiencing physical and mental health crises.

Research shows that health care workers are more likely to experience stress than other occupations, and compared to the general population. In a study comparing the level of occupational stress across many industry groups, Johnson and colleagues (2005) showed that health care workers ranked below average on two criteria: mental health and job satisfaction, and ranked them below average. lowest ranking for occupational stress among the 26 occupations compared. In another study by Ito and colleagues (2014), the BJSQ ("Brief Job Stress Questionnaire") scale was used to assess three components: "stress factors" (job stressors), "stress response", and "social support". The authors compared the scores of 9,137 doctors, nursing staff and administrative staff at 20 hospitals in Japan. The results obtained show that health workers have greater work pressure than the average in Japan, specifically the "total health risk" score is 10% higher than the national average. In addition, the authors also pointed out the differences in three main components measured based on job position. Doctors feel stressed due to excessive and complex workloads, but receive support from superiors and colleagues, and have mild stress reactions. Nurses feel stressed due to excessive and complex workloads similar to doctors, but lacking support from superiors and colleagues, the stress response is high. Administrative staff lack support from superiors and colleagues, but are less stressed by workload than doctors or nurses,

average stress response.

Recently, the research trend on occupational stress among healthcare workers has shifted to studying the impact and consequences of the COVID-19 epidemic on the mental health of healthcare workers. In general, dealing with the medical crisis brought about by the COVID-19 epidemic increases the stress of health care workers, especially doctors and nurses working on the front lines of fighting the epidemic. In a study using a stress scale in caring for patients with highly infectious diseases among medical staff (based on a version of the SARS outbreak), Wang and colleagues (2020) showed that for each factor stress factor in the scale, less than 60% of participants selected moderate or severe stress levels. This study shows that the fear of being infected and transmitting Covid-19 to relatives and friends puts medical staff under great pressure (over 50%). Compared with employees who worked on the frontline for no more than 10 days, those who worked on the frontline for 21–30 days tended to have increased stress levels.

In the study by Izdebski et al., (2023) the authors used the BAT-12 scale to measure the level of burnout and the PSS-4 scale to measure the stress level of 2196 health care workers working with patients during the pandemic. COVID-19 in Poland. Results showed characteristically high and rising levels of stress across all professional groups, with the highest rate for nurses (58.6%), followed by medical staff (56.9%).), other health professions (55.1%), nurses (24.4%), and medical staff (20.3%) were most frequently exposed to crowds of patients. The results of this study are also consistent with Ito et al. (2014) in that job position affects the stress level of healthcare workers.

In Vietnam, there is not much research on occupational stress among physicians, and a large amount of existing research on this topic was conducted during the COVID-19 epidemic. In general, the COVID-19 pandemic has a significant impact on the mental health of doctors and nurses, consistent with the results of research abroad.

Vu Thi Cuc and colleagues (2022) collected data from 244 medical staff at 12 hospitals and frontline medical facilities treating COVID-19 in Ho Chi Minh City, and showed that the rate Health workers face quite high pressures related to work and personal life. Among them, the rate of frequently experiencing pressure due to witnessing severe complications/death due to COVID-19 is the highest at 45.1%. In addition, doctors also encounter negative reactions from their families, patients, and patients' relatives with an intensity ranging from 19 to 30%. The author believes that the consequence of these pressures and opinions is that the proportion of health workers with very severe stress is 12.3%, 27.9% with severe stress, 22.5% with moderate stress and 22.5% with moderate stress. mild level is 17.6%. The rate of stress in health care workers is 80.3%.

Research by Ngo Tri Tuan and colleagues (2023) on 135 subjects who were medical staff in departments/rooms at Hanoi Kidney Hospital showed that although 42.2% of the number of doctors performed treatment /caring for COVID-19 patients, but the impact on doctors' stress levels is not significant. The majority of study subjects showed no signs of stress, with 0.7% of physicians reporting signs of stress. The results are not consistent with the current state of research on the harmful effects of COVID on the mental health of physicians.

Le Thi Kieu Hanh and colleagues (2023) pointed out that among 520 medical staff working at Hanoi Medical University Hospital and Thai Binh Medical University Hospital, the proportion of subjects with symptoms of stress was 27.88%. Research shows that special risk factors for stress include work overload, workplace relationships, and work-family conflict. There are also factors that have a lower influence such as bad family members, major incidents that health workers have encountered in the last year, noise in the work area, and dangerous factors.

Impact of stress on medical staff's mental health

Medical professionals have to work in a pressured and stressful environment for long periods of time which can greatly affect their physical and mental health and their work efficiency. Zhang et al.'s (2022) study surveyed 1064 health care workers in hospitals in China during the Covid 19 epidemic. The study results showed a correlation between stress and psychological distress of health care workers. is a positive correlation, meaning that healthcare workers with higher perception of stress have higher levels of psychological distress. Similarly, the study by Vahedian-Azimi and colleagues (2019) studied a group of nurses in emergency rooms of hospitals in Iran. The results also showed that stress factors cause them to have both physical and mental health problems, manifested in many disorders. They have to work for long periods of time under pressure and stress, causing their physical and mental resources to gradually deplete and experience exhaustion.

Psychological stress actually also greatly affects the exhaustion of health care workers and leads to an impact on work efficiency. Devebakan's (2018) study showed a statistically significant positive correlation between self-perceived stress scores and burnout of health care workers. This means that the higher individuals' perception of stress, the more severe their level of burnout. Another study conducted in China by Deng and colleagues (2019) showed that barrier stress factors were negatively correlated with health workers' motivation to serve society and work performance. Accordingly, stressors will be divided into two types: challenge stress and barrier stress. While the higher the challenging stress factors, the higher the health workers' motivation to serve society and their work performance; The higher the barrier stress factors, the lower the motivation to serve society and work performance. In addition, research by Vivian and colleagues (2019) also showed a relationship between stress levels and self-care habits, mindfulness, and emotional inhibition in nurses. Accordingly, individuals who reported higher stress scores had

fewer self-care and mindfulness habits. In contrast, individuals who reported higher stress scores had more emotional inhibition.

Factors affecting stress in medical staff

During the Covid-19 pandemic, the health sector had great difficulty in treating, vaccinating and controlling the disease. The stress of medical staff is even more evident during this period as they are subjected to higher workloads, while not being sure of the consequences for their health. Lenzo et al.'s (2021) study with medical staff in Italy showed that medical staff directly supporting Covid-19 patients had higher stress levels than the rest of the medical staff group. The proportion of medical staff directly supporting Covid-19 patients with moderate to extremely severe stress levels is 33.4% due to their increasing fear of infection. This shows that the level of danger of work is a factor affecting the psychological stress of medical staff.

Wang et al.'s (2020) study on medical staff in Wuhan also showed a similar result. Health care workers who were on the front lines fighting the epidemic for 21-30 days had greater stress levels than those who only participated for no more than 10 days. The study explained that: Health workers worry about disease infection for themselves and their families when participating in fighting the epidemic. Besides, the intensity of their work on the front line is also higher when they have to take care of patients and often have to face patient disappointment or deaths, which also causes them stress. Additionally, research shows that nurses have greater stress levels than physicians; Married health workers have higher stress levels than unmarried ones; Health workers working in epidemic provinces are more stressed than health workers working in that province.

Another study by Martines-Ponce and colleagues (2023) conducted a survey on 116 nurses working in a Mexican hospital assigned to provide specialized care for suspected or confirmed cases of Covid-19. This study has shown that factors

leading to increased stress in nurses include: epidemic prevention areas; community indifference to their work during the pandemic; affected by deaths of patients with covid19, increased drug dosage; fear of entering the red zone; feel the need for psychological attention.

In addition to especially urgent situations such as pandemics, the most common stressors for medical staff are: workload, patient expectations, relationships with colleagues, number of hospital beds /number of medical staff, risk of errors, professional qualifications and satisfaction with income level. Boyacı et al.'s (2014) study surveyed 103 medical staff working at Merzifon Asker Hastanesi. In the study sample, underestimation of the work of others , unfair assignment of tasks, general workplace gossip, relationships with managers, unfairness in performance appraisals as well as Patient dissatisfaction and fear of complaining were cited as their top stressors.

Another study by Angioha et al (2020) on stress and perceived well-being of healthcare workers in Nigeria showed that high workload leads to prolonged stress and affects their health. Of these, 37.2% of health workers reported that they had to work under stress due to too much work; 93.6% of healthcare workers reported being exhausted due to being stressed for too long when having to undertake a large workload; 87.5% of healthcare workers reported that stress due to too much work affects their health. Research by Golubic et al (2009) identified six main groups of factors causing stress for nurses at a Croatian university hospital including: high workload and inadequate salary; public criticism; workplace hazards; conflict with colleagues; shift work (shortage of manpower); professional and intellectual needs. A comprehensive study by Konstantinos and Christina (2008) showed that hospital organizational problems and lack of human resources were positively correlated with stress among nurses in psychiatric hospitals. That is, hospital organizational problems and lack of human resources increase nurses' stress levels in psychiatric hospitals.

Research by Rink and colleagues (2023) collected the biggest stress factors of 2,310 medical workers in the US. The results show that factors that make it difficult for health workers to work at the system level play the biggest role in causing stress in health workers. Stress at the system level is understood as problems within the organization that make the work of healthcare workers less effective, for example lack of resources, complex processes, poor management, etc. These factors often beyond the control of medical staff. This result is consistent with the study of Hasbrouck and Waddimba (2017). The study investigated the factors that cause stress in 177 healthcare workers in suburban areas in the US, and the results showed that among the common reasons, organizational reasons have the most impact on stress levels.

The specific organizational factor mentioned a lot in research is work overload. Many healthcare workers, including doctors, nurses, and emergency medical personnel, regularly work long hours, exceeding 40 hours/week. Many health workers even work night and double shifts, pushing their physical and mental limits to the point of stress. In a study on stress factors on 198 doctors and nurses at a hospital in Ethiopia, Birhanu and colleagues (2018) showed that work overload and night shift work are directly proportional to job stress: Healthcare workers who work 50 hours or more per week are six times more likely to experience stress than those with 40-hour work weeks. This result is consistent with a study of 626 physicians in Saudi Arabia (Salam, 2016), the study also showed that a 50-hour work week schedule increases the risk of stress among medical staff.

Working the night shift is also an organizational factor that affects the stress of medical staff. Research on 406 physicians working in oncology departments in Germany and Austria by Sehlen and colleagues (2009) shows that night work schedules increase the likelihood of medical staff experiencing stress in every situation. positions, including nurses, technicians and physicians. This result is

consistent with the research of Birhanu (2018) in showing a close relationship between occupational stress and night shift work.

Dissatisfaction with income levels and social benefits is also a mentioned factor. In research in the international context, the influence of this factor on medical staff is uneven, due to uneven income levels between positions (for example, nurses, technicians, specialist). Sehlen and colleagues (2009) showed that low income level has the greatest influence on occupational stress in nurse positions, but is not statistically significant in doctor or technician positions. get higher pay. In the Vietnamese context, health workers who are dissatisfied with their income level have a stress rate 2.29 times higher than the satisfied group (Bui Hong Cam & Ngo Thi Thuy Dung, 2023).

As the overview stated above, there are many factors that impact psychological stress in healthcare workers. Below are the most prominent factors that affect psychological stress in healthcare workers

Subjective factors

Demographic factors

Demographic factors including gender and age all have impacts on levels of stress taken and stress tolerance, leading to differences in impacts on work efficacy of stress.

Education level

Studies show that the higher the education level of health workers, the higher their stress level due to the high demands on their capacity, knowledge and work.

Work experience

For most people new to the profession, there is greater stress than those with extensive experience. This is explained that professional practice is directly related to human health and life, so for less experienced employees it will be difficult to

avoid worrying about the risk of making mistakes. And so, they will have greater stress levels.

Work position

Depending on each individual's position, their tasks and responsibilities will be different. Therefore, their workload and job requirements will also be different, leading to different stress levels.

Work place

Depending on each department or specialty, the requirements for experience and practical skills are different, and the pressures when working are also relatively different. It can also lead to differences in the level of stress experienced by each HCW.

Satisfaction with salary

Research by Bui Hong Cam and Ngo Thi Thuy Dung (2023) shows that people who are satisfied with their salary have lower stress levels. Because when health workers do not feel satisfied with their salary, they will not be motivated to work. In addition, they may worry about the salary not being enough to live. Meanwhile, their workload is relatively large, which will make them tired when working and gradually lead to stress.

Objective factors

Workload

The workload of medical staff today is relatively heavy, and greatly affects their psychological stress (Angioha et al., 2020). Accordingly, they must continuously work with high intensity and pressure when performing complex professional tasks and directly related to people. That requires them to be extremely focused and extremely careful with every action and decision to practice their profession. This makes them overloaded and leads to high stress.

Relationships with colleagues

In the work environment, relationships with colleagues will greatly affect work comfort and teamwork coordination. If you work with people who have conflicts with you, it will make individuals easily depressed, frustrated and stressed (Boyacı et al., 2014; Golubic et al., 2009).

Resources in the workplace

Resources in the workplace include both human and material resources. In working conditions lacking human resources, medical staff often have to work overtime and the pressure to care for patients is much greater. If that lasts for a long time, it will make it difficult for them to adjust and lead to stress and exhaustion. Similarly, working in an environment lacking facilities will make it difficult to practice professionally, gradually leading to workplace stress (Golubic et al., 2009; Konstantinos and Christina, 2008).

Health risks

Health risks such as contracting infectious diseases during work or being attacked by the patient's family are also factors that make health workers most susceptible to stress. That is most clearly shown through the recent Covid-19 pandemic when the health risks of healthcare workers who had to participate in the epidemic were pushed to the highest level, making their stress more evident (Lenzo et al., 2021; Wang et al., 2020; Martine-Pomce et al., 2023; Golubic et al., 2009).

Conclusion

Stress in physicians is a complicated problem with many facets to its causes and effects. The numerous elements that lead to physician stress have been examined in this literature review, including the emotional toll of dealing with disease and death, long hours, high workloads, expectations on patient care, and administrative hassles. In Vietnam, the causes and characteristics of occupational stress found are in line with previous research from international studies, with some particularities, such as more emphasis on pay satisfaction being a cause for stress. The review has also brought attention to the negative impacts that physician stress has on one's personal health, career satisfaction, and the standard of patient care. To protect the health of medical personnel and the standard of patient care, legislators and healthcare organizations must make physician stress management a top priority. Later studies ought to concentrate on formulating and assessing inventive measures to alleviate physician tension and foster a more robust and healthy medical staff.

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