REVIEW ARTICLES

The prevalence of stress, anxiety, and depression symptoms among primary and secondary school teachers in Ha Noi, 2020

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ABSTRACT

Objective: To describe the prevalence of stress, anxiety, and depression among primary and secondary school teachers in Ha Noi in 2020.

Method: A cross-sectional study was conducted on 481 teachers from ten primary and secondary schools in Ha Noi in September 2020. The participants' stress, anxiety, and depression levels were measured using the Depression, Anxiety, and Stress scale 42 items. The data was cleaned and analysed using Stata 18.0 software.

Results: The most prevalent disorder was anxiety, with 42.4% of study participants showing anxious symptoms from mild to more serious levels. Noticeably, 12.1% of teachers reported severe levels of anxiety. The prevalence of depression and stress was 24.3% and 24.9%, respectively. 16.2% of teachers had symptoms of all three problems.

Conclusion: The prevalence of stress, depression, and anxiety symptoms was substantial among primary and secondary teachers in Ha Noi. It is essential to care for teachers' mental health in such an emergency as COVID-19, especially those in the initial stages of their careers.

Keywords: Emergency, stress, anxiety, depression, primary and secondary school teachers.

INTRODUCTION

The teaching profession can be highly stressful, which may lead to reduced job satisfaction, burnout, and poor work performance (1). Teachers are very susceptible to physical and mental health problems. Othman et al. (2019) used the Malay DASS-21 to assess depression, anxiety, and stress among secondary school teachers in the Klang Valley, Malaysia. The results found that among a total of 356 teachers participating in the study, the prevalence of depression, anxiety, and stress symptoms was 43%, 68%, and 32.3%, respectively (2). A scoping review in 2022 reported the prevalence of anxiety among teachers ranging from 38% to 41.2%, stress ranged from 8.3% to 87.1% and depression ranged from 4% to 77% (3).

In 2020, the COVID-19 pandemic broke out worldwide, affecting the education systems of many countries. All teaching activities from preschool to university education levels were transformed into an online modality, and teachers had to get used to online teaching during the outbreak. Changes in how teachers work, without adequate training for the new teaching modality (4), generated an unprecedented challenge for teachers, such as the difficulty of using digital platforms, the

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lack of resources to teach remote classes, work overload, and the excessive use of screens (5), in addition to other COVID-induced pressure on their physical and psychological health. Several studies have shown that at the beginning of the pandemic, teachers accumulated high levels of stress accompanied by symptoms of anxiety, depression, and sleep disturbance, particularly as a result of having to teach online (6, 7). A systematic review of Silva et al (2021), which examined 1372 records from 6 cross-sectional studies, reported wide ranges of stress (12.6% to 50.6%), anxiety (10% to 49.4%), and depression prevalence (15.9% to 28.9%) during the COVID-19 period (8).

Moreover, these psychological effects of COVID-19 on teachers may intensify over time after prolonged exposure. A study in Poland by Jakubowsk et al. (2021) showed that, between the two COVID-19 outbreak waves, the proportion of primary and secondary school teachers with mental health symptoms (measured with DASS-21) increased from 6% in the first survey to 47% in the second survey for stress; from 21% to 31% for anxiety; and from 12% to 46% for depression, respectively (9).

In Vietnam, psychological problems among teachers have not received adequate attention. Ha Noi is a city with an education system facing the challenges of a rapidly increasing population with pressure on facilities and human resources, and a shortage of schools, classrooms, and qualified teachers. In addition, the new textbook program applied to primary and secondary school programs in 2020 also created pressure for teachers to get used to the new requirements of work. However, there have not been many studies conducted in Vietnam to examine mental health issues in primary and secondary school teachers; only a few studies focused on teachers at kindergarten or university levels (10-12). Therefore, this paper aims to assess the prevalence of stress, anxiety, and depression among teachers working in ten primary and secondary schools in Ha Noi.

METHOD

Study design: This study employed a descriptive cross-sectional design.

Study site and time: The authors used secondary data from the nationwide study on the status of psychological stress and solutions to relieve psychological stress in teachers, which was conducted by the National Education Union of Vietnam in September 2020 (13). The original study applied a cross-sectional survey design with self-administered questionnaires to explore the state of psychological conditions and mitigation measures among all teachers in 56 schools from kindergarten to high school levels in seven provinces across Vietnam (Ha Noi, Thai Nguyen, Lao Cai, Nghe An, Thua Thien Hue, Ho Chi Minh, Tien Giang). This paper used data from all ten primary and secondary schools in Ha Noi city participating in the original study.

Study subjects: Data from all primary and secondary teachers currently working in ten schools in Ha Noi city were extracted and analysed in this paper. The number of teachers was 481.

Sample size and sampling methods

In this paper, we applied the formula to specify the population proportion with the anticipated proportion of stress, anxiety, and depression as follows:

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

The sample size for depression (n_1) with α = 0,05; $z_{1-\alpha/2}$ =1,96; d = 0,07; choosing the prevalence of depression p = 0,32 (referenced from the study Santamaria et al. (2021) in Spain (14)) resulted in 171 participants.

Similarly, referencing the proportion of teachers with anxiety (49.3%) and stress (50.4%) from the same study, the calculated sample sizes for anxiety and stress were equal as 196. With an additional 10% of potential refusal, the minimum sample size was 215. Considering the cluster sampling of the original study, the design effect k = 2 was applied to calculate the sample size of this paper, resulting in 430 participants. Therefore, data from 481 teachers in the original study's database were sufficient and were used for this paper's analyses.

Measurements

Depression, Anxiety, and Stress Scale 42 items (DASS-42)

The 42-item Depression, Anxiety, and Stress Scale introduced by Lovibond and Lovibond (1995) (15) was used to assess the prevalence of stress, anxiety, and depression among study participants. The scale has 42 items and three dimensions, i.e., stress, anxiety, and depression, each has 14 items. All items were rated on a 4 Likert scale from 0 (did not apply to me at all) to 3 (applied to me very much, or most of the time). The score of each dimension is the sum of its items' scores, ranging from 0 to 42. Table 1 shows the scoring and grading of DASS-42. Participants were classified as having symptoms of all three mental health issues when they had a depression score of 10 or higher, an anxiety score of 8 or higher, and a stress score of 15 or higher.

Table 1. Scoring and grading of the Depression, Anxiety and Stress Scale (DASS-42) (15)

Category	Depression	Anxiety	Stress
Normal	0 – 9	0 – 7	0 – 14
Mild	10 – 13	8 – 9	15 – 18
Moderate	14 – 20	10 – 14	19 – 25
Severe	21 – 27	15 – 19	26 – 33
Extremely severe	≥ 28	≥ 20	≥ 34

Self-administered questionnaire to measure participants' characteristics.

Participants' characteristics included age, education level (Intermediate/College/University/Postgraduate), marital status (married/other), workplace (primary/ secondary schools), intention to leave a job (yes or unsure/definitely no), years of experience, type of contract (fixed-term/indefinite-term), and previous year performance evaluation (excellent/good/fair-average).

Tools and methods of data collection: In the original study, the self-reported questionnaires were delivered to the target teachers. Permission from the school management board and participants' consent forms were obtained before the data collection. Researchers went to each school to introduce the study, invite participants, and distribute the questionnaires to teachers. After one week, researchers revisited and collected the administered questionnaires from participating teachers. In this paper, data of the above variables (DASS-42 and personal characteristics) of 481 participating teachers were extracted from the dataset of the original study.

Processing and analyzing data: The final 481 records from the original data set were extracted to an Excel file and then cleaned and analysed by Stata 18.0 software. Descriptive data were presented in counts and percentages

for categorical data, while the age and years of experience variables were presented as mean, standard deviation (SD), and min/max. Frequencies and percentage distributions were presented in tables and figures. Distribution of stress, anxiety and depression comorbidity across demographic groups was examined using the Chi-square test, odds ratios and confidence interval of 95% (95%CI).

Research ethics: The Hanoi University of Public Health ethics committee approved the study protocol in decision No. 449/2021/YTCC- HD3 before data collection and analysis. All information, including personal information, was encrypted to ensure confidentiality. Permission to use original data was obtained from the principal investigator of the original study prior to the analysis.

RESUTLS

Participant's characteristics

The average age of study participants was 38.9 years (SD=8.1). Most of the teachers had university and postgraduate degrees (87.6%), and were married (85.7%). 81.3% of teachers had no intention of changing their current job.

The average years of work experience was 15.9 years (SD=8.9). 94.4% of teachers had a intermediate-term employment contract. More teachers worked in primary schools (59.3%). In the most recent academic year, 95.8% of teachers had "very good" and excellent performance.

Prevalence of stress, anxiety, and depression symptoms among study participants

Figure 1 showed that 24.3% of teachers had depression symptoms. The proportion of teachers with mild, moderate, severe, and extremely severe levels of depression was 11.6%, 9.4%, 2.7%, and 0.6%, respectively. Anxiety disorders were observed in 42.4% of teachers. The highest proportion of severity levels was at a moderate level (17.3%), followed by mild (13.1%), severe (6.7%), and extremely severe levels (5.4%). Stress symptoms were prevalent among 24.9% of teachers. Percentages of mild, moderate, severe, and extremely severe levels were 12.9%, 9.4%, 2.5%, and 0.2%, respectively.
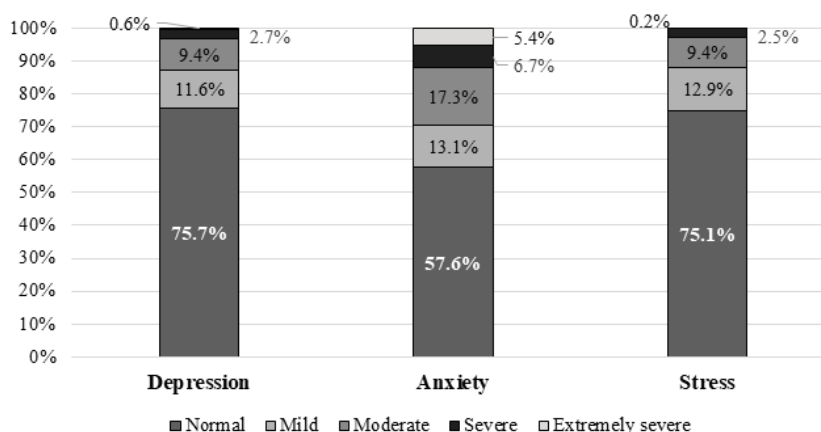

Figure 1. Prevalence of stress, anxiety, and depression among study participants (N=481)

Comorbidity of psychological disorders

Figure 2 shows that nearly half of the study participants reported symptoms of at least one psychological problem. Notably, 16.2% of teachers expressed symptoms of all three disorders.
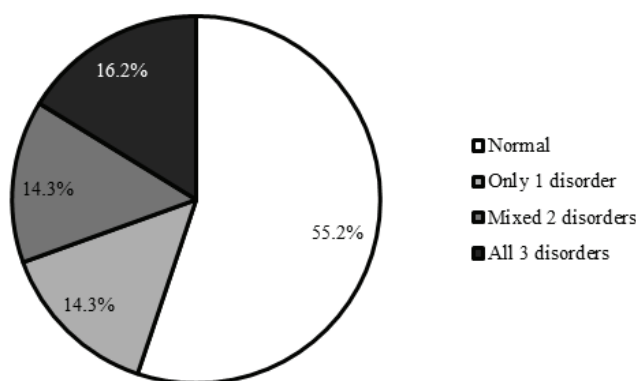
Figure 2. Prevalence of co-occurring psychological symptoms among study participants (N=481)

Table 2 presents the proportion of teachers with co-occurring mental health disorders by some personal characteristics. Teachers under 35 years of age expressed a higher risk of mental comorbidity by 1.97 times (95%CI: 1.2 – 3.2) than those from 35 years old and upward. Teachers with thoughts of leaving their current job also had three times higher odds of stress, anxiety and depression co-occurrences than their counterparts who definitely stayed with their job (OR: 3.08, 95% CI: 1.8 – 5.26).

Table 2. Prevalence of co-occurring stress, depression, and anxiety of teachers across different groups (N=481)

	Comorbidity of 3 disorders	Others	OR	95%CI
	n (%)	n (%)		
Age groups				
<35 years	35 (22.9)	118 (79.1)	**1.97**	**1.20 - 3.23**
≥35 years	43 (13.1)	285 (86.9)		
Work experience				
<15 years	43 (19.0)	282 (81.0)	0.96	0.59 - 1.55
≥15 years	35 (13.7)	220 (86.3)		
Type of contract				
Fixed-term	7 (25.9)	20 (74.1)	1.89	0.77 - 4.63
Indefinite-term	71 (15.6)	383 (84.4)		
Workplace				
Primary school	38 (13.3)	247 (86.7)	0.61	0.38 - 1
Secondary school	40 (20.4)	156 (79.6)		
Previous year performance				
Other	67 (16.7)	335 (83.3)	1.24	0.62 - 2.46
Excellent	11 (13.9)	68 (86.1)		

	Comorbidity of 3 disorders	Others	OR	95%CI
	n (%)	n (%)		
Intention to change job				
Yes, or Not sure	28 (31.1)	62 (68.9)	**3.08**	**1.80 - 5.26**
Definitely No	50 (12.8)	341 (87.2)		
Total	78 (16.2)	403 (83.8)		

DISCUSSION

Prevalence of stress, anxiety, and depression symptoms among study participants

The results showed that 24.3% of teachers had depression symptoms, 11.6% of them had mild levels, and 9.4% had moderate levels. Our study results of depression were aligned with findings of the systematic review of Silva, et al (2021), with the rate of teachers with depression ranging from 15.9% to 28.9% during the beginning of the COVID-19 pandemic (8). The proportion of teachers with depression in our study was lower than that in the Spanish study by Santamaría (2021) using DASS-21, with a depression rate in teachers of 32,2% (14). Reasons for this difference may be attributed to the sample of the two studies. Santamaria's study recruited 1633 teachers at different educational levels from early childhood education to university (14) while our study only contained 481 primary and secondary school teachers, In Tran Thi Minh Duc's study using DASS-21 to investigate the relationship between burnout and mental health disorders in kindergarten and primary teachers in Vietnam in 2021, the prevalence of depression was up to 41,9% (12), much higher than that of our study. The proportion of teachers with depression symptoms in our study was slightly higher than that in the study of Lee M et al. in Malaysia (2020), in which only 15.3% of teachers had depression symptoms, measured by using DASS-21 (16). Our findings were lower than those in the study of Lizana et al. in Chile (2022), with 67% of primary and secondary school teachers having depression

symptoms during the COVID period(17). However, Lizana examined the mental problems of teachers during the second wave of COVID-19 in 2021, when teachers had been under pandemic-response conditions for about one year. Their psychological conditions might worsen over time, as reported by Jakubowsk in Poland (9).

The prevalence of teachers with stress symptoms accounted for 24.9% of our study sample, which was also lower than that of Othman et al. (32,3%) (2), Santamaría (50,4%)(14), Lizana et al. (86%) (17). Our study reported a higher rate of teachers with stress symptoms than that of Lee M et al. in Malaysia (10.7%) (16). In our study, mild, moderate, severe, and extremely severe stress percentages were 12.9%, 9.4%, 2.5%, and 0.2%, respectively. The study by Santamaría also found a similar rate of 2.4% of teachers reporting severe or extremely severe stress symptoms (14).

In our study, 42.4% of teachers had anxiety symptoms, and most of them were mild (13.1%) and moderate (17.3%). This rate was slightly lower than the findings of Santamaría's study, with 49.3% of teachers having anxiety symptoms measured by DASS-21 (14). The proportion of participants with anxiety symptoms in our study was slightly higher than that of Agyapong's review (3), which reported the teachers' anxiety before COVID-19 ranging from 38.0% to 41.2%. Our result was also higher than that of all studies in Ozamiz-Etxebarria's review, with an anxiety rate from 9.5% to 37.2% in 2021(18). On the other hand, the proportion of teacher anxiety in our study was significantly lower than that in Othman et al. in Malaysia (68%) (2019) (2), and Lizana et al in Spain (73%) (2022) (17).

The findings of our study show a high proportion of anxiety symptoms among primary and secondary teachers in Ha Noi, especially at severe (6.7%) and extremely severe levels (5.4%). The proportion of subjects with severe anxiety symptoms in our study was similar to that in the study using the Arabic version of the Occupational Stress Index in Egypt, which was conducted in 2017 (7%) (19).

The original data that this paper used were collected in September 2020 when the second COVID-19 wave spread all over Vietnam. In this context, face-to-face classes were suspended nationwide, with remote virtual classes taking their place. Although technology had been generally applied in several educational activities, complete virtual classes at all education levels significantly affected teachers' mental health. Teachers faced many new challenges in teaching and supporting students to adapt to online learning, especially young primary and secondary students (20). Studies in Vietnam had mainly focused on challenges that teachers faced during the onset period of the pandemic (20-22), and only a few studies reported COVID-19 impacts on teachers' mental health (10-12). Our study's findings contribute to the literature on the mental health of teachers in Vietnam during crisis, specifically those in primary and secondary schools in the metropolis of Ha Noi during the COVID-19 pandemic.

Comorbidity of stress, anxiety and depression symptoms

More than half of people with one mental health disorder will be diagnosed with a second or third mental health disorder in their lifetime (23). In other words, the comorbidity of mental disorders is common and complex. In our study, 44.8% of teachers reported simptoms of either stress, anxiety or depression from mild to more severe levels, of which, 16.2% of subjects had symptoms of all three depression, anxiety, and stress disorders, with the younger group (under 35 years old) and those with an intention to leave the teaching job reporting a higher risk.

The simultaneous occurrence of mental health disorders severely affects teachers' health, teaching quality, and their work engagement. However, studies mainly report a single mental problem that individuals face at a specific time point, even though such studies covered a number of mental health issues (2, 3, 8, 14, 17-19). There is limited literature on the comorbidity of mental health disorders among teachers; therefore, it is essential to conduct more research on this issue.

Limitations: The study has several limitations. Firstly, the study assessed stress, depression, and anxiety symptoms based on the self-administered DASS-42 scale. DASS-42 is a screening tool that is unable to provide a clinical diagnosis of stress, depression, and anxiety. In addition, among the few existing studies on the same topic and target group, most of them employ DASS-21 or other scales. Secondly, the study results only represent the psychological condition of primary and secondary teachers in the metropolis, such as Ha Noi city. Finally, our paper used secondary data from other studies; we had limited control over the content and type of data, such as the method to categorise teachers' performance.

CONCLUSION

The prevalence of stress, depression, anxiety and their comorbidity was substantial among primary and secondary teachers in Ha Noi during such an emergency as the COVID-19 outbreak. It should be a priority to improve the mental health conditions of primary and secondary school teachers for a better response to emergencies, especially for younger teachers in their early careers.

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