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Prevalence and Associated Factors of Depression, Anxiety, and Stress among Village Health Volunteers in a rural community Thailand

[1]Intarut, Nirun, [2]Pukdeesamai, Piyalak

[1] Health Systems Science Division, Faculty of Medicine, Mahasarakham University, Muang, Maha Sarakham, Thailand, 44000

[2] Maha Sarakham Provincial Public Health Office. Maha Sarakham province. Thailand. 44000

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Abstract

We aimed to explore the prevalence and related factors of depression, anxiety, and stress among village health volunteer in community Thailand. This study was used a cross-sectional design to examine the mental health status of village health volunteers in a community in Thailand. The DASS-21 was used to measure depression, anxiety, and stress among the 847 participants included in the analysis. Multiple logistic regression was performed to identify factors associated with depression, anxiety, and stress. The prevalence of depression, anxiety, and stress were 9.8% (95% CI: 7.9, 12.0), 6.3% (95% CI: 4.7, 8.1), and 11.3% (95% CI: 9.3, 13.7), respectively. We observed a high yearly income, having non-communicable diseases, and those who smoked related to stress in VHV. Our result shows the high prevalence of depression, anxiety, and stress among village health volunteer in rural communities. Further research to gain a better understanding of the issue and develop appropriate interventions.

Keyword: mental health, community, stress

Introduction

Depression, anxiety, and stress are significant mental health concerns among healthcare workers or health volunteer worker during COVID-19 epidemic (Mo et al., 2022). These mental health issues can be further exacerbated during the COVID-19 pandemic due to the increased workload, exposure to the virus, non-communicable disease, or business crisis.

Several studies have found that the prevalence of depression, anxiety, and stress varies widely among healthcare workers, but they are generally higher than in the general population. A cross-sectional survey in Thailand found that the prevalence of depression among elderly was 16.67% (Thittayawadee Intarangkul, 2023). Similarly, the prevalence of mental health among healthcare workers or health volunteer worker during the pandemic was found to be around 31.8%-60.5% for depression, 34.2%-57.7% for anxiety, and 21.4%-65.4% (Hill et al., 2022). As reviews, health volunteer workers may also be at risk for mental health issues due to the demands and stress of their work during or after pandemics. They may face similar challenges as healthcare workers, such as exposure to traumatic events, long work hours, and lack of resources. Additionally, they may experience feelings of burnout, and compassion fatigue. These mental health concerns can have significant consequences on the well-being of health volunteer workers, affecting not only their own health but also their ability to provide quality care and support to their patients.

Therefore, this study aimed to study the prevalence of mental health (depression, anxiety, and stress) among village health volunteer (VHV) in rural community of Thailand.

Methods

A cross-sectional study was conducted between March 2023 and April 2023, and the participants were VHV working in a community. This study protocol was approved by the Mahasarakham University Ethics Review Board with number 350-366/2022, and informed consent was obtained prior to the start of the self-report, with assurance of confidentiality.

The information was collected by trained research assistants who delivered a self-report questionnaire to participants in the community. Prior to administering the questionnaires, the research assistants introduced themselves and obtained participants' consent. On average, the questionnaire took 20 minutes to complete. The sample size was determined based on a calculation of 560 participants with a saturated cluster effect of 1.5, resulting in a required sample size of 840 participants.

The questionnaire consisted of questions related to sociodemographic factors (age, gender, education level, marital status, smoking status, alcohol drinking status, and non-communicable disease status) and the DASS-21 questionnaire (Oei et al., 2013). The DASS-21 was used to measurement anxiety, depression, and stress. According to the DASS Manual, the scores of each mental health factor were summed up and classified as 'normal', 'mild', 'moderate', 'severe', or 'extremely severe', with a minimum score of 0 and a maximum score of 21. This study, the depression, anxiety, and stress categories were classified into two groups: "present" and "absent". The "absent" group included individuals with normal or scores ranging from 0 to 4, while the "present" group was further subdivided into "mild," "moderate," "severe," or "extremely severe" or scores of 5 or higher.

We managed and analyzed the data using the R program (version 4.1.0). We reported values as proportions and percentages for categorical variables and as means and standard deviations or median with ranges for continuous variables. To assess psychological distress (depression, anxiety, and stress) with participants' characteristics as independent variables, we performed a backward binary logistic regression. The results were reported as odds ratios (ORs) with 95% confidence intervals (CIs).

Results

We analyzed a total of 847 participants. The prevalence of depression, anxiety, and stress were 9.8% (95% CI: 7.9, 12.0), 6.3% (95% CI: 4.7, 8.1), and 11.3% (95% CI: 9.3, 13.7), respectively. The majority of participants were female (74.97%), under the age of 60 (34.59%), Buddhist (88.54%), separated or divorced (64.58%), had completed secondary school or higher (57.26%), had a yearly income of less than 100,000 Thai baht (87.96%), had no non-communicable diseases (70.41%), did not smoke (92.09%), and did not drink alcohol (84.89%). Demographic data were presented by depression, anxiety, and stress status in Table 1. When comparing mental health status, we found a statistically significant association between depression and religion, as well as alcohol drinking. Additionally, we observed a statistically significant association between anxiety and education level, smoking, and alcohol drinking. We also found a statistically significant association between stress and religion, marital status, yearly income, non-communicable disease status, smoking, and alcohol drinking.

Table 1 demographic of participants and mental health status

Variables	**n (%)**	**Depression**		**p-value**	**Anxiety**		**p-value**	**Stress**		**p-value**
		No n(%)	Yes n(%)		No n(%)	Yes n(%)		No n(%)	Yes n(%)	
Gender				0.138			0.464			0.059
Male	212 (25.03)	194 (24.40)	18 (34.62)		196 (24.69)	16 (30.19)		196 (26.10)	16 (16.67)	
Female	635 (74.97)	601 (75.60)	34 (65.38)		598 (75.31)	37 (69.81)		555 (73.90)	80 (83.33)	
Age (year)				0.654			1			0.059
<60	554 (65.41)	518 (65.16)	36 (69.23)		519 (65.37)	35 (66.04)		500 (66.58)	54 (56.25)	
≥60	293 (34.59)	277 (34.84)	16 (30.77)		275 (34.63)	18 (33.96)		251 (33.42)	42 (43.75)	
Religious				< 0.001			0.093			< 0.001

Bushism	742 (88.54)	716 (90.06)	26 (60.47)		707 (89.04)	35 (79.55)		680 (90.55)	62 (71.26)	
Cristian	96 (11.46)	79 (9.94)	17 (39.53)		87 (10.96)	9 (20.45)		71 (9.45)	25 (28.74)	
Marital status				0.784			0.205			0.031
Married	300 (35.42)	283 (35.60)	17 (32.69)		286 (36.02)	14 (26.42)		256 (34.09)	44 (45.83)	
Divorced / separated	547 (64.58)	512 (64.40)	35 (67.31)		508 (63.98)	39 (73.58)		495 (65.91)	52 (54.17)	
Educational level				0.510			0.024			0.747
Primary school	362 (42.74)	337 (42.39)	25 (48.08)		331 (41.69)	31 (58.49)		319 (42.48)	43 (44.79)	
Secondary school/ Graduated school	485 (57.26)	458 (57.61)	27 (51.92)		463 (58.31)	22 (41.51)		432 (57.52)	53 (55.21)	
Yearly income				0.154			0.073			< 0.001
<100,000	745 (87.96)	703 (88.43)	42 (80.77)		703 (88.54)	42 (79.25)		673 (89.61)	72 (75.00)	
≥100,100	102 (12.04)	92 (11.57)	10 (19.23)		91 (11.46)	11 (20.75)		78 (10.39)	24 (25.00)	
Disease status				0.554			0.193			< 0.001
No	590 (70.41)	551 (70.10)	39 (75.00)		548 (69.81)	42 (79.25)		547 (73.72)	43 (44.79)	
Yes	248 (29.59)	235 (29.90)	13 (25.00)		237 (30.19)	11 (20.75)		195 (26.28)	53 (55.21)	
Smoking status				0.791			0.006			0.002
No	780 (92.09)	731 (91.95)	49 (94.23)		737 (92.82)	43 (81.13)		700 (93.21)	80 (83.33)	
Yes	67 (7.91)	64 (8.05)	3 (5.77)		57 (7.18)	10 (18.87)		51 (6.79)	16 (16.67)	
Alcohol drinking status							< 0.001			0.003
No	719 (84.89)	682 (85.79)	37 (71.15)	0.008	683 (86.02)	36 (67.92)		648 (86.28)	71 (73.96)	
Yes	128 (15.11)	113 (14.21)	15 (28.85)		111 (13.98)	17 (32.08)		103 (13.72)	25 (26.04)	

The results of the multivariable analysis are shown in Table 2. Females were 0.23 times (95% CI: 0.10, 0.54) more likely to have depressive symptoms than males. Participants who were separated or divorced were 5.67 times (95% CI: 2.07, 15.54) more likely to have depressive symptoms than those who were married. For anxiety symptoms, we found that participants who were separated or divorced and smoked were 12.09 times (95% CI: 3.77, 38.74) and 25.18 times (95% CI: 6.28, 101.01) more likely to have anxiety, respectively. Additionally, female individuals, those over the age of 60, those with a yearly income over 100,000 Thai baht, those with non-communicable diseases, and those who smoked were more likely to have stress symptoms, with

odds ratios of 5.92 (95% CI: 2.26, 15.52), 2.44 (95% CI: 1.25, 4.77), 4.96 (95% CI: 2.52, 9.76), 3.53 (95% CI: 2.12, 5.9), and 23.21 (95% CI: 6.57, 81.97), respectively.

Table 2 results from multiple logistic regression

variables	Depression Adjusted OR (95%CI)	Anxiety Adjusted OR (95%CI)	Stress Adjusted OR (95%CI)
Gender			
Male	1	1	1
Female	0.23 (0.1,0.54)	0.85 (0.33,2.16)	5.92 (2.26,15.52)
Age (year)			
<60	1	1	1
≥60	1.58 (0.67,3.69)	1.68 (0.79,3.58)	2.44 (1.25,4.77)
Religious			
Bushism	1	1	1
Cristian	10.23 (4.44,23.57)	5.80 (2.16,15.62)	3.59 (1.92,6.7)
Marital status			
Married	1	1	1
Divorced / separated	5.67 (2.07,15.54)	12.09 (3.77,38.74)	1.13 (0.64,1.99)
Educational level			
Primary school	1	1	1
Secondary school/ Graduated school	0.51 (0.24,1.10)	0.17 (0.08,0.39)	1.18 (0.64,2.16)
Monthly income			
<100,000	1	1	1
≥100,100	0.96 (0.38,2.44)	2.02 (0.90,4.55)	4.96 (2.52,9.76)
Disease status			
No	1	1	1
Yes	1.08 (0.51, 2.30)	0.65 (0.30,1.41)	3.53 (2.12,5.9)
Smoking status			
No	1	1	1
Yes	1.33 (0.31,5.64)	25.18 (6.28,101.01)	23.21 (6.57,81.97)
Alcohol drinking status			
No	1	1	1
Yes	0.36 (0.11,1.19)	0.19 (0.06,0.64)	0.41 (0.14,1.17)

Discussion

In our study, the prevalence of depression, anxiety, and stress among the health volunteer worker was 9.8%, 6.3%, and 11.3% respectively. There are varying estimates of the prevalence of depression, anxiety, and stress depending on the measurement (Du et al., 2020; Lu et al., 2020; Pappa et al., 2020; Rezaei et al., 2022).

Depression is a significant mental health concern among healthcare workers, especially during the COVID-19 pandemic. There is evidence to suggest that healthcare workers are at a higher risk of developing depression than the general population due to the stresses of their work and the pandemic (Elgohary et al., 2021; Takada et al., 2022). Several studies have found that the prevalence of depression among healthcare workers varies widely depending on the population studied and the assessment method used. For example, a systematic review and meta-analysis found that the overall prevalence of depression among healthcare workers during the pandemic was 26%, with higher rates reported among frontline workers and those directly involved in COVID-19 patient care(Rezaei et al., 2022) . Other studies have found even higher rates of depression among healthcare

workers. For instance, a study found that a high prevalence of depression among hospitalists (physicians who specialize in the care of hospitalized patients) during the pandemic(ALGhasab et al., 2021).

Especially during the COVID-19 epidemic, anxiety among healthcare professionals is a serious mental health risk. Due to the dangers involved in caring for COVID-19 patients, the fear of contracting the virus, the lack of sufficient protective gear, and the possibility of spreading the virus to family and friends, healthcare personnel may get anxious (Ghahramani et al., 2022; Mosolova et al., 2020; Raoofi et al., 2021; Sakr et al., 2022). The frequency of anxiety among healthcare professionals during the pandemic has been studied in many research. A research shown that 35.1% of healthcare professionals in China during the COVID-19 epidemic reported having anxiety symptoms (Huang & Zhao, 2020). In 2020, a different research revealed that healthcare professionals had experienced anxiety during the epidemic (Shanafelt et al., 2020).

During COVID-19 pandemic, long hours, an excessive workload, exposure to infectious illnesses, and worry of contracting an infection, among other things, can all cause stress among healthcare workers (Di Giuseppe et al., 2021; Ghahramani et al., 2022; Hassan et al., 2022; Mosolova et al., 2020; Teo et al., 2021). Several studies have examined the prevalence of stress among healthcare workers during the COVID-19 pandemic. A study found that the stress prevalence among healthcare workers during the pandemic ranged was 42.28% (Nayak et al., 2021). Furthermore, our result reveal that the association between stress and non-communicable disease can lead to unhealthy coping behaviors such as overeating, smoking, and alcohol abuse, which can further increase the risk of NCDs (Krishnaveni & Srinivasan, 2019; Nordgren et al., 2022).

There are strengths and limitations to our study. Our analysis of depression, anxiety, and stress by gender, profession, and severity provided valuable information on areas of vulnerability. However, there may be limitations to the generalizability of our findings. It is important to note that these results may not be representative of the entire country.

In conclusion, depression, anxiety, and stress are significant concerns among health volunteer workers who work with patients in community. It is crucial to address these mental health issues by providing resources and support to health volunteer workers to promote their well-being and prevent burnout. In addition, reducing stress levels and improving coping mechanisms may be important strategies in preventing and managing non-communicable disease.

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Conflict of interest statement

None

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