

Factors affecting stress levels during COVID-19 pandemic among village health volunteers in rural areas, Thailand

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ABSTRACT

Background: Village Health Volunteers (VHVs) played vital role during the COVID-19 pandemic. They had to provide primary health care to people both with and without COVID-19.

Objectives: This study aimed to assess stress levels during the COVID-19 pandemic and factors affecting stress among VHVs in rural areas, in Thailand.

Method: A cross-sectional survey was employed in this study. A total of 204 samples were selected randomly with simple random sampling. They were village health volunteers who worked in rural areas (Phichit Province). The questionnaire consisted of five parts and was used to assess: (1) Personal factors (2) Work-related factors (3) Organizational factors (4) Health-related factors and (5) Stress levels developed by the Department of Mental Health (SPST- 20). Data were analyzed using frequency, percentage, mean, standard deviation, and multiple regression analysis.

Results: Most of the respondents were female (74%), and the age of all respondents ranged from 47 to 58 years (37.7%). Nearly one-third (28.9%) were married. The majority of the respondents attained secondary school (76%) and were agriculturists (50.5%). Their annual income ranged from 50,000 to 100,000 baht (\$1372.12 to \$2744.24). Approximately two-third (63.2%) reported that they had been working as VHVs in the range of 5-15 years. Additionally, a high-stress level was reported with the highest proportion (41.16%). Regarding the multiple regression analysis, it was found that factors related to stress levels of the VHVs in rural areas were working condition ($\beta = -1.649$, $p < 0.001$), social support ($\beta = 2.540$, $p < 0.001$), psychological aspect ($\beta = -4.233$, $p < 0.001$), and physical aspect ($\beta = 1.233$, $p < 0.001$). These factors were utilized to predict 52.10% ($R^2 = 0.521$, Adj. $R^2 = 0.512$) of the stress levels during the COVID-19 pandemic among the VHVs.

Conclusion: Factors affecting stress levels of the VHVs in the rural areas were working conditions, social support, psychological aspect, and physical aspect.

Keywords: Stress, Village health volunteers, Rural areas, COVID-19 pandemic

1. Introduction

The Department of Mental Health revealed that Thai people tend to be more stressed. According to the report of the mental health hotline service (1323) in 2017 (Department of Mental Health), stress and anxiety were the most common issues called to be consulted with approximately 30,000 lines (mostly adults), double the number in 2014 [1]. Individuals in both urban and rural areas are experiencing daily stress unconsciously and unavoidably as a result of changes in socio-economic conditions, the advancement of communication technology, and fast-paced lifestyles. Individuals' stress levels differ in their emotional backgrounds, environmental conditions, and individual coping abilities [2], and those in the working age group are the most likely to be stressed due to the demands of family and work [3]. In addition, any problems that are not solved and accumulated can induce stress [4].

Stress is a state of emotion or feeling that occurs when a person has encountered a problem that causes them to feel pressured, uncomfortable, nervous, fearful, anxious, and/or oppressed [5]. Whenever people perceive or evaluate problems as psychological threats or physical harm, their physical and psychological balance can be affected, which means they will respond to stress, and this can

impact their physical, mental, emotional, and behavioral health [6].

Hans Selye defined stress as “a group of indiscriminately physiological responses to a threat or danger, whether it is caused by something desirable or undesirable” [7]. Stress is a physiological and psychological response to considerable changes or unexpected issues occurring in life caused by external or internal factors. There are two primary causes of stress: 1) life problems (e.g., finances, work, family, and health) and 2) individual thinking and assessment of a situation (e.g., pessimism, impatience, seriousness, and loneliness) where stress can result from the combination of these two factors [8].

Healthcare and public health professionals play a vital role in helping people with health problems, from illness to life crisis. They thus have a high level of responsibility and should not make mistakes in their work. Consequently, most health personnel suffer from high levels of stress [9-11].

Village Public Health Volunteers (VHVs) are representatives selected by the village people in each group of villages and trained in accordance with the Ministry of Public Health curriculum [12]. They serve important roles such as being a leader in the change of behavior in the community (change agents), a communicator, a disseminator of health

knowledge, a planner, a coordinator of public health development activities, and a community health provider (e.g., health promotion, surveillance, disease prevention, first aid and treatment by using drugs and medical supplies within the scope specified by the Ministry of Public Health [13], referring patients to rehabilitation, and health consumer protection services) [14]. If these health volunteers encounter stress, the effectiveness of these health volunteers' work quality of their daily lives can be impacted [15].

During the Covid-19 pandemic, the VHVs had to work harder to check the fever of those who attend any auspicious and auspicious events in the community. They are basically responsible for evaluating and informing the situations of bed ridden patients to physicians (known as CG), monthly reporting the situations of mosquito larvae in the community to health workers. These workloads are likely to induce stress and poor health to VHVs as "health" refers to a state of complete physical, mental, and social well-being.

2. Methodology

A cross-sectional survey was employed in this study. A total of 204 samples were selected randomly with simple random sampling. They were village health volunteers who worked in rural areas in Phichit Province. The questionnaire consisted of 5 parts used to

assess: (1) Personal factors, (2) Work-related factors, (3) Organizational factors, (4) Health-related factors, and (5) Stress levels developed by the Department of Mental Health (SPST - 20). Data were analyzed using frequency, percentage, mean, standard deviation, and multiple regression analysis.

Population is the total of 994 village health volunteers in Pho Prathap Chang District, Phichit Province (Health Information System, Primary Health Care Division, 2019). Sample is a total of 253 village health volunteers in Pho Prathap Chang District, Phichit Province. Inclusion criteria included those who (1) age 18 years or over, (2) are able to read and write the Thai language, (3) registered as a VHV for Pho Prathap Chang District, Phichit Province, (4) were willing to participate in the study and provided signed consent. Exclusion Criteria included those who (1) were unable to provide information due to sickness and (2) were not in the community during the data collection period. Withdrawal criteria included those whom (1) requested to withdraw from the study during the process of data collection and (2) did not complete more than 20% of the questionnaire.

Sample size was estimated by using the Daniel's formula [16] and 95% confidence was considered.

2.1 Research instruments

Data collecting by questionnaires composed of 5 parts including,

Part 1: Demographic characteristics, consisting of items to assess participants' gender, age, marital status, educational attainment, main occupation, income, and duration of being a VHV.

Part 2: Work-related factors, consisting of items to assess workload and working conditions as a VHV (tasks that they were assigned) (5-point Likert's scale questions).

Part 3: Organizational factors, consisting of items to assess administration and social support (5-point Likert's scale questions).

Part 4: Health factors, consisting of items to assess psychological and physical aspects (5-point Likert's scale questions).

Part 5: Stress Scale by Department of Mental Health (SPST - 20) Instrument quality test;

1. Content validity: the questionnaire was verified by the research advisor regarding its correctness, content conformity, objective congruence and conceptual framework, language suitability, scoring criteria, and interpretation of the scores. It was then considered by three qualified experts with an Index of Item - Objective Congruence (IOC) of 0.86.

2. Reliability: the questionnaire was tested with a total of 30 people and the data obtained tested

the reliability of the questionnaire before implementation. Any errors detected were improved by Cronbach's Alpha method. As a result, the reliability of the questionnaire used to assess factors associated with stress levels was 0.925.

2.2 Data analysis

Descriptive statistics were used to analyze the distribution of the data and the general data characteristics of the sample, including frequency, percentage, and standard deviation. Analytic statistics were analyzed for identifying factors affecting stress by using multiple regression analysis. The statistical significance was set at 0.05.

2.3 Ethical Clearance

This study was approved by the Human Ethics Research Committee of Naresuan University (Ref No. P3-0045/2564). The participants were informed about the study, benefits, and possible risks of participation, data destruction process, publishing, overall data presentation, and anonymity. Only those who signed informed consent participated in the study.

3. Results

Most of the respondents were female (74%) and the age of all respondents ranged from 47 to 58 years old (37.7%). Nearly one-third (28.9%) were married. The majority of the respondents attained secondary school (76%) and were agriculturists (50.5%). Their annual

income ranged from 50,000 to 100,000 baht (\$1372.12 to \$2744.24). Approximately two-third (63.2%) reported that they had been working as VHVs in the range of 5-15 years. Additionally, a high-stress level was reported with the highest proportion (41.16%).

Table 1. the prediction model analyzed reported two selected factors can be predicting to stress levels of the VHVs in rural areas. Regarding the multiple regression analysis, it was found that factors related to stress levels of

the VHVs in rural areas were working condition ($\beta = -1.649$, $p < 0.001$), social support ($\beta = 2.540$, $p < 0.001$), psychological aspect ($\beta = -4.233$, $p < 0.001$), and physical aspect ($\beta = 1.233$, $p < 0.001$). These factors were utilized to predict 52.10% ($R^2 = 0.521$, Adj $R^2 = 0.512$) of the stress levels during the COVID-19 pandemic among the VHVs. $Y = 59.820 + [-1.649* \text{working condition}] + [2.540* \text{social support}] + [-4.233* \text{psychological aspect}] + [1.233* \text{physical aspect}]$.

Table 1: General characteristics of Village Health Volunteers

Variable	b	SE	Beta	t	P-value
Working condition	-1.649	.358	-.313	-4.608	<.001
Social support	2.560	.378	.437	6.770	<.001
Psychological aspect	-4.233	.625	-.429	-6.775	<.001
Physical aspect	1.234	.296	.297	4.175	<.001
Constant (a)	59.820	6.906		8.662	<.001

$R=0.722$, $R^2=0.521$, Adj $R^2 = 0.512$, Std. Error of the Estimate = 9.454, $F = 54.191$

4. Discussion

The prediction model analyzed reported four factors were affecting stress levels during COVID-19 pandemic among village health volunteers in rural areas, Thailand, overall selected factors accounted for 52.1% ($R^2 = 0.521$) of the variance stress levels during COVID-19 pandemic among village health volunteers in rural areas including; working conditions, Social support, psychological aspect, and physical aspect.

Working conditions were associated with stress levels of the VHVs. This assumption can be explained that good working conditions and environment are likely to facilitate the practice

of VHVs, resulting in a limit on stress levels. This finding is in line with a study by Wuttaphan [17] and Jiaviriyaboonya [18] which found that working conditions could significantly predict a chance of stress from work among the participants. Social support was related to the stress level of the VHVs. This may be because a person receiving social assistance and having good interaction with others in the society are more likely to better cope with stress. This finding is consistent with a study by Wuttaphan [17] and Chen et.al [19] which found that social support significantly predicted the likelihood of work-related stress in the participants. The psychological aspect

was related to the stress levels of the VHVs. This association could be explained that good mental health could lead to a good state of mind and worried independence which may help reduce the stress level of the VHVs. This result is consistent with the study of Wuttaphan [17] and Sumpuntharat [20], which suggests that when an individual suffers from stress and is unable to cope well with stress, their mind can be negatively affected. Any factors related to working with high psychological pressure could cause stress.

The physical aspect was related to the stress levels of the VHVs. It is due to the fact that being healthy, and lack of disease could minimize stress. This finding is consistent with the study of Wuttaphan [17],

Taejaremwiriyakul et al. [20] and Sumpuntharat et.al. [22] which found that when a person suffers from stress and is unable to eliminate it, they will be impacted physically. Factors related to working with high stress can cause stress.

5. Conclusion

Factors affecting stress levels of the VHVs in the rural areas were working conditions, social support, psychological aspect, and physical aspect.

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