Journal of Rural Community Nursing Practice (JRCNP)
Volume 1 Issue 2, September 2023, pp 174-184
https://ebsina.or.id/journals/index.php/JRCNP
eISSN 2986-7401 pISSN 2986-8424

Competency Assessment of Health Volunteers in Recording and Reporting Community Health Status in Thailand

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Article History
Submitted: 25-08-2023
Revised: 29-09-2023
Accepted: 29-09-2023

ABSTRACT

Health volunteers are selected based on their community knowledge, even with limited formal education. They play crucial roles including complex and technical tasks, such as recording and reporting. The aim of this study was to compare the competency in recording and reporting among health volunteers based on their education qualifications. A cross-sectional survey was conducted at a subdistrict hospital in Thailand. Data were collected using the newly developed questionnaire from a purposive sample of health volunteers (N=70). Competency differences were assessed using non-parametric statistics between 44 volunteers with primary education and 26 with secondary education or higher. A total of 70 health volunteers were included in the analyses, yielding a participation rate of 95.9% (70 out of 73). The majority of participants were female (84.3%) and the average age was 57.5 years. Those with secondary education or higher demonstrated significantly better competency in recording and reporting community health status ($p = .01$). The findings emphasize the need to enhance competency among health volunteers with lower education levels. Nurses in primary care settings can provide guidance, training, and continuous support to empower health volunteers for effective performance.

KEYWORDS

Competency, Data reporting, Health volunteers, Recording, Reporting

How to cite:
Jittimanee, S., & Suwankij, J. (2023). Competency Assessment of Health Volunteers in Recording and Reporting Community Health Status in Thailand. Journal of Rural Community Nursing Practice. 1(2), 174–184. https://doi.org/10.58545/jrcnp.v1i2.208

1. BACKGROUND

Health volunteers play a vital role in promoting health of community, especially in low and middle-income countries where access to health services is limited. Their understanding of the local social context enables them to address community needs effectively. These volunteers undertake a wide array of tasks, from distributing insecticides to combat mosquito-borne diseases to more complex duties such as measuring blood pressure and documenting health information for community members. Within this landscape, nurse supervisors in primary care settings play an instrumental role in supporting health volunteers and overseeing their diverse responsibilities improved health outcomes (Sittipreechachan et al., 2022; Weiss et al., 2015).

Competency is defined as knowledge, skills, and attributes to help produce better health outcomes (Fukada, 2018). Based on the literature, 54.5 to 60.4% of health volunteers had inadequate skills to serve their role and poor performance in making monthly reports (Kimbugwe et al., 2014, Pongvongsa et al., 2011). Common factors affecting competency of health volunteers were training, regular supervision, and logistic support (Safary, 2021, Woldie et al., 2018). However, limited evidence is available to understand the influence of educational factors on some complex, technical tasks including recording and reporting on health status.

In Thailand, health volunteers are a fundamental part of the primary healthcare system. They are chosen based on their community knowledge, even if they have limited formal education (Jiaviriyaboonya, 2022). Once officially appointed, they serve in the long term without a specified limit. Each volunteer oversees the health of 10-15 households, making them the first responders to even minor health changes within these homes. Swift reporting of incidents to their supervisors, typically nurses, is a critical aspect of their role. Additionally, the monthly report serves as a crucial tool that assists these volunteers in closely monitoring the health status of these households they care for. Failing to submit an accurate report not only means missing an opportunity to identify incidents but also undermines their essential role.

However, the dynamics have evolved, even in rural areas, particularly privacy and lifestyles. Community members are often not at home during the day or frequently in motion, disrupting traditional interaction patterns. Moreover, certain data in the monthly report, like teenage pregnancy and smoking rates, are sensitive topics. Conversely, data such as Body Mass Index (BMI) or salt consumption can be challenging for health volunteers with only a primary education to comprehend (Karuhadej et al., 2019). Therefore, health volunteers must possess the necessary skill, knowledge, and attributes required to adeptly collect the monthly report data during these evolving community dynamics.

This study aimed to compare the competency in recording and reporting among health volunteers based on their education qualifications. The research hypothesis was knowledge, skills, and attributes concerning the recording and reporting task among health volunteers with secondary education or higher were higher than those with primary education.

2. METHODS

Design and setting

This study was a cross-sectional survey, that was conducted in a subdistrict hospital in Pathum Thani Province, Thailand (located next to Bangkok). Coving a population of 4,035, the hospital offered primary outpatient care services without inpatient care. Two public health officers, one registered nurse, and one dental assistant provided primary outpatient care services, while inpatient care remained unavailable.

Purposive sampling was used, and all 73 health volunteers were invited to participate, resulting in a total sample. The exclusion criterion was being as absent from work due to sickness or other reasons during data collection. Qualification, roles, tasks, and management system of health volunteers in Thailand have been described elsewhere (Kowitt et al., 2015).

Variable

Education level was categorized into two groups: primary education (4 to 6 years) and secondary education or higher (7 years or more).

The recording and reporting competency of health volunteers involved knowledge, skills, and attitudes (Cowan et al., 2007; Fukada, 2018) essential for handling health status data.

Instruments

The recording and reporting competency was measured through a questionnaire developed by the investigators because no existing tools were available for assessing the competency of health volunteers concerning recording and reporting. The questionnaire's Items were based on related studies (Kowitt et al., 2015; Safary, 2021) and the monthly form they fill out (Table 1). This included aspects like smoking, premature death from noncommunicable diseases, obesity, teenage pregnancy, and salt intake.

The questionnaire consisted of 10 items categorized into knowledge (five items), skill (one item), and attitudes (four items). Knowledge items had four choices with correct responses given one point. The skill assessment required demonstrating BMI calculation using a chart (correct = 1, incorrect = 0). Attitudes included positive and negative items rated on a 5-point Likert scale. Total scores ranged from 4 to 26 points, with higher score indicating a higher level of competency.

Table 1. Monthly Reporting Form for Health Volunteers in Thailand

No	Description	Unit	Results
1	**Health promotion**		
1.1	- Pregnant women's home visit for health education	person	
	- Pregnant women aged less than 15 years (primigravidarum)	person	
1.2	- Health education home visit for first-time mothers after delivery	person	
	- Mothers who did not complete 6 months of breastfeed (the first baby)	person	
1.3	- Health education home visit for older people	person	
	- Older people living alone with newly diagnosed chronic disease	person	
1.4	- Health care home visit for people with disabilities	person	
2	**Disease surveillance, prevention, and control**		
2.1	- Dengue fever surveillance, prevention, and control	household	
2.2	- Influenza surveillance, prevention, and control	household	
2.3	- Healthcare intervention for at-risk groups: surveillance, screening, health education for diabetes, hypertension, cancer, heart disease, and cardiovascular disease	person	
2.4	- Health education on the use of iodized salt in food products	household	
2.5	- Health education for reducing sugar, fat, and salt consumption	household	
3	**Rehabilitation**		
3.1	- Home visit for individuals with diabetes, hypertension, cancer, or heart disease	time	
4	**Consumer protection**		
4.1	- Food safety surveillance and health education	time	
5	**Health management and community participation in subdistrict-level health planning**		
5.1	- Participation with volunteers from other organizations	time	
5.2	- Health planning development, financial request, health campaign, and evaluation	time	
6	**Other activities such as people enrolled in the royal campaign for quitting smoking program**	**person**	

Data collection

Data collection was carried out over a one-month period between 3 November and 3 December 2021. A brief information session about the study was organized during a monthly meeting, where comprehensive information were shared with health volunteers. Information sheets detailing the study were provided to all health volunteers during this session. Written consent was obtained from each health volunteer. Subsequently, pencil and questionnaires

were provided to them when they attended their work duties at the hospital.

For health volunteers with primary education, the investigators read the questions out loud and guided them in completing the questionnaire. Participants with secondary education or more completed the questionnaire independently and returned their questionnaire directly to the investigators. Additionally, each participant was individually observed by investigator while performing the skill assessment to calculate BMI of a given weight and height using a BMI chart.

The questionnaire took approximately 15-20 minutes to complete, and participants received a cash compensation of 80 THB (~US$2.35) for their valuable participation in the study.

Data analysis

Data were analyzed using SPSS for Windows, Version 28. Descriptive statistics described frequency, proportion, mean, and standard deviation. Continuous variables were tested for normality with the Kolmogorov-Smirnov test. Since none met the normality assumption, non-parametric statistics, the Mann-Whitney U test for continuous variables and Chi-square test for categorical variables, were used to identify competency differences between volunteers with primary education and those with secondary education or higher.

Ethical consideration

Ethical approval was obtained for the study (Approval number: PPHO-REC 2021/24), and written consent was acquired from all participants. To ensure confidentiality, participants were assigned codes, and questionnaire responses and informed consent documents were securely stored in a locked cabinet. The database file was password-protected, with only two investigators having access to the codes, passwords, and the key to the cabinet.

3. RESULTS

A total of 70 health volunteers participated in the analysis, resulting in a participation rate of 95.9% (70 out of 73). The distribution based on education is as follows: 62.9% completed primary education, 32.8% completed secondary education, 1.43% completed diploma/high vocational certificate, and 2.9% completed s Bachelor's degree.

Table 2. Characteristics and Competency of Recording and Reporting Based on Education Level.

Characteristics	Total (n=70)	Education level		*P* value
		Primary (n=44)	Secondary or higher (n=26)	
Sex, n (%)				
Male	11 (15.7)	5 (11.4)	6 (23.1)	.31[a]
Female	59 (84.3)	39 (88.6)	20 (76.9)	
Age (years), n (%)				
41-50	15 (21.4)	5 (11.4)	10 (38.5)	
51-60	30 (42.9)	16 (36.4)	14 (53.8)	
61 or above	25 (35.8)	23 (52.2)	2 (7.7)	
Min-Max (mean ± SD)	41-74 (57.5±7.8)	41-74 (60.4±7.4)	41-63 (52.7±5.9)	<.01[b]
Health insurance scheme, n (%)				
Universal health coverage	54 (77.2)	35 (79.5)	19 (73.1)	.34[a]
Social health insurance scheme	11 (15.7)	5 (11.4)	6 (23.1)	
Civil servant scheme	5 (7.1)	4 (9.1)	1 (3.8)	
Volunteering experience (years), n (%)				
10 years or below	33 (47.1)	17 (38.6)	16 (61.5)	
11-20 years	20 (28.6)	12 (27.3)	8 (30.8)	
21 years or above	17 (24.3)	15 (34.1)	2 (7.7)	
Min-Max (mean ± SD)	1-35 (13.2±9.9)	1-35 (15.7±10.1)	1-26 (9.0±8.4)	.01[b]
Competency in recording and reporting SDGs data				
Min-Max (mean ± SD)	13-23 (18.6±2.0)	13-22 (18.1±2.0)	16-23 (19.5±1.9)	.01[b]

[a] Chi-square test.
[b] The Mann-Whitney *U* test.

Table 2 presents a comparison of demographics and competencies related to recording and reporting based on education level. The majority of health volunteers were female and had universal health coverage. Health volunteers with primary education had a higher mean age and mean years of volunteering (60.4 and 15.7 years) compared to those with secondary education or higher (52.1 and 9.0 years). Those with higher education showed significantly better competency (Mean score of 19.5 for secondary education versus mean score of 18.1 for primary education, p = .01).

4. DISCUSSION

This study found that health volunteers with higher education demonstrated significantly better competency in recording and reporting compared to those with primary education. The finding is consistent with prior research conducted in Malawi and Lao PDR, which also reported lower competency in recording and reporting among health volunteers with lower education levels (Pongvongsa et al., 2011; Woldie et al., 2018).

Health volunteers with lower education levels might have faced challenges with the complexity of medical

terminology related to health status (Karuhadej, et al., 2019). Educational level can impact their cognitive ability to understand and apply technical knowledge. In Malawi, health volunteers expressed difficulty completing the activity form, leaving some fields blank, such as BMI and blood pressure, despite receiving training (Woldie et al., 2018).

In Thailand, there are approximately 1 million health volunteers, each responsible for 10-15 households (Krassanairawiwong et al., 2021). They receive 1,000 THB (~US$27.7) per month as financial compensation and must submit a monthly report (Table 1) to the subdistrict hospital (Thai Government Gazette, 2023). The government spends about 1 billion THB (~US$27.7 million) per month to support these health volunteers nationwide. The findings underscore the importance of improving competencies of health volunteers with primary school education in recording and reporting SDGs data for cost-effectiveness.

Nurse supervisors within primary care settings can play a crucial role in improving health volunteers' performance (Kweku et al., 2020). They achieve this by providing training, raising awareness of health status data, and offering psychological support to enhance motivation, integrity, and accountability among health volunteers. Additionally, nurse supervisors can identify candidates who require close supervision based on the accuracy of data in the reports. For example, a study conducted in Thailand highlighted that nurses supervised health volunteers involved in a competency development program. This led to an enhancement in the health volunteers' competency to analyse the TB situation within the village (Choowong, 2020).

The results imply that there is a need to improve competencies of health volunteers to perform recording and reporting tasks. Specifically, this study found that health volunteers with higher education showed better competency in recording and reporting health status data. Therefore, nurse supervisors in primary care settings should adopt a tailored approaches based on the education level of health volunteers. First, nurse supervisors meet health volunteers monthly, and they could integrate a series of trainings to increase knowledge and skills and raise awareness of health status data. These training sessions should be designed separately for health volunteers with primary education and those with secondary education or higher. Second, nurse supervisors collect monthly reports from health volunteers, so they

could identify candidates needing close supervision based on incorrect data in the reports. Finally, nurse supervisors, embracing the holistic approach can apply psychological support to promote, motivation, integrity, and accountability among health volunteers. These psychological factors are important in empowering health volunteers to effectively carry out their tasks.

This study has some limitations. The data were collected in one community, limiting the generalizability of the findings to other settings. Additionally, the questionnaire focused solely on high impact data (smoking, premature death from noncommunicable diseases, obesity, teenage pregnancy, and salt intake), neglecting other diseases such as dengue fever, influenza, or COVID-19 for which health volunteers might have good knowledge and skills.

5. Conclusions

A significant difference was observed in recording and reporting competency among health volunteers based on their education level. Health volunteers with secondary education or higher demonstrated a greater level of competency in recording and reporting tasks compared to those with primary education. While limitations of health volunteers should be recognized, effective measures from nurse supervisors in primary care settings are needed to enhance recording and reporting competency of health volunteers concerning health status data which are available at the community level.

ACKNOWLEDGMENT

We would like to thank the Klong Six Sub-District Hospital, Khlong Luang District, Pathum Thani, Thailand, and the respondents for their contribution in this study.

AUTHOR CONTRIBUTIONS

Substantial contributions to conception, data collection, analysis, and writing: Sirinapha Jittimanee and Jirapa Suwankij. Manuscript revisions: Sirinapha Jittimanee.

CONFLICT OF INTEREST

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

DATA AVAILABILITY STATEMENT

The data are not publicly available due to privacy or ethical restrictions.

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