

**MINISTRY OF TRAINING & MINISTRY OF HEALTH
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TRAN AN CHUNG

**REPORT AND SOLUTIONS ON IMPROVING
KNOWLEDGE OF PRIMARY HEALTHCARE
AND PRACTICING CONSULITING
HEALTHCARE SERVICES FOR HEALTHCARE
WORKERS IN LONG AN PROVINCE, 2018**

**Department: Public Health
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**LIST OF
RELATED PUBLISHED ARTICLES BY AUTHOR**

1. **Tran An Chung**, Huynh Thi Khanh Linh, Truong Thi Ngoc Diem, Doan Ngoc Nhuan, Vuong Cam Tu, Le Van Tuan, Pham Xuan Da, Nguyen Thi Kim Nhung, “Current situation and some factors related to the capacity of Primary healthcare of grassroots health workers in Long An in 2018”. *Vietnam Journal of Preventive Medicine*, XXIX, vol 13 – 2019, pp 53-63.
2. **Tran An Chung**, Huynh Thi Khanh Linh, Truong Thi Ngoc Diem, Pham Xuan Da, Nguyen Thi Kim Nhung , “Intervention effectiveness to improve the capacity of primary health care for commune health workers in Can Giuoc District, Long An Province”. *Vietnam Journal of Preventive Medicine*, XXIX, vol 13 – 2019, pp 64-73.

INTRODUCTION

Primary health care (PHC) is an approach to health that goes beyond the traditional health care system to focus on equity of health - facilitating social policy development. Health related Sustainable development goals can only be achieved based on PHC.

In Vietnam, PHC is integrated to grassroots health care level and its medical workforce. A number of recent studies reported several limitations in this target group. Only 19.4% of doctors working at commune health stations had knowledge about the contents of PHC and 3.2% of them had knowledge about the principles of PHC. Moreover, only 23.5% of health workers gave greetings, 9.2% gave explanation and counseling, 16.1% asked for the cause of the problem during the counseling session. Several studies on PHC have been conducted in Long An, but no studies focused on the management and practice of health counseling in PHC. Therefore, this study will provide accurate evidence to implement future orientations of the health sector in general, and in Long An province in particular.

Research Objectives

- 1. Describe the status of knowledge about PHC and practice on health counseling of grassroots health workers in Long An Province, 2018*
- 2. Identify factors related to knowledge about PHC of grassroots health workers in Long An Province, 2018*
- 3. Evaluate the effect of several interventions to improve the knowledge about PHC and practice of health counseling of grassroots health workers in Long An province, 2018.*

New findings about scientific and practical values of the study

The study systematically assessed the status of knowledge about primary health care and health counseling practices of grassroots health workers in Long An province. In Vietnam, this was the first study applying technology interventions (via the fanpage PHC.LA Vam Co 2018 and SMS system), in association with training and guidance, to improve knowledge about content, principles of PHC and health counseling practices; which showed large effect among grassroots health workers. This is a new scientific feature of this study.

This study was highly applicable for the health sector to develop online training, instruction, information sharing and interactions on PHC or other health issues between experts and target groups.

STRUCTURE OF THE THESIS

The thesis consisted of 147 pages excluding references and appendices, with 51 tables and 13 figures.

Introduction: 2 pages; Literature review: 37 pages; Study participants and method: 24 pages; Research results: 44 pages; Discussion: 37 pages; Conclusion: 2 pages; Recommendation: 1 page.

Chapter 1. LITERATURE REIVEW

1.1. Knowledge about primary health care and practice on health counseling among grassroots health workers.

1.1.1. Knowledge about primary health care

According to recommendations of the World Health Organization, capacity of health workers (based on their knowledge, skills and attitudes) to provide and deliver high quality health services remains a major problem in many countries. The quality of work performed by health workers (based on their performance's efficiency and effectiveness) is influenced by many factors. In high-income countries such as Australia, the United Kingdom and the United States, the quality of health workers is recognized via the methods used to improve the quality of health human resources. In South Africa, most managers at the district/commune level are required to take additional capacity training, of which knowledge about PHC is the most important topic. WHO has recommended the integration of PHC approach in the basic training program for health workers.

Circular No. 33/2015/TT-BYT dated 27/10/2015 of the Ministry of Health stipulated that health stations of communes, wards and towns had the functions to providing and implementing primary health care services for people in the areas. Currently, there are more than 11,400 commune health stations (CHS) nationwide, however, CHSs are able to provide only 50-70% of technical services and about 40% medicines in the list of medicines classified by level. The implementation of PHC at the grassroots level still has limitations, for example

the popularity of CHS health workers with less than two year of work experiences in charge of health communication, education and training (IEC) who did not receive adequate training; 89.9% of the staffs said that they lacked knowledge and skills to provide health IEC; only 7.9% of health workers knew symptoms of a typical malaria case; 5.0% knew all the steps to make a supplement meal. 19.4% and 3.2% of CHS staffs acquired knowledge on contents and principles of PHC respectively.

1.1.2. Practice of health counseling

This throughout activity plays an important role in all PHC contents, accounting for 86.67% of all health IEC activities. However, regarding the steps of a health counseling session, only 23.5 % of health workers gave greetings, 9.2% gave explanations and counseling, 16.1% asked for the cause of the problem. Acceptable practice of counseling on child nutrition was only accountable for 14.1%, the numbers were 14.4% for counseling on immunization, 13.6% for counseling on care for sick children, and 7.1% for counseling on prenatal care.

Therefore, the grounded limitations in PHC need to be studied and evaluated to develop suitable countermeasures. Until now, most of the studies on PHC in Vietnam have focused on specialized fields such as maternal and child health care, epidemic prevention, or organization and human resource structure for PHC. Management and practice of health counseling in PHC have not been studied in Vietnam as well as Long An province. Therefore, it is essential to implement the study titled ***“Report and solutions on improving knowledge of***

primary healthcare and practicing consulting healthcare services for healthcare workers in Long An province, 2018”.

Chapter 2. RESEARCH METHODS

2.1. Cross-sectional Study

2.1.1. Study participants: Health staffs in grassroots level who had medical and pharmaceutical expertise, had been working for one year or more (by the time of the survey), and presented during the study period.

2.1.2. Time and place: From November, 2016 to November, 2020 in Long An province

2.1.3. Study design: Analytical cross-sectional study with a combination of quantitative and qualitative analysis

2.1.4 Sample size: Select all participants that met the selection criteria. 421 participants at the District Health Center and CHSs in Can Giuoc, Ben Luc districts and Tan An city were surveyed.

2.2 Intervention study

2.2.1. Study participants: Health workers in CHSs in Can Giuoc district (intervention) and Ben Luc district (control)

2.2.2. Time and place of intervention:

- Intervention period: 02/7/2018 – 31/12/2018.
- Location: 2 districts: Can Giuoc and Ben Luc, Long An province

2.2.3. Study design

- Community based controlled intervention study with pre and post-test design.

2.2.4. Sample size

- Quantitative research: In Can Giuoc, all CHS staffs who had a working period of 1 year or more, presented at CHSs during the study period were selected (109 participants). In Ben Luc, 104 CHS staffs who met the similar inclusion criteria were invited to join the study.
- Intervention: In Can Giuoc (intervention district), all CHS staff have a working time of 1 year or more, present at CHS during the study period (100 people). Ben Luc randomly selected 100 CHS staffs that had a working time of 1 year or more and were present at CHSs during the study as a control.
- Qualitative research on the appropriateness of interventions to improve knowledge about PHC and principles, and practice of health counseling: 3 group discussions.

2.2.5. Sampling procedure

- Quantitative survey:
 - Step 1: Select the target district - Can Giuoc as the intervention and Ben Luc district as the control to evaluate the effectiveness of the intervention. Because these two districts had similar characteristics in terms of geographical location, economy, socio-cultural features. There was Can Duoc district (50km) between Ben Luc district and Can Giuoc district, so confounding factors could be avoided. .
 - Step 2: Select all CHS health workers in communes and towns of Can Giuoc and Ben Luc districts.
- Qualitative: randomly select 3 CHSs in Can Giuoc district, namely Phuoc Vinh Dong, Tan Tap and Dong Thanh CHSs, to conduct 3 discussions with 23 participants.

2.2.6 Intervention activities in Can Giuoc district

Activities included: (1) Knowledge training, (2) instruction for counseling practice, (3) Technology training (social media, website, SMS), and supervision and assistance.

2.3. Ethical consideration

The research protocol was approved by the ethics committee of the National Institute of Hygiene and Epidemiology under the Hygiene and Epidemiology certificate No. 15/2018 dated 17/6/2018 about research facility and the voluntary of participants on the scientific and ethical aspects of the study. The information provided by the study participants was confidential.

The study property was only for public health care, not for any other purposes.

Chapter 3. RESULTS

3.1. Situation of knowledge about primary health care and practice of health counseling of grassroots health workers in Long An province, 2018.

Table 3.1. Knowledge of study participants on the principles of PHC

No.	Knowledge about PHC	Subjects	
		Undergraduate, post graduate	College, intermediate
		n (%)	n (%)
1	Quantity of principles	21 (21.0)	43 (13.4)
2	Equity	31 (31.0)	48 (15.0)
3	Strengthening prevention and health rehabilitation	21 (21.0)	39 (12.1)
4	Community participatory	24 (24.0)	46 (14.3)
5	Selection of appropriate techniques	17 (17.0)	45 (14.0)
6	Interdisciplinary coordination	21 (21.0)	41 (12.8)
7	Fully stated all 5 principles	14 (14.0)	29 (9.0)

Among health workers with undergraduate and post-graduate qualifications, 21% of them reported the correct number of principles. Higher percentage of health staffs provided a correct answer for Equity principle (31%) in comparison with other principles. 14% of them stated all 5 principles. The respective numbers for the groups of health staff with college and intermediate degrees were 13.4%, 15.0%, 9.0%.

Table 3.2. Score on General knowledge about PHC of study participants

Classification of knowledge score		District			Total (n=421)
		Tan An (n=111)	Ben Luc (n=169)	Can Giuoc (n=141)	
Good	Quantity	4	8	5	17
	%	3.6	4.7	3.5	4
Average	Quantity	6	13	11	30
	%	5.4	7.7	7.8	7.2
Poor	Quantity	101	148	125	374
	%	91.0	87.6	88.7	88.8

Results on knowledge about PHC of the study participants based on a rating scale showed that 374 participants (88.8%) had the total score of ≤ 30 points (poor); 30 participants (7.1%) had an average score of knowledge, which ranged from 31 to 42; 17 participants (4%) had a total score of ≥ 43 which was counted as having good knowledge.

3.1.4. Evaluation of health counseling practice skills

The evaluation based on the proper and adequate implementation of 6 steps of health counseling in accordance with the 6G principle.

Table 3.3. Classification of practical score (n = 296)

Practice classification	Province						Total	
	Tan An (n ₁ =83)		Ben Luc (n ₂ =104)		Can Giuoc (n ₃ =109)			
	Quantity	%	Quantity	%	Quantity	%	Quantity	%
Acceptable	6	7.2	6	5.8	7	6.4	19	6.4
Not acceptable	77	92.8	98	94.2	102	93.6	277	93.6

The percentages of workers with acceptable practice of health counseling were 7.2% in Tan An, 5.8% in Ben Luc and 6.4% in Can Giuoc and the percentage of the whole sample was 6.4%. Thus, the percentage of acceptable practice on health counseling in the three studied province were similar.

3.2. Factors related to knowledge about primary health care of grassroots health workers in Long An province, 2018

3.2.1. Personal factors related to knowledge about primary health care

Table 3.4. Univariate and Logistics regression analysis about the association between individual characteristics and general knowledge of the study topic

Factors		Participants with acceptable level of knowledge (%)	OR (95%CI)	aOR (95%CI)
Age	≤ 30	12 (7.6)	1,8 (0,93-3,67)	2,1 (0,89 – 5,11)
	> 30	35 (13.2)		
Gender	Female	36 (10.7)	1,2 (0,57-2,50)	1,3 (0,58 – 2,89)
	Male	11 (12.9)		
Work Position	Employee	27 (7.9)	3,6*** (1,90-6,91)	2,3* (1,13 – 4,88)
	Manager	20 (24.1)		
Education	College, Intermediate	17 (5.3)	7,6*** (3,99-14,85)	6,6*** (3,20 – 13,95)
	Undergraduate/post graduate	30 (30.0)		
Seniority	≤ 5 years	2 (2.3)	6,4* (1,79-39,98)	4,5 (0,95 - 21,77)
	> 5 years	45 (13.3)		

(*): $p < 0.05$; (**): $p < 0.001$

The model was controlled by factors such as age, gender, work position, qualification, and seniority.

Univariate analysis showed a significant association between work position, qualification and seniority with the general

knowledge of the study participants ($p < 0.001$ and $p < 0.05$). Health care workers as a manager were more likely to have acceptable knowledge, compared with the normal employee groups (OR = 3.6, 95% CI: 1.9-6.91). Participants with qualification as graduate had a better level of knowledge than the remaining group (OR = 7.6, 95% CI: 3.99-14.85). Health care workers with over 5 working years had a better level of knowledge than other staffs (OR = 6.4, 95% CI = 1.79-39.98). The multivariate regression model eliminated interference of other factors namely age, gender and seniority showing that the work position and qualifications were related to the knowledge of the study participants with the adjusted odd ratio respectively (aOR = 2.3, 95% CI: 1.13 - 4.88), and (aOR = 6.6, 95% CI: 3.20 - 13.95).

3.2.2. Effect of several system factors on the knowledge of the study participants

The results of the group discussion mentioned above showed that system factors affecting knowledge and practice of study participants included:

- Training policy of an organization;
- Inability to access to sources of PHC and update information;
- Unavailability of effective tools and solutions for information provision, training and regular supervision;
- Passivity in implementing PHC activities at CHS.

3.3. Effect of several interventions to improve the knowledge about primary health care and practice on

health counseling of grassroots health workers in Long An Province

3.3.1. Intervention effect on knowledge about primary health care

Table 3.5. Intervention effect to improve knowledge about PHC principles

Contents		Interventions				Control				Intervention Effect (effect size) (%)	
		Undergraduate, Postgraduate		College, Intermediate		Undergraduate, Postgraduate		College, Intermediate		Undergraduate, Postgraduate	College, Intermediate
		Before n=32	After n=22	Before n=109	After n=78	Before n=44	After n=20	Before n=125	After n=80		
Known quantity of principle	Quantity %	7 21.9	18 81.8	15 13.8	48 61.5	7 15.9	5 25.0	14 11.2	12 15.0	217	313
	p	<0.001		<0.001		>0.05		>0.05			
Fully stated 5 principles	Quantity %	5 15.6	15 68.2	10 9.2	40 51.3	5 11.4	2 10.0	12 9.6	10 12.5	324	429
	p	<0.001		<0.001		>0.05		>0.05			

Before the intervention, 21.9% of health staffs with undergraduate and post graduate qualifications knew the quantity of principles; after the intervention, the figure increased to 81.8% (IE: 217%). Similarly, percentage of staffs with qualifications as college and intermediate was 13.8% before intervention and raised to 61.5% after intervention (IE: 313%). The percentage of participants with graduate and postgraduate qualifications who fully stated 5 principles of PHC before intervention was 15.6%; after intervention, it increased to 68.2% (IE: 324%). This pre-test figure in the group with qualifications as college and intermediate was 9.2%; and increased to 51.3% after intervention (IE: 429%). For the control group, insignificant change in knowledge was observed before and after intervention ($p > 0.05$).

Table 3.6. Intervention effect to improve the level of general knowledge

Classification of knowledge score		Intervention		Control		Intervention Effect (%)
		Before n=141	After n=100	Before n=169	After n=100	
Good	Quantity	5	62	8	3	1611
	%	3.5	62.0	4.7	3,0	
	P	<0.001		>0.05		
Average	Quantity	11	33	13	8	319
	%	7.8	33.0	7.7	8,0	
	P	<0.001		>0.05		
Poor	Quantity	125	5	148	89	92,7
	%	88.7	5.0	87.6	89,0	
	p	<0.001		>0.05		

Before the intervention, in the intervention group, 3.5% of the participants had good knowledge, 7.8% average, and 88.7% had poor level. After the intervention, 62.0% of them achieved good knowledge, IE=1611% ($p < 0.001$), 33.0% average, 5.0% poor ($p < 0.001$). For control group, the change in knowledge level was not statistically significant ($p > 0.05$).

3.3.3. Effect of interventions to practice on health counseling

Table 3.7. Intervention effect to improve practice on health counseling

Practice rating		Intervention		Control		Intervention Effectiveness (%)
		Before n=109	After n=100	Before n=104	After n=100	
Acceptable	Quantity	7	31	6	5	370
	%	6.4	31	5,8	5	
	p	<0.001		>0.05		

After intervention, the percentage of health workers with acceptable counseling practice skills changed from 6.4% to 31% EI=370% $p < 0.001$ with statistical significance.

Health staffs in the control district had no significant change in practice on health counseling.

DISCUSSION

4.1. Situation of knowledge about primary health care and practices of health counseling of grassroots health workers in Long An province, 2018.

4.1.2. Situation of knowledge about primary health care of study participants

Knowledge of the participants about PHC content: The percentage of participants that had knowledge about PHC in group with qualification as graduate and postgraduate was 26% and group with qualification as college and intermediate was 13.7%. This result was higher than the research result reported by Tran Ngoc Huu in 2002, in which, 19.4% of staffs working

at CHSs had knowledge about PHC contents [46]. The difference was due to the fact that over a long period of time, grassroots health workers had been trained to improve their knowledge, but that was not effective.

Knowledge of the participants about principles of PHC: the number of health workers with undergraduate and postgraduate qualifications that known the quantity of PHC principles was 21%, regarding the content of PHC principles, the highest percentage belonged to the first principle with 31%, percentage of participants that fully stated all 5 principles reached 14%. The amount of health workers with college, intermediate and equivalent qualification that known the quantity of PHC principles was 13.4%, regarding the content of PHC principle, most participants knew the first principle, with highest percentage 15.0%, the number of participants that fully stated all 5 principles reached 9.0%. Result from Table 3.8 showed that 14% of the participants with graduate and postgraduate qualification and 9% of the participants with college and intermediate qualification had knowledge about this content. According to Tran Ngoc Huu's research in 2002, only 3.2% of doctors at the commune level had knowledge of the principles of PHC, which was lower than the results of this study. Over time the participants were updated on PHC, however, such improvement was not enough. Improvement of knowledge for grassroots health workers is a matter of concern.

4.1.4. Practice of Health counseling

Regarding health counseling, 6.4% of health workers had acceptable skills and 93% did not. A number of studies also

pointed out the limitations of health communication and counseling skills at grassroots health facilities, in which the health IEC activities mainly consisted of counseling, community IEC and writing scripts for radio broadcast only accounted for 40%. The implementation of health counseling at CHSs required health workers to have diverse knowledge about PHC. However, in reality, there were many objective and subjective limitations. 94.3% participants gave lack of funding as a reason; 85.7% said that there was a shortage of staffs for health IEC at district levels. 82.9% said that it was the lack of equipment for health IEC activities; 51.4% said it was the lack of knowledge and skills; 42.6% thought it was lack of working conditions. Le Trung Quan's research reported that the percentage of good practice was only 14.3% and no health workers had good knowledge.

4.2. Several factors related to the knowledge of the study participants

Significant associations between work position, qualifications and seniority of work and general knowledge of the study participants ($p < 0.001$ and $p < 0.05$). Health care workers as a manager were more likely to have acceptable knowledge, compared with the normal employee groups (OR = 3.6, 95% CI: 1.9-6.91). Participants with qualification as graduate had a better level of knowledge than the remaining group (OR = 7.6, 95% CI: 3.99-14.85). Health care workers with over 5 working years had a better level of knowledge than other staffs (OR = 6.4, 95% CI = 1.79-39.98). The multivariate regression model eliminated interference of other factors namely age, gender and

seniority showing that the work position and qualifications were related to the knowledge of the study participants with the adjusted odd ratio respectively (aOR = 2.3, 95% CI: 1.13 - 4.88), and (aOR = 6.6, 95% CI: 3.20 - 13.95).

Some systematic factors affecting the knowledge of the study participants through in-depth interviews and group discussions included the training policy that did not meet the actual needs, limited opportunities for further training.

4.3. Effect of solutions to improve knowledge about the primary health care and practice of health counseling of grassroots health workers in Long An Province.

4.3.3.1 Effect on improving knowledge for study participants.

The effect on improving general knowledge: Before the intervention, in the intervention group, 3.5% of the participants had good knowledge, 7.8% average, and 88.7% had poor level. After the intervention, 62.0% of them achieved good knowledge, IE=1611% ($p < 0.001$), 33.0% average, 5.0% poor ($p < 0.001$). For control group, the change in knowledge level was not statistically significant ($p > 0.05$).

4.3.3.3 Improve practice on health counseling.

Health counseling was a technique associated with all activities in PHC, so the assessment of PHC practice through this skill was highly representative.

After intervention, the percentage of health workers with acceptable counseling practice skills changed from 6.4% to 31% EI=370% $p < 0.001$ with statistical significance. Health staffs in the control district had no significant change in practice on health counseling ($p > 0.05$).

In order to improve the effectiveness of the training and do the appropriate instruction for the participants during the implementation, the research team developed a multi-form training contents, direct instructions and applied role-playing methods to the study participants, especially applying information technology and social networking through the website “PHC.LA Vam Co 2018” and SMS system, this was the unique feature of the study.

CONCLUSIONS

1. Report on knowledge of primary health care and practice on health counseling of grassroots health workers in Long An Province, 2018.

The study at 3 health centers in Tan An city, Ben Luc and Can Giuoc districts in 2018 had a total of 421 participants. Knowledge about PHC of the study participants was limited, in which, 3.5% of study participants had good knowledge, 7.8% had average, and 88.7% had poor knowledge. The percentage of acceptable practice on health counseling was low 6.4%. The study results showed the limitations in knowledge about PHC content of the study participants.

2. Factors related to knowledge about primary health care.

The research results showed a significant relationship between work position and knowledge of the study participants: Health care workers as a manager were more likely to have acceptable knowledge, compared with the normal employee groups (aOR = 2.3, 95% CI: 1.13 - 4.88).

There was an association between educational attainment and knowledge of study participants, people with higher education levels had better level of knowledge (aOR = 6.6, 95% CI: 3.20 - 13.95);

People with 5 years' seniority had better level of knowledge than people with less than 5 years' seniority (aOR = 3.6, 95% CI: 1.26-10.22) $p < 0.05$.

3. Effect of some interventions to improve the knowledge about PHC and practice of health counseling of grassroots health workers in Long An Province

Intervention solutions with training and instructions, especially the application of information technology, which was connecting and interacting via the website “PHC.LA Vam Co 2018”, SMS had effectively improved participants’ knowledge about PHC. Specifically: percentage of health staffs with good knowledge increased to 62.0%, percentage of staffs with acceptable health counseling skills increased to 31% after the intervention. Thus, the results after interventions significantly increased in comparison with that before interventions.

The program was evaluated as effective, sustainable and scalable in other districts in the province.

RECOMMENDATIONS

1. For the Provincial Department of Health

Apply and replicate the model of capacity building on PHC for grassroots health workers across the province; strengthen and supervise training in support of PHC. Organize the transfer of research results to the units wishing to improve PHC capacity for grassroots health workers. The Provincial Centers for Disease Control shall be entrusted to maintain and expand interventions through the website proposed from this study. Continue to research and develop computer-based and smartphone-based interventions programs.

2. For district health centers and commune health stations

Implement primary health care proactively, avoid relying heavily on the higher levels. Apply information technology, connecting and interacting with experts, using practical documents, images, videos, to improve the working capacity of grassroots health workers.