

**THAI NGUYEN UNIVERSITY  
UNIVERSITY OF MEDICINE AND PHARMACY**  
-----

**PHAM MANH CONG**

**THE EAR NOSE THROAT DISEASES IN MONG  
PEOPLE AND EFFECTIVENESS OF COMMUNITY  
INTERVENTION SOLUTIONS  
IN MEO VAC DISTRICT, HA GIANG PROVINCE**

**Speciality: Social Hygiene and Health Administration**

**Code: 62 72 01 64**

**SUMMARY OF PhD. DISSERTATION IN MEDICINE**

**THAI NGUYEN – 2017**

**THE DISSERTATION WAS COMPLETED  
AT THAI NGUYEN UNIVERSITY  
OF MEDICINE AND PHARMACY**

**Scientific supervisors:**

- 1. Prof. PhD NGUYEN VAN SON**
- 2. Assoc. Prof. PhD LUONG THI MINH HUONG**

**Reviewer 1:** .....

**Reviewer 2:** .....

**Reviewer 3:** .....

**The dissertation will be defended at the  
Dissertation committee in University level  
AT THAI NGUYEN UNIVERSITY  
OF MEDICINE AND PHARMACY**

*Time .....date.....month.....year 2017*

**The dissertation can be found at:**

- National Library**
- Learning Resource Center - Thai Nguyen University**
- Library of Thai Nguyen University of Medicine and Pharmacy**

## INTRODUCTION

Ear, nose and throat (ENT) diseases is a common disease. These diseases affect the quality of life and cause many severe consequences and sequelae if it do not have early detected and promptly treated. Many studies show that ENTs have high prevalence in the community. A study in India (2012) shows the prevalence of ear diseases was 46.64%, nose diseases was 18.30% and throat diseases was 12.05%. Phung Minh Luong (2010) shows the prevalence of ENT diseases in Ede ethnic people was 58.9%.

The above findings are well demonstrations about the practical needs of ENT care in the community. In order to get high efficiency in ENT care in the community, the examination of primary health care (PHC) need to ensure quality. Meo Vac district, Ha Giang province is a mountainous district of northern Vietnam, with complex terrain, cold climate, high humidity. The Mong ethnic is popular people in this area. Mong ethnic people tend to live in the high mountain slopes, less body hygiene as well as nose, throat hygiene, along with many old customs in health care...

We conduct a study entitled "The ear, nose, throat diseases in Mong people and effectiveness of community intervention solutions in Meo Vac district, Ha Giang province" to achieve following objectives:

1. To describe the current situation of ENT diseases in Mong ethnic people in Meo Vac district, Ha Giang province in 2013.
2. To evaluate the capacity of health workers at the grassroots level of medical care in otolaryngology at research sites.
3. To evaluate the effectiveness of capacity enhancement solutions in ENT diagnosis and treatment of health workers at Meo Vac district.

## **NEW CONTRIBUTIONS OF THE DISSERTATION**

1) This is a comprehensive study of ENT diseases in Mong ethnic people in Meo Vac district, Ha Giang province. The results show that: ENT diseases in Mong ethnic people in Meo Vac 2013 was relatively popular, including: The prevalence of ENT diseases in Mong ethnic people was 78.8%, of that, the rate in men was 79.6%, in female was 78.0%. The prevalence of ear, nose and throat disease were 16.9%, 31.7% and 59.7% (respectively). The prevalence of a single disease was 64.2%, two diseases comorbidity was 34.3% and  $\geq 3$  diseases comorbidity was 1.5%.

2) This study has been identified some limitation in capacity of primary health workers (PHWs) about ENT examination: The general knowledge about ENT disease at good, moderate and weak level was 22.0%, 34.0% and 44.0% (respectively). The general attitude at good, moderate and weak level was 20.0%, 56.0% and 24.0% (respectively). The general skills at good, average and weak level was 12.0%, 18.0% and 70.0% (respectively). Factors: professional academic degrees, ENT certification, received training workshop, work place, ENT diseases knowledge, ENT diseases attitude were associated with ENT diseases skills of primary health workers in Meo Vac district, Ha Giang province.

3) The training interventions to improve ENT solution and monitor 1 times per month in 12 months had high results, continual and sustainable. The effectiveness after 1 year intervention: The general knowledge, attitudes and skills about ENT diagnosis and treatment at good level of primary health workers in Meo Vac district have increased markedly, with statistical significance ( $p < 0.05$ ). The capacity enhancement solution for PHWs in Meo Vac district had intervention effect (IE) for knowledge was 233.6%; IE for attitude was 283.3% and IE for skill was 469.0%.

## **STRUCTURE OF DISSERTATION**

The dissertation has 130 pages, including: Introduction 02 pages; Chapter 1. Literature review: 38 pages; Chapter 2. Subjects and methods: 23 pages; Chapter 3. Study results: 38 pages; Chapter 4. Discussions: 26 pages; Conclusions: 02 pages, Recommendation: 01 page.

The dissertation results were presented in 37 tables, 05 images and 04 boxes. Dissertation has 115 references, including 62 Vietnamese references and 53 English references.

## **KEY PARTS OF DISSERTATION**

### **Chapter 1. LITERATURE REVIEW**

#### **1.1. The general characteristics of ENT diseases**

#### **1.2. Current situation ENT diseases in the world and Vietnam**

##### ***1.2.1. Current situation ENT diseases in the world***

Many studies of ENT diseases were conducted around the world. The studies have shown relatively high prevalence of ENT diseases in the community and significant difference at ages and professional.

##### ***1.2.2. Current situation ENT diseases in Vietnam***

A study by Tran Duy Ninh et al (2001) in 7 northern mountainous provinces of Vietnam presented the ENT prevalence was 63.61%. A study by Nguyen Thanh Ha et al (2013) presented the prevalence of ENT diseases was 65.0% in primary pupils.

##### ***1.2.3. Factors related to ear, nose and throat diseases***

ENT is a common disease in all ages, which is popular in children. This disease has many different risk factors, including 04 major groups: environmental factors, genetic factors, the prevention behaviors of human and health systems.

### **1.3. ENT care service in primary mountainous health system**

#### ***1.3.1. General assessment about medical examination service of PHC in mountainous areas, including ENT care services***

A study by Nguyen Van Chinh (2011): 10/15 communes had ENT examination kits, these kits are not regularly maintenance and replacement. Nguyen Duy Hoa (2011): 19/23 communes had ENT examination kits, 04 communes do not have ENT examination kits.

#### ***1.3.2. Health human resources in PHC, focus on examination human resource, including ENT examination***

In some northern mountainous provinces, many commune and district PHC do not recruit doctors. The rate of PHWs has properly knowledge and skills in first aid, diagnosis, treatment and management is not high. Nguyen Thi Minh Hieu (2003), the rate of PHWs had proper treatment on sore throat was 12.3%. Pham Huy Dung et al (2001) shows the rate of health workers know about antibiotics using time was 53.4%; the rate of incorrect antibiotic prescribe at the community level was 67.1%.

### **1.4. Community intervention studies to reduce the ENT diseases**

#### ***1.4.1. Several intervention studies around the world***

Robin Youngs and Puran Tharu (2013) conducted a study on village health workers (VHWs) training for ear disease prevention in West Nepal: Training ear care workers in the community, these ear care workers continue to training for other VHWs, do the ear care as well as do the health education for people in the community. The results show high effectiveness in reducing rates of ear disease community. The weaknesses of studies were focused on ear diseases only and professional academic qualifications of ear care workers were not high.

### ***1.4.2. Several intervention studies about reducing ENT diseases in Vietnam***

A study by Phung Minh Luong (2011) about ENT diseases in Ede ethnic people: (1) Survey on KAP VHWs about ENT diseases before training, than training about ENT diseases for VHWs. (2) Do the health education for the community, then evaluate the effectiveness of health education. (3) Conduct health education at 1<sup>st</sup> time examination and do the 2<sup>nd</sup> time examination after 6 months to assess the prevalence, to compare with the 1<sup>st</sup> time. The intervention results point out the knowledge about ENT diseases of people increased 1.99 times compared to before health education. VHW training solution have high effectiveness with  $p < 0.05$ , therefore improving the quality health education about ENT diseases.

### **1.5. Some information about the economy - culture - society and traditional custom of Mong ethnic people**

## **Chapter 2. SUBJECTS AND METHODS**

### **2.1. Study subjects**

Mong ethnic people are currently living and working in Meo Vac district. PHWs are involved in ENT examination in Meo Vac and Dong Van District. ENT patients in PHC of Meo Vac district. Management staffs of PHC in Meo Vac and Dong Van district. Records, reports about referral patients.

### **2.2. Study setting and study time**

#### ***2.2.1. Study setting***

The communes in Meo Vac district; hospitals, the general regional clinics and commune health station at Meo Vac, Dong Van District, Ha Giang province.

#### ***2.2.2. Study time:*** from 03/2013 - 05/2015.

## **2.3. Methodology**

### **2.3.1. Study design**

Design is mix method combined both quantitative research and qualitative: The quantitative study includes cross-sectional descriptive study and intervention control group study. The qualitative study includes group discussions and in-depth interviews.

### **2.3.2. Sampling for quantitative study**

- The sample size of quantitative study: A sample size for cross-sectional study formula was applied, with a minimum of 2176, and 2486 people in the real circumstance.

- The sample size for intervention: A sample size for intervention study formula was applied, with a minimum of 47, and 50 PHWs in the real circumstance. Select the control group and the intervention group according to the ratio of 1: 1, the sample size in the control group of PHWs was 50 in control districts.

- Sampling for diseases determination: Purposely selected Meo Vac districts. Randomly selected 5 communes, randomly selected 5 villages in each commune, conduct ENT examination for all Mong members in the household at selected villages.

- Sampling intervention: District selection: Purposely chose 2 districts, including Dong Van District (control district), Meo Vac (intervention district), were 2 similar districts. PHWs selections: selected the entire PHWs which are involved in ENT examination.

### **2.3.3. Sampling for qualitative study**

06 in-depth interviews with members of board director at district hospital, members of the board of directors at general regional clinics and head of commune health stations in Meo Vac district and 04 group discussions (with the PHWs had been trained for ENT diseases and ENT patients at PHC).



#### **2.3.4. Interventions**

Conduct 01 training workshop about “Workshop on enhancement of ENT diagnosis and treatment capacity in Meo Vac district in 2014” and monitor ENT examination implementation 01 times per month in 12 months at Meo Vac PHC.

#### **2.4. Study indicators**

**2.4.1.** Study indicators to determine the ENT diseases in Mong ethnic people in Meo Vac district, Ha Giang province

**2.4.2.** Study indicator to evaluate the ENT examination capacity for PHWs in Meo Vac district

**2.4.3.** Study indicators to evaluate the effectiveness of ENT capacity enhancement solutions for PHWs

#### **2.5. Data collection**

**2.5.1.** Conduct clinical examination to detect and analyse current prevalence of ENT diseases in the community in Meo Vac district

**2.5.2.** Study on knowledge, attitudes and skills of the medical staff about ENT diseases before and after intervention

**2.5.3.** Qualitative data collection

#### **2.6. Criteria for evaluation**

**2.6.1. *Evaluation the knowledge, attitudes and skills of PHWs about ENT diseases***

Knowledge, attitude and skills are determined by score and classified by 3 levels:  $\geq 80\%$  (total points): Good level.  $> 60\% - < 80\%$  points: Moderate level.  $\leq 60\%$  points: Weak level.

**2.6.2. *Criteria for diagnosis of throat - laryngeal diseases***

**2.6.3. *Criteria for diagnosis of nose diseases***

**2.6.4. *Criteria for diagnosis of ear diseases***

#### **2.7. Bias control methods**

#### **2.8. Data analysis**

Quantitative data was inputted by Epidata 3.1 program; data analysis was conducted by SPSS 19.0 program according to medical biostatistics. Qualitative data was recorded and transcribed by

experts.

### 2.9. Ethical approval

This study did not affect the treatment of the patient, the examination of PHWs. The study has received the acceptance of Thai Nguyen University of Medicine and Pharmacy Science council and Ha Giang Health Bureau.

## Chapter 3. STUDY RESULTS

### 3.1. Current situation about ENT diseases in Mong ethnic people in Meo Vac district, Ha Giang province in 2013

*Table 3.2. The prevalence of ENT diseases by sex and age*

Indicator	N <sup>o</sup> of examined people	N <sup>o</sup> of patients	Rate %	p
<b>Sex</b>				
Male	1301	1035	79.6	> 0,05
Female	1185	924	78.0	
Total	2486	1959	78.8	
<b>Age group</b>				
1 - 6 <sup>(1)</sup>	432	354	81.9	
7 - 15 <sup>(2)</sup>	869	652	75.0	$p_{1-2} < 0,05$
16 - 25 <sup>(3)</sup>	312	218	69.9	$p_{1-3} < 0,05$
26 - 35 <sup>(4)</sup>	392	307	78.3	$p_{1-4} > 0,05$
36 - 45 <sup>(5)</sup>	232	201	86.6	$p_{1-5} > 0,05$
46 - 55 <sup>(6)</sup>	119	108	90.8	$p_{1-6} < 0,05$
> 55 <sup>(7)</sup>	130	119	91.5	$p_{1-7} < 0,05$
Total	2486	1959	78.8	

ENT diseases prevalence was 78.8%, of that: 79.6% in male and 78.0% in females. ENT diseases prevalence was highest at age group > 55 with 91.5%.

**Table 3.3. ENT diseases prevalence by specific diseases**

<b>ENT diseases</b>	<b>N° of examined people</b>	<b>N° of patients</b>	<b>Rate %</b>
Ear disease	2486	419	16.9
Nose disease	2486	787	31.7
Throat disease	2486	1483	59.7

Prevalence of throat disease was highest (59.7%), the prevalence of nose disease was 31.7% and ear disease was lowest (16.9%).

**Table 3.4. The prevalence of single and comorbidity ENT diseases by sex**

<b>Disease</b>	<b>Sex</b>	<b>Male (%)</b>	<b>Female (%)</b>	<b>Total (%)</b>
	Single disease		669 (64.6)	589 (63.7)
2 comorbidity diseases		353 (34.1)	319 (34.5)	672 (34.3)
≥ 3 comorbidity diseases		13 (1.3)	16 (1.7)	29 (1.5)
<b>Total</b>		<b>1035</b>	<b>924</b>	<b>1959</b>

The prevalence of single disease was relatively high, accounted for 64.2%, the prevalence of two comorbidity diseases was 34.3% and  $\geq 3$  comorbidity diseases was 1.5%.

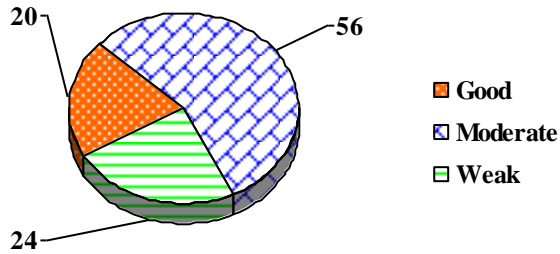
- Of ear diseases: acute otitis media was common with 26.5%; followed by otitis media with effusion 22.9% and chronic otitis media 21.7%. The rate of fungal ear was 4.5% and outer ear canal infections accounted for 1.7%.

- Of nose diseases: allergic rhinitis is the most common disease, accounted for 26.9%; followed by sinusitis was 15.1%. The rate of acute rhinitis and nasal polyps sinusitis accounted for 8.9% and 8.5% (respectively).

- Of throat diseases: chronic pharyngitis was highest with 25.2%; followed by acute tonsillitis 20.9%. The rate of acute V.A inflammation and acute pharyngitis were both 11.9%.

**3.2. The ENT examination capacity of PHWs in Meo Vac district**

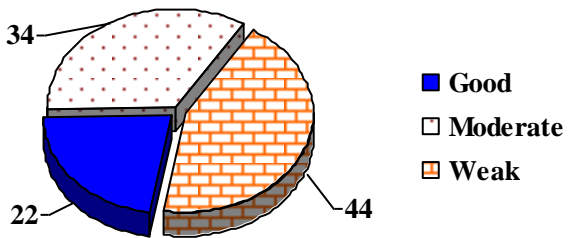
**3.2.1. Current status of knowledge, attitude, skills ENT clinical medical staff base Meo Vac district, Ha Giang**



**Figure 3.1. General knowledge about ENT diseases of PHWs in Meo Vac district**

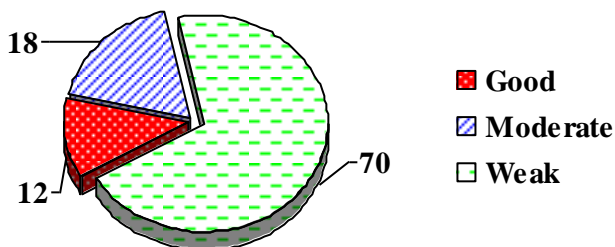
The ENT general knowledge at good, moderate and weak level was 22.0%, 34.0% and 44.0% (respectively).

**Figure 3.2. General attitude about ENT diseases**



**of PHWs in Meo Vac district**

The general attitude about ENT diseases at good, moderate and weak level was 20.0%, 56.0% and 24.0% (respectively).



**Figure 3.3. General skills about ENT diseases of PHWs in Meo Vac district**

The rate of ENT solution skills of PHWs at good level was 12.0%; moderate level was 18.0% and weak level was 70.0%.

### **3.2.2. Several factors related to the ENT solution skills of PHWs in Meo Vac district, Ha Giang province**

**Table 3:16. The relationship between the professional academic qualifications with ENT management skills**

Management skills \ Professional academic qualifications	Not good		Good	
	N <sup>o</sup>	%	N <sup>o</sup>	%
Assistant doctor	41	95.3	2	4.7
Doctor	3	42.9	4	57.1
<b>p</b>	<b>&lt; 0.05</b>			
<b>Total</b>	<b>44</b>	<b>88.0</b>	<b>6</b>	<b>12.0</b>

The rate of PHWs with professional academic qualifications is assistant doctor have good ENT management skills was 4.7%, lower than doctors (57.1%); the difference was statistically significant at  $p < 0.05$ .

**Table 3.18. The relationship between ENT certification of medical staff with ENT management skills**

Management skill ENT certification	Not good		Good	
	N <sup>o</sup>	%	N <sup>o</sup>	%
No	41	100.0	0	0
Yes	3	33.3	6	66.7
<b>p</b>	< 0.05			
<b>Total</b>	<b>44</b>	<b>88.0</b>	<b>6</b>	<b>12.0</b>

PHWs, which do not have ENT certification, do not have good ENT management skills. PHWs have ENT certification have good ENT management skills was 66.7%. The difference was statistically significant with  $p < 0.05$ .

**Table 3.19. The relationship between ENT training of PHWs and ENT management skills**

Management skill Had been training	Not good		Good	
	N <sup>o</sup>	%	N <sup>o</sup>	%
No	38	97.4	1	2.6
Yes	6	54.6	5	45.4
<b>p</b>	< 0.05			
<b>Total</b>	<b>44</b>	<b>88.0</b>	<b>6</b>	<b>12.0</b>

The rate of have not been trained PHWs had good ENT skills was 2.6%, lower than the trained PHWs (45.4%); the difference was statistically significant at  $p < 0.05$ .

**Table 3.20. The relationship between the work place of medical staff with ENT management skills**

Management Work place	Not good		Good	
	N <sup>o</sup>	%	N <sup>o</sup>	%
Commune	33	97.1	1	2.9
District	11	68.8	5	31.2
<b>p</b>	< 0.05			
<b>Total</b>	<b>44</b>	<b>88.0</b>	<b>6</b>	<b>12.0</b>

The rate of medical staff working at commune have good ENT skills was 2.9%, lower than medical staff working at district (31.2%), the difference was statistically significant ( $p < 0.05$ ).

**Table 3.21. The relationship between ENT knowledge of medical staffs with ENT management skills**

Management skills \ Knowledge	Not good		Good	
	N <sup>o</sup>	%	N <sup>o</sup>	%
Not good	37	94.9	2	5.1
Good	7	63.6	4	36.4
<b>p</b>	$< 0.05$			
<b>Total</b>	<b>44</b>	<b>88.0</b>	<b>6</b>	<b>12.0</b>

Medical staffs with good ENT knowledge have good ENT management skills, statistically significant ( $p < 0.05$ ).

**Table 3.22. The relationship between ENT attitude of medical staffs with ENT management skills**

Management skills \ Attitude	Not good		Good	
	N <sup>o</sup>	%	N <sup>o</sup>	%
Not good	38	95.0	2	5.0
Good	6	60.0	4	40.0
<b>p</b>	$< 0.05$			
<b>Tổng</b>	<b>44</b>	<b>88.0</b>	<b>6</b>	<b>12.0</b>

Good attitude of medical staffs about ENT diseases have good ENT management skills, statistical significance ( $p < 0.05$ ).

**Table 3:23. Facilities, medical equipment for ENT examination of PHWs in Meo Vac district, Ha Giang**

<b>Indicators</b>	<b>N°</b>	<b>%</b>
<b>Facilities:</b> Enough square for ENT examination	19/19	100,0
<b>Medical equipment</b>		
ENT examination kits 19/19 (sufficient for commune)	19/19	100,0
ENT endoscope (district hospital)	1	
ENT examination kits at district hospital	1	

Facilities, medical equipment for ENT examination were sufficient according to Ministry of Health regulations.

The results 02 group discussions point out the ideas about PHWs capacity was not high, some typical ideas:

***Box 3.1. The ideas of patients, examination medical staffs about ENT diseases management capacity***

*“...I confess that sometimes I am not very confident for ENT management although the prevalence of ENT in my area are regularly high...”*

Ms. Nguyen Thi N. - CHS Staff

*“...Many times I visit, I saw medical staffs do not examine anything, they just looked over and prescribe. Once time, I got runny ear but it can be treated, even I went to district hospital...”*

Giang Thi T. - ENT patients

The above ideas show the ENT management skills of PHWs in Meo Vac district still have many limitations.

The in-depth interviews about PHWs capacity of, in detail:



**Box 3.2. The ideas of PHWs in Meo Vac district about ENT management capacity**

*“...Our medical staffs have low knowledge... little training on ENT diagnosis and treatment. The ENT books and ENT communication are also limit and less approach...”*

Mr. Nguyen Van M. - Vice director Meo Vac district hospital

*“...Many medical staffs use antibiotics and analgesic regimen for ENT diseases, in addition to use other medication...”*

Ms. Giang Thi T. - Niem Son general regional clinic

*“... A lot of job, low salary, no training, no graduate training, old equipments... lack of drugs...”*

Mr. Leng A P - Head of commune health station

**3.3. Effectiveness of PHWs enhancement solutions about ENT management at PHC**

**Table 3.25. The effectiveness of knowledge change among PHWs in Meo Vac district, Ha Giang province after 01 years of intervention**

Indicators \ Period	Before intervention		After intervention		Efficiency index (%)	p
	N <sup>o</sup>	%	N <sup>o</sup>	%		
<b><i>Ear disease</i></b>						
Good	9	18.0	40	80.0	344.4	< 0.05
Moderate	21	42.0	9	19.0	54.8	
Weak	20	40.0	1	2.0	95.0	
<b><i>Nose disease</i></b>						
Good	12	24.0	42	84.0	250.0	< 0.05
Moderate	16	32.0	6	12.0	62.5	
Weak	22	44.0	2	4.0	90.9	
<b><i>Throat disease</i></b>						
Good	13	26.0	39	78.0	200.0	< 0.05
Moderate	18	36.0	10	20.0	44.4	

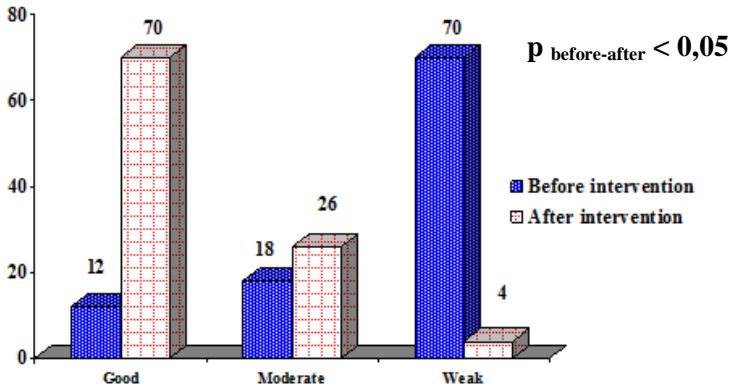
Weak	29	58.0	1	2.0	96.6	
<b>General knowledge</b>						
Good	11	22.0	40	80.0	263.6	< 0.05
Moderate	17	34.0	8	16.0	52.9	
Weak	22	44.0	2	4.0	90.9	

After intervention, general knowledge about ENT diseases at good level increased from 22.0% to 80.0% with efficiency index was 263.6%. The knowledge changes between before and after intervention were statistically significant ( $p < 0.05$ ).

**Table 3:27. The effectiveness of ENT attitude change among PHWs in Meo Vac districts (intervention district) after 01 years of intervention**

Indicators \ Period	Before intervention		After intervention		Efficiency index (%)	p
	N <sup>o</sup>	%	N <sup>o</sup>	%		
<b>Attitude about ear disease</b>						
Good	11	22.0	39	78.0	254.6	< 0,05
Moderate	27	54.0	7	14.0	74.1	
Weak	12	24.0	4	8.0	66.7	
<b>Attitude about nose disease</b>						
Good	10	20.0	41	82.0	310.0	< 0,05
Moderate	27	54.0	7	14.0	74.1	
Weak	13	26.0	2	4.0	84.6	
<b>Attitude about throat disease</b>						
Good	11	22.0	40	80.0	263.6	< 0,05
Moderate	29	58.0	8	16.0	72.4	
Weak	10	20.0	2	4.0	80.0	
<b>General attitude</b>						
Good	10	20.0	40	80.0	300.0	< 0,05
Moderate	28	56.0	7	14.0	75.0	
Weak	12	24.0	3	6.0	75.0	

The attitude level changes between before - after intervention were statistically significant at  $p < 0.05$ .



**Figure 3.4. Assessing the changes of ENT management skills among PHWs in Meo Vac district after 01 years of interventions**

After intervention, the general ENT skill at good level increased from 12.0% to 70.0% with efficiency index was 483.3%. The improving changing of skills before and after intervention were statistically significant ( $p < 0.05$ ).

**Table 3.33. Comparing the changes in knowledge, attitudes and skills about ENT management of PHWs in 02 study districts**

KAS	Control district				Intervention district				IE
	Initial survey		After 1 year		Before intervention		After intervention		
K good level	10	20.0	13	26.0	11	22.0	40	80.0	233.6
A good level	12	24.0	14	28.0	10	20.0	40	80.0	283.3
S good level	7	14.0	8	16.0	6	12.0	35	70.0	469.0
<b>p</b>	> 0.05				< 0.05				

In intervention district: KAS about ENT management of PHWs at good knowledge increased with statistical significance ( $p < 0.05$ ). In control districts, the good level KAS of PHWs also increased, with no statistical significance ( $p > 0.05$ ). The intervention solutions provide the IE for knowledge was 233.6%; attitude was 283.3% and skill was 469.0%.

**Table 3.34. The effectiveness changes in the rate of ENT referral of medical staffs in Meo Vac districts hospital (intervention district) after 01 year of intervention**

District hospital → Province hospital	Period		p		
	Before intervention	After intervention	N <sup>o</sup>	%	
Total number of referral patient	285	292			< 0.05
Number of ENT referral patient	32	16	11.2	5.6	
Referral diseases	n = 32		n = 16		
Chronic sinusitis	5	2	15.6	11.1	
Acute sinusitis	4	0	12.5	0	
Allergic rhinitis	3	0	9.4	0	
Chronic otitis media	4	2	12.5	11.1	
Chronic mastoiditis	4	3	12.5	16.7	
Tonsillitis need to do surgery	6	2	18.8	11.1	
ENT tumor	6	7	18.8	38.9	

The ENT referral rate from district to province decreased from 11.2% to 5.6%, which was statistically significant at  $p < 0.05$ .

**Table 3.35. The effectiveness changes in the rate of ENT referral of commune medical staffs in Meo Vac districts (intervention district) after 01 year of intervention**

Commune health station → District hospital	Before intervention		After intervention		p
	N°	%	N°	%	
Total number of referral patient	2417		2289		< 0,05
Number of ENT patient	416	17.2	215	9.4	
Referral diseases	<i>n = 416</i>		<i>n = 215</i>		
Acute pharyngitis	39	9.4	8	3.7	
Chronic pharyngitis	47	11.3	16	7.4	
Acute tonsillitis	43	10.3	7	3.3	
Chronic tonsillitis	50	12.0	11	5.1	
Enlarged tonsillitis	28	6.7	35	16.3	
Acute sinusitis	37	8.9	11	5.1	
Chronic sinusitis	47	11.3	24	11.2	
Allergic rhinitis	31	7.5	8	3.7	
Otitis media with effusion	19	4.6	35	16.3	
Acute otitis media	36	8.7	6	2.7	
Throat abscess	18	4.3	29	13.5	
Foreign bodies in the ear	21	5.1	25	11.6	

After intervention, ENT referral rate from commune to district level decreased from 17.2% to 9.4%, with  $p < 0.05$ .

- The ENT referral rate from Dong Van district to province level in 2013 was 14.2%; this rate in 2014 was 15.7%; the difference was not statistically significant with  $p > 0.05$ .

- The ENT referral rate from commune to Dong Van district was 17.8% in 2013 and increased to 19.1% in 2014, the difference was not statistically significant with  $p > 0.05$ .

The results of 02 group discussions and 03 in-depth interviews about the effectiveness of ENT capacity enhancement after 1 year of intervention, we obtained positive ideas, as below:

### ***Box 3.3. Effectiveness of interventions***

*“...The intervention activities of one year program was very successful and sustainable...”*

Mr. Nguyen Van M. - Vice director of Meo Vac district hospital

*“...Now, I am more confident in examination, in prescription, better consultation... which is attract more patients visit commune health station than before due to the belief of my examination...”*

Mr. Giang A Ch. - Head of commune health station

*“...Now, I believe medical staffs, I got diseases several times and medical staffs give well treatment...”*

Mr. Ly Van T. - ENT patients

After 01 years of intervention: knowledge, attitudes and skills of PHWs were improved.

### ***Box 3.4. Several inadequacies of intervention results***

*“...Most of PHWs are better after monitoring, however, some of them are not good... due to lazy of learning and reading...”*

Luong Thi H. - General regional clinic manager

*“...After training workshop, some medical staffs are not confident in ENT practice. When they detected ENT disease, they refer to above level, many referral case are not adequacy. They do not dare to do ENT treatment therefore, they are weaker in ENT disease...”*

Mr. Nguyen Van M. - Vice director of Meo Vac district hospital

*“...My commune health station is very near the district hospital, the patients have just want to refer, and all of them are in relation, I am afraid to refuse...”*

Mr. Leng A P. - Head of commune health station

Some factors affect the capacity enhancement results about ENT examination were: health workers do not want to learn and work by themselves; do not have patient visit their office.

## **Chapter 4. DISCUSSION**

### **4.1. Current situation about ENT diseases in Mong ethnic people in Meo Vac district, Ha Giang province in 2013**

The ENT prevalence in our study was high (78.8%). This result is higher than the prevalence of ENT diseases in Viral Shah et al's study (2014) with 46.6%. This results also higher than some other study: Pham The Hien et al (2004) study on adults in Ca Mau province shows the prevalence of chronic ENT disease was 34.4%. Phung Minh Luong (2010) presented the prevalence of ENT in Ede ethnic people was 58.9%. Our study result is higher due to: (i) our study subject are Mong ethnic people - they live in the high mountain slopes, less body hygiene as well as nose and throat hygiene, and there are many old backward customs... (ii) In addition, the primary health care system in the study area (Meo Vac district) has many limitations.

The results in Table 3.3 show the prevalence of ear disease was lowest (16.9%), prevalence of nose disease was 31.7% and prevalence of throat disease was highest (59.7%). Our study results are similar to Hannaford P.C 's study (2005), Tran Duy Ninh et al (2001), with throat disease was highest. This result is entirely practical; consist with the location, the custom and socioeconomic status of Mong people.

### **4.2. The ENT examination capacity of PHWs in Meo Vac district**

#### **4.2.1. Current situation about ENT KAS management of PHWs in Meo Vac district, Ha Giang province**

Our study shows that ENT KAS of PHWs in Meo Vac were limited. Qualitative study results also point out that ENT examination skills of PHWs in Meo Vac district have many shortcomings. This result was the consequence of do not have postgraduate education or ENT training, of do not actively learn/study/investigate about ENT diseases, of medical facility/equipment conditions for ENT examination.

#### ***4.2.2. Several factors related to the ENT management skills of PHWs in Meo Vac district, Ha Giang province***

There was a relationship between professional academic qualifications of PHWs with the ENT management skills ( $p < 0.05$ ). With this statistical significance relationship, the most reasonable solution to improve the quality of health care and in ENT management (in detail) are continual training doctors from assistant doctors. The study shows an statistical significance association between workplace with ENT management skills ( $p < 0.05$ ). This is entirely appropriate, because the health staffs work in district level have high rate of doctors, and the doctors in district level often had post graduated training or attend workshop and have ENT certification. There was statistically significance association between knowledge and attitudes with ENT management skills of medical staffs ( $p < 0.05$ ). The relationship between knowledge, attitudes and skills has been clearly demonstrated in behavioral sciences: good knowledge and good attitude will give good skills.

#### **4.3. Effectiveness of PHWs enhancement solutions about ENT management at PHC**

The intervention results show that intervention solutions provide IE about ENT knowledge was 233.6%; IE for attitude was 283.3% and skill was 469.0%. This is initial step for expanding the capacity enhancement solutions intervention of PHWs for the common diseases in the community; this also is a breakthrough solution to improve the quality of PHC, which is response for innovation and the health care requirements for people in the community. Intervention study show the ENT referral rate from the district to the province decreased from 11.2% to 5.6% in intervention district, which was statistically significant with  $p < 0.05$ . The ENT referral rate in Dong Van District (control district) has no remarkable changes. This result is completely consistent with the reality, because the ENT management capacity was improved, the medical equipment were replaced/supplied, hence ENT examination is better, which is reduced the referral patient rate.



## CONCLUSIONS

### **1. ENT diseases in Mong ethnic people in Meo Vac 2013 was relatively popular, including:**

- The prevalence of ENT diseases in Mong ethnic people was 78.8%, of that, the rate in men was 79.6%, in female was 78.0%.

- The prevalence of ENT diseases was highest at age group > 55 years old (91.5%), the lowest prevalence was at age group 16-25 years old (69.9%).

- The prevalence of ear, nose and throat disease were 16.9%, 31.7% and 59.7% (respectively).

- The prevalence of a single disease was 64.2%, two diseases comorbidity was 34.3% and  $\geq 3$  diseases comorbidity was 1.5%.

- Of ear diseases, acute otitis media was the most common, accounted for 26.5%; followed by otitis media with effusion 22.9%.

- Of nose diseases: allergic rhinitis was the most common, accounted for 26.9%; followed by sinusitis was 15.1%.

- Of throat diseases: chronic pharyngitis has highest prevalence with 25.2%; followed by acute tonsillitis 20.9%.

### **2. The capacity of PHWs about ENT examination is limited**

- The general knowledge about ENT disease at good, moderate and weak level was 22.0%, 34.0% and 44.0% (respectively). The general attitude of ENT diseases at good level was 20.0%, moderate level was 56.0% and weak level was 24.0%. The rate of PHWs with general skills about ENT diseases at good level was 12.0%, moderate level was 18.0% and weak level was 70.0%.

- Factors: professional academic degrees, ENT certification,

received training workshop, work place, ENT diseases knowledge, ENT diseases attitude were associated with ENT management skills of primary health workers in Meo Vac district, Ha Giang province.

**3. The capacity enhancement solution about ENT examination of PHWs after 01 year of intervention had high effectiveness, including:**

- General knowledge about ENT diseases of PHWs in Meo Vac district at good level increased to 80.0% with efficiency index was 263.6%. The general attitude at good level increased to 80.0% with efficiency index 300.0%. General skill at good level increased to 70.0% with efficiency index was 483.3%. The changes before - after intervention were all statistically significant ( $p < 0.05$ ).

- After intervention, in Meo Vac district: the ENT referral rate from the district to the province decreased to 6.2%; from commune to district level dropped to 9.4% ( $p < 0.05$ ).

- The capacity enhancement solution about ENT examination of PHWs in Meo Vac district have intervention effect for knowledge was 233.6%; attitude was 283.3% and skills was 469.0%.

## **RECOMMENDATIONS**

- Reviewing and reinvest the facilities, the medical equipment for ENT examination in PHC of Meo Vac district, Ha Giang.

- Strengthening the training and re-training for PHWs about ENT disease.

- Continuing to maintain the ENT examination monitoring for PHWs in Meo Vac. Ha Giang health bureau can applied this model to improve the quality of health services for people in the community.

**LIST OF PAPERS PUBLISHED  
RELATING TO DISSERTATION**

1. **Pham Manh Cong, Nguyen Van Son, Do Ham, Vo Thanh Quang** (2015), “Current situation of ear nose throat diseases in Mong ethnic people in Meo Vac district, Ha Giang province”, *Vietnam Journal of Otorhinolaryngology*, Volume 60-26, N<sup>o</sup> 2, pp. 49-53.
2. **Pham Manh Cong, Nguyen Van Son, Luong Minh Huong** (2016), “Effectiveness of enhancement solution of ear nose throat diseases examination for primary medical staffs in Meo Vac district, Ha Giang province”, *Vietnam Medical Journal*, Volume 446, N<sup>o</sup> 2, pp. 128-132.
3. **Pham Manh Cong, Nguyen Van Son, Luong Minh Huong** (2016), “Knowledge, attitude and skill of ear nose throat diseases examination among primary medical staffs in Meo Vac district, Ha Giang province”, *Vietnam Journal of Otorhinolaryngology*, Volume 61-33, N<sup>o</sup> 3, pp. 33-39.